12th European Research Seminar (ERS) on Logistics and SCM

18 and 19 May 2017
World Trade Center
Barcelona, Spain
Welcome

The Council of Supply Chain Management Professionals (CSCMP), IE Business School and Zaragoza Logistics Center organize the twelfth European Research Seminar (ERS in Barcelona, 18 and 19 May 2017. The conference takes place in parallel with the annual conference of CSCMP Spain Roundtable offering unique opportunities for interaction.

The purpose of ERS is to expose and discuss contemporary issues in European logistics and supply chain management. ERS is a platform for intensive interaction among scholars, both formally in the sessions and informally outside of them.

Topics include:
- SC Risk Management
- Sustainability
- SC Theory
- SC Relationships
- SC Innovation
- Visibility
- Logistics Cluster

Rick Blasgen
President CSCMP

Angel Diaz
IE Business School

Maria Jesus Saenz
MIT-Zaragoza Logistics Center

Britta Gammelgaard
Copenhagen Business School

Carl Marcus Wallenburg
WHU Otto Beisheim School of Management
## AGENDA - Thursday, 18 May 2017

### SCHEDULE | ACTIVITY

| 8:45 - 9:15 | Registration & Welcome Coffee |
| 9:15 - 10:00 | **Welcome & Introduction | Room A1**

(Rick Blasgen- President CSCMP, Prof. Angel Diaz-IE Business school & Prof. Maria Jesus Saenz- MIT ZLC, Conf. Chairs: Prof. Britta Gammelgaard- Copenhagen Business School & Prof. Carl Marcus Wallenburg - WHU Otto Beisheim School of Management)

| 10:00 - 12:00 | **Track 1 | Room A1**

**Track 1.1 | SC Risk Management**

Chair - Prof. Angel Diaz

**Track 2 | Room A4**

**Track 2.1 | Sustainability**

Chair - Prof. Fredrik Nilsson

| 10:00 - 10:30 | Applying a Risk Management Framework to an International Supply Chain.

Anna Corinna Cagliano
Sabrina Grimaldi
Carlo Rafele
Giovanni Zenezini

| 10:30 - 11:00 | Integrating Financial and Supply Chain Strategies for Mitigating Foreign Exchange Risk.

George A. Zsidisin
Barbara Gaudenzi

| 11:00 - 11:30 | Managing cyber risks in global supply chains

Michael Herburger
Ayman Omar
Patrick Freinberger

| 11:30 - 12:00 | Towards a schema to describe supply chain disruptions: Can we learn from “the Ancients”?

Mikaella Polyviou
M. Johnny Rungtusanatham
A. Michael Knemeyer
Keely Croxton

| 12:00 - 12:30 | Coffee/Tea break (30min)

| 12:30 - 14:00 | **Discussion Topic I | New Perspectives On Collaborative Dynamics | Room A4**

Desiree Knoppen, Professor and Department Head Marketing, Operations and Supply, EADA Business School

Elena Revilla, Professor and DBA Program Director, Dpt. of Operation and Technology Management, IE Business School

Maria Jesus Saenz, Professor and Executive Director, MIT-Zaragoza Logistics Center

| 14:00 - 15:00 | Networking Lunch
# AGENDA - Thursday, 18 May 2017

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<td>Barcelona Port Visit: Guided Tour (Optional, 40 people max.)</td>
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<td>16:30 - 17:30</td>
<td>Keynote Speech: by JBL Editors-in-Chief</td>
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<td>Prof. Tom Goldsby and Prof. Walter Zim</td>
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<td>Chair - Prof. Davide Luzzini</td>
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<td>17:30 - 18:00</td>
<td>Supply chain theory: a path forwards for researchers.</td>
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<td>Andreas Wieland</td>
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<td>Robert Handfield</td>
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<td>Structural review of theories in healthcare supply chain management.</td>
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<td>Zach Zacharia</td>
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<td>Organizational responses to perceived resource scarcity</td>
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<td>in buyer-supplier relationships.</td>
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<td>Robert Wiedmer</td>
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<td>The Impact of Salespersons’ Behavioral Constraints on Supplier Integration.</td>
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# AGENDA - Friday, 19 May 2017

## SCHEDULE

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<tr>
<td>8:15 - 8:45</td>
<td>Welcome Coffee/Tea (30 min)</td>
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<td>8:45 - 9:45</td>
<td>**Track 1</td>
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<td>**Track 2</td>
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<td>9:15 - 9:45</td>
<td>Open innovation: how manufacturing companies bridge the gap between strategy and reality in supply chain management? The case of Poland.&lt;br&gt;Barbara Ocicka</td>
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<td>9:45 - 11:15</td>
<td>**Discussion Topic II</td>
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<td>11:15 - 11:45</td>
<td>Coffee/Tea break (30 min)</td>
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<td>11:45 - 13:15</td>
<td>**Track 1</td>
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<td>**Track 2</td>
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<td>12:15 - 12:45</td>
<td>Smart construction logistics - the case of a Dutch inner city hospital and university.&lt;br&gt;Bogers Enide&lt;br&gt;R. Postulart&lt;br&gt;W. Ploos van Amstel&lt;br&gt;S.J.C.M. Weijers</td>
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<td>12:45 - 13:15</td>
<td>Data Source Taxonomy for Supply Network Structure Visibility.&lt;br&gt;Johannes Zrenner</td>
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<td>13:15 - 13:30</td>
<td>Closing Day 2</td>
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<td>13:45 - 14:30</td>
<td>Networking Lunch</td>
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<tr>
<td>14:30 - 15:30</td>
<td>Barcelona Port Visit: Guided Tour (Optional)</td>
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KeyNote Speakers

Walter Zinn
Associate Dean for Graduate Students and Programs
Professor of Logistics

Professor Zinn’s research interests focus primarily on the impact of customer service policies on the determination of safety stocks. As part of this focus, his research addresses issues such as the effects of inventory centralization and sales forecasting on safety stocks, logistics partnerships and, more recently, consumer reactions to stockouts. Professor Zinn is also interested in logistics issues in Latin America and received a logistics innovation award from the Latin American Logistics Center.

His research has been published in such academic journals as the Journal of Business Logistics, European Journal of Operational Research, Journal of the Operational Research Society, The International Journal of Logistics Management, Journal of the Academy of Marketing Science and Business Horizons. Professor Zinn is also a member of the editorial review board of the Journal of Business Logistics and The International Journal of Logistics Management. He recently completed two studies for the World Bank, both discussing supply chain management problems generated by imperfections in public policy, and works regularly with the business community as a speaker at logistics conferences and meetings in the United States, Brazil and other countries in Latin America.

AREAS OF EXPERTISE
INTERNATIONAL
Central and Latin América

LOGISTICS / SCM
Logistics Customer Service

EDUCATION
PhD, Michigan State University
MBA, Michigan State University
BA, Fundacao Getulio Vargas, Brazil
Dr. Thomas J. Goldsby is the Harry T. Mangurian, Jr. Foundation Professor in Business and Professor of Logistics at The Ohio State University. Dr. Goldsby holds a B.S. in Business Administration from the University of Evansville, M.B.A. from the University of Kentucky, and Ph.D. in Marketing and Logistics from Michigan State University.

Dr. Goldsby is Co-Editor-in-Chief of the Journal of Business Logistics and former Editor of Transportation Journal. He serves as Associate Director of the Center for Operational Excellence (COE), a Research Fellow of the National Center for the Middle Market, and a research associate of the Global Supply Chain Forum, all housed at Ohio State’s Fisher College of Business.

His research interests include logistics strategy, supply chain integration, and the theory and practice of lean and agile supply chain strategies. He has published more than 50 articles in academic and professional journals and serves as a frequent speaker at academic conferences, executive education seminars, and professional meetings. He is co-author of five books: Logistics Management: Enhancing Competitiveness and Customer Value (MyEducator, 2015), The Definitive Guide to Transportation (Financial Times, 2013), Global Macrotrends and Their Impact on Supply Chain Management (Financial Times, 2013), The Design and Management of Sustainable Supply Chains (Cambridge University Press, 2016), and Lean Six Sigma Logistics: Strategic Development to Operational Success (J. Ross Publishing, 2005). Dr. Goldsby is a recipient of the Best Paper Award at the Transportation Journal (2012-2013), Bernard J. LaLonde Award at the Journal of Business Logistics (2007), and has twice received the Accenture Award for best paper published in the International Journal of Logistics Management (1998 and 2002).

Dr. Goldsby has received recognition for excellence in teaching at Iowa State University, The Ohio State University, and the University of Kentucky. He delivered a course on Business Operations for The Great Courses’ Critical Business Skills series in 2015. He is recognized as one of the most productive researchers all-time in the field of Logistics Management.

Dr. Goldsby has delivered keynote addresses and conducted workshops throughout the world and served as a Visiting Professor at the Copenhagen Business School (2015), WHU-Otto Beisheim School of Management (2013), and Politecnico di Milano (2008). He is a member of the selection committees for several industry awards. Dr. Goldsby has supervised more than 100 Lean/Six Sigma supply chain projects with industry partners, chaired seven Ph.D. dissertations, and served as an investigator on five federally funded research projects, exceeding $2 million in grant proceeds. In his spare time, Dr. Goldsby competes as one of the top masters (over-40) runners in America for distances between the mile and the marathon.
Discussion Topics

Discussion Topic I | New Perspectives On Collaborative Dynamics
18 May | 12:30 - 14:00 | Room A4

-Desirée Knoppen, Professor and Department Head Marketing, Operations and Supply, EADA Business School, dknoppen@eada.edu
-Elena Revilla, Professor and DBA Program Director, Dept. of Operation and Technology Management, IE Business School, elena.revilla@ie.edu
-María Jesús Saénz, Professor and Executive Director, MIT-Zaragoza Logistics Center, mjsaenz@zlc.edu.es

Introduction and motivation:
After 20 plus years of talking about collaboration, there is still a long way to go. Recent headlines reveal that companies still struggle to work together. The current global and collaborative economy presents multiple pressures to companies to improve the co-creation of value offered while at the same time reduce costs and environmental footprint. As a consequence, companies have started to explore new forms of collaborative relationships with selected partners in order to create competitive advantage (Saenz, Revilla and Knoppen, 2014).

The aim of this session is to discuss how collaborative dynamics shift when iterating between sensing, seizing and transforming when the aim is sustainability driven innovation (Knoppen and Knight, 2017). Collaboration is vital for dynamic capability development, and more precisely for sensing (i.e., identification and assessment of an opportunity), seizing (i.e., mobilization of resources to address an opportunity and to capture value from doing so), and transforming (i.e., continued renewal) (Teece, 2012). We will contrast practices across these three stages and invite the audience to interpret and complement the results from our study. Key research questions in that regard are: how do collaborative dynamics shift when iterating between sensing, seizing and transforming when the aim is sustainability driven innovation? What are the differences in assumptions and logics for collaboration in BSF when compared to the established firms? What can we learn from these first movers in terms of organizing supply markets for sustainability-oriented innovations?

2. Multiple dimensions for collaborative dynamics:
Collaborative strategies can be deployed from very different angles. Different types of alliances can be configured depending on multiple criteria: the nature of the partners involved, depending on the number of partners, which are the different roles they can play in the collaborative relationship, the different resources they can place for the benefit of the network, how complementary these resources could be, the joint value proposition, etc.

Collaboration can take multiple forms. The most classical approach is vertical collaboration, when the different roles aligned in a value chain promote collaboration for the benefit of the holistic sequence. Horizontal collaboration occurs when two or more companies cooperate at the same level on a certain market within the same supply chain or between different ones, to obtain benefits they could not achieve independently. At the same time, horizontal collaboration can take many forms, ranging from relationships between suppliers, between customers and priorities (Markman and Krause, 2016). In contrast, new businesses have a distinct advantage in being relatively free of path dependencies. Entrepreneurs establishing new firms can determine their economic, environmental and social objectives and develop supply chains to suit. Whilst they will experience constraints, such as lack of resources or competent suppliers, they will not experience constraints arising from being embedded in supply chain arrangements with contract lock-in and complex interdependencies.

Drawing an analogy to the notion of ‘born global’ firms, we regard ‘born sustainable’ firms (BSF) as those which were established with explicit strategic intent to operate in a sustainable manner from the outset. The established firms, despite being in general less radical in their approach to sustainability driven innovation compared to the BSF, have the clear potential to scale given their existing market position. Therefore, ultimately it is the co-evolution of both that transforms the industry. A deep understanding of how successful BSF shape collaborative dynamics to address sustainability may help established firms to accelerate their own sustainability transition (Knoppen and Knight, 2017).

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1. Collaborative dynamics for sustainability:
Consumers, regulators and the public at large increasingly share a sense of urgency to introduce sustainability-oriented innovations to tackle over-consumption, environmental degradation and social inequity. Responding to these pressures, established firms are adapting their internal operations and supply chain arrangements to improve their environmental and social performance. In doing so, managers have to contend with legacy structures and practices which constrain their ability to implement change in response to shifting goals and priorities (Markman and Krause, 2016). In contrast, new businesses have a distinct advantage in being relatively free of path dependencies. Entrepreneurs establishing new firms can determine their economic, environmental and social objectives and develop supply chains to suit. Whilst they will experience constraints, such as lack of resources or competent suppliers, they will not experience constraints arising from being embedded in supply chain arrangements with contract lock-in and complex interdependencies.

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promoting joint logistic decisions, between multiple logistic service providers pairing their networks, or pairing inverse logistic needs. But we can think about other forms if we combine the two basic ones, vertical and horizontal, termed “diagonal” collaboration. In the latter extreme, we can think about how we can get a synchronized and integrated value network (Saenz et al., 2017).

But this implies high complexity when aligning all these different incentives and drivers. Sometimes they are even opposed, since the combination of the more formal control mechanisms such as a simple contract, and its rules, could play in favor of some relationships, while others might need more flexible, social and trust-oriented mechanisms. Additionally the landscape of the different partners and stakeholders play an important role in achieving good momentum for the relationships, from competitors, buyer-suppliers, neutral trustees down to independent volunteers.

But there is a lack of understanding of how these different forms and features of collaboration can dynamically interact and play a significant role together.

The benefits of promoting collaboration have been very well perceived by the industry throughout history. It might foster higher productivity and long-term competitiveness; collaborative innovation in business models, products and services; or cost savings as well as reducing CO2 emissions, among many others. But, to reap such reward, the joint definition of a value proposition for the collaboration, becomes essential. The value proposition represents the common goal, the reasons and expected benefits of the collaboration (Gebauer et al., 2013; Osterwalder and Pigneur, 2010). It also requires identifying the firm’s dynamic and operational capabilities (such as infrastructure or distribution channels) as well as the revenue stream that allows different types of networks to develop (Teece et al., 1997).

But the key research question here is: what are the dynamics between value proposition and value sharing for multidimensional collaboration, and how can this shared value be sustainable in the long run?

3. Overcoming the dark side of collaboration:

Close relationships are not always synonymous with good relationships. And the same is true between businesses that have worked together for a long time. Some scholars have recently called to our attention the existence of the “dark side” of collaborative buyer-supplier relationships. There’s a dysfunctional “dark side” to business relationships—one where complacency, closed-mindedness, short cuts, and “group thinking” overshadow the good side of close interactions. With too much trust, a buyer may avoid actively questioning its supplier’s motives, decisions, and actions. Too much closeness promotes complacency and impedes creative solutions. Excessive reciprocity creates unnecessary obligations, reducing alternatives and unduly consuming relevant resources. Too much friendship between managers from both sides can result in a tendency to hide declining performance and increase reluctance to switch partners. Excessive interaction may lead both parties to become too similar in their thinking and resist useful ideas from outside their relationship. Thus, excessive collaboration may become counter-productive for the BSR.

How might buying companies avoid such negative outcomes? In trying to address this question, we will start by mentioning three types of risks (loss of objectivity, partner opportunism, knowledge redundancy) that give the dark side a foothold, and suggest two factors that accentuate these risks (a long history of buyer-supplier collaboration and a long-term perspective of continuity). Then we will describe the managerial tools that can be used in close relationships within the supply chain: Challenging goals, rotation policies and contracts. Challenging goals are purposefully designed to reduce overconfidence and complacency and promote new ways of thinking and acting. Rotation policies, whereby the customer periodically rotates the personnel who interact with a specific supplier, can help avoid excessive camaraderie. Contracts can be used as a coordination and control mechanism into which a buyer can gradually incorporate more precise terms, based on past working experiences with suppliers. Finally, we will propose a four-step process to avoid becoming trapped in a dysfunctional relationship. Managers must stay vigilant to detect early signs of often-overlooked negative outcomes of too much collaboration. They have to anticipate future directions in any supplier relationship as well as its history to date, because both time dimensions have an impact on the counter productive outcomes of too much closeness. Furthermore, managers must remain proactive, set challenging goals, practice rotation policies, and use contracts as coordination and control tools. Finally, managers must learn how to manage the paradoxical tension of benefiting from the closeness of relationship while dealing with its downside. Throughout, we will also cite examples of good relationships that have gone bad.

References:


**Discussion Topic II | Supply Chain Sustainability in the EU: The Cultural Dimension**

**19 May | 9:45 - 11:15 | Room A4**

-Paul D. Larson, CN Professor of SCM, University of Manitoba, larson@cc.umanitoba.ca

**Topic description:**
This session is an interactive discussion of cultural influences on logistics across nations. It adds the cultural dimension, as a fourth dimension of sustainability, to the traditional triple bottom line (TBL) elements: economic, environmental and social. The session starts by presenting a brief comparison of countries within the European Union (EU), along with selected neighbors, in terms of logistics performance, sustainability, and elements of culture including diversity and equality. A proposed theoretical model, based on literature and conceptual thinking, guides the presentation. This model is then tested using secondary data. A database of national indicators includes the following measures from published sources: cultural fractionalization (CF), gender inequality (GI), GDP and power distance (PD). CF is the probability that two randomly drawn individuals (from a country) are from different cultural groups. Countries with many ethnic groups speaking distinct languages have low cultural resemblance. GI estimates gender inequality across aspects of human development, such as empowerment and economic status. GDP, a primary indicator of a nation’s economic health, is the total dollar value of goods and services produced over a given time period. PD assesses cultural perspectives toward inequalities among a nation’s people. The anticipated findings are that cultural dimensions have an impact on logistics performance and sustainability of nations. The results might help organizations make better location and other logistics decisions. They might also inspire government agencies to adopt public policies that promote or support equality and diversity. Further, this session may inspire academics to conduct additional research on the influence of culture on logistics. This session may be one of a very few, or even the first, to link logistics capabilities/performance and sustainability to the cultural dimension.

**Audience appeal:**
Given the ongoing globalization of business—and the trend toward mass migration of people across national borders and continents—the topic is sure to be of broad interest to both logistics academics and practitioners.

**References to papers:**
There appear to be very few writings or discussions on this important topic. Several rare publications/presentations on the topic include Aquilon (1997), Harps (2003), and Larson (2015; 2016). These works serve to inspire the proposed session.

**Suggested format**
A workshop format is suggested for the session, with participants discussing aspects of the topic in small groups, and then coming together for further large-group discussion. Three critical aspects or questions for small group discussion are: What are several promising theories or sources of theory to explain the influence of culture on logistics? How can the relevant cultural variables best be measured? What are some promising sources of data? What are the implications of cultural influence for logistics theory and practice?

**Learning outcomes:**
These are focused on greater appreciation of the cultural dimension in logistics and sustainability. Academics might identify interesting opportunities for research into cultural aspects of logistics and supply chain management. For the practitioners, possible outcomes include better logistics decisions, in light of cultural considerations.

**References**


International supply chains (SCs) are highly exposed to uncertainty and subjected to the interrelated effects of adverse events occurring in different echelons. Literature on SC risk is quite rich from a theoretical point of view by classifying risk sources and providing methodologies to address the risk escalation process. However, there are few contributions illustrating practical applications of these approaches and studying the effects of a same risk source on multiple SC process. The latter characteristic is highly desirable in international SCs given their extended and interconnected nature. The present work applies a risk analysis framework to a portion of an international automotive SC. Two representative processes are investigated, the associated risk sources are identified and then associated with activities. Key performance indicators are selected and their cause and effect relationships are studied with the aim of assessing the multiple effects of risk sources. The application of the risk management approach allowed the focus company to develop a comprehensive knowledge of the risks affecting global SCs and their effects. The approach proves to be a valid tool to enhance companies’ maturity toward risk and the present work might stimulate research on how to address risks in international SCs.

Global supply chains are exposed to risk from many sources. Foreign exchange (FX) fluctuations among currencies is one source of risk many firms are exposed to, which can pose significant financial losses for organizations in their global supply chains. Finance is frequently tasked as the business function responsible for creating financial strategies for hedging this form of risk. However, from a supply chain finance perspective, we argue firms should consider an array of approaches utilizing cross-functional teams, including supplier and customer participants, in creating a holistic strategy and range of approaches for mitigating FX risk exposure. The purpose of this paper is to create a framework for examining how firms can create a holistic strategy for mitigating the detrimental effects of FX risk within their firms and supply chains. In particular, the focus of the paper is the integration of financial and supply chain management approaches for mitigating FX risk exposure from a cross-functional, interorganizational perspective. Through a literature review and theory development, we argue business functions including logistics, finance, marketing, supply management, operations and legal, as well as customers and suppliers, can serve critical roles in helping organizations develop and utilize financing, contracting, and operating strategies as part of an overall FX risk mitigation approach.
different supply chains. Reducing a company’s risks of cybersecurity threats can no longer be viewed in isolation, rather this should be addressed as a network wide problem. The supply chain management literature addresses this problem briefly yet a significant gap in the literature remains. While the literature is rich with studies that examine risk types and risk mitigation strategies, risks from cyber-attacks on supply chains have yet to receive sufficient attention given their scope and potential impact. The objective of this research is to address the existing gap in the literature by examining the phenomenon of cybersecurity practices in global supply chains. Specifically, our goal is to provide deep and rich insights into managerial practices to further understand this complex social process.

4-Towards a schema to describe supply chain disruptions: Can we learn from “the Ancients”?

-Mikaela Polyviou, W. P. Carey School of Business, Arizona State University, mikaela.polyviou@asu.edu
-M. Johnny Rungtusanatham, Fisher College of Business, The Ohio State University, rungtusanatham.1@osu.edu
-A. Michael Knemeyer, Fisher College of Business, The Ohio State University, knemeyer.4@osu.edu
-Keely Croxton, Fisher College of Business, The Ohio State University, croxton.4@osu.edu

Supply Chain Management (SCM) researchers have typically described supply chain disruptions (SCDs) using the following dimensions: 1) the “location” of the triggering event, in the supply chain network, causing the SCD; and 2) the triggering event’s probability of occurrence and severity of impact. Although the resulting descriptions are informative, they are insufficient because they do not differentiate SCDs adequately. They are also ambiguous as to the way their dimensions are assessed. As a result, prior descriptions do not delineate the nature of SCDs sufficiently. In turn, they hinder our holistic understanding of and ability to build theory around antecedents and outcomes of SCDs. To overcome this concern, we draw learnings from Ancient Rhetoric to propose a schema that: 1) asks the right questions about SCDs, and 2) points to key dimensions and characteristics that may be used to describe and later classify SCDs. We contend that our schema helps SCM researchers describe and evaluate SCDs; begin examining inter-relationships among dimensions of SCDs; assess empirically whether SCD types exist; and predict the effects of different SCD types on outcomes of interest, such as disruption severity and organizational responses and recovery. Our schema also helps SCM professionals describe and understand SCDs during the beginning stages of the SCD-resolution process; identify the relevant stakeholders and communicate pertinent information about the SCD to them; select the most appropriate strategies and locate the resources necessary to mitigate the effects of the SCD; and implement plans proactively to deal with any future SCDs.

Government procurement is often within the annual legal business report documents. But in-depth research is missing regarding the productivity of LSP regarding the established triple-bottom-line approach for sustainability. In the present work, lean and resilient practices applied to supply chains are studied in order to evaluate their impact on sustainability performance. For this purpose, the aerospace sector and its supply chain is chosen, since lean and resilient practices have been proven relevant in the sector. A methodology based on Interpretive Structural Modeling (ISM) approach is applied in order to identify the existing relationships between lean and resilient supply chain practices and their impact on the three different dimensions of sustainability. Relevant managerial implications that will help decision makers are drawn from the study. Results reveal synergistic effects between lean and resilient practices. The first ones act as drivers of the second ones. Hence, lean practices lead to direct and indirect effects in achieving supply chain sustainability.

2-Longitudinal Sustainability Evaluation for European Logistics Service Providers: A DEA Malmquist Index Calculation.

-Matthias Klumpp, University of Duisburg-Essen, matthias.klumpp@prim.uni-due.de; matthias.klumpp@outlook.com

Sustainability performance and compliance is a core topic for logistics service providers (LSP) in Europe and worldwide. This is – among others – proven by the fact that all major LSP publicly provide extensive sustainability data and reports, often within the annual legal business report documents. But in-depth research is missing regarding the productivity of LSP regarding the established triple-bottom-line approach for sustainability, including economic, social and ecology performance areas. This is especially true for a dynamic time-series perspective, as usually only static analyses for one point in time are presented (in most cases one business year). Therefore, the operation s research technique of a data envelopment analysis (DEA) Malmquist index calculation is used in order to provide a longitudinal calculation of efficiency incorporating multiple objectives regarding the triple-bottom-line approach for European LSP. Several indicators are tested for DEA evaluation, including total revenues and assets as input types as well as profit (EBIT) and dividend volume (economic dimension), employment and gender equality in management (social dimension), as well as carbon-equivalent emissions (environmental dimension) as output types. Data is used for the timeframe of 2006 to 2015 as available from major European LSP like DB Schenker, DHL, DSV, Küh.
Environmental sustainability is a rapidly becoming necessity in many business sectors. Moreover, the scope of environmental management is extending beyond organisational walls and increasingly taking responsibility for environmental practices externally, across the supply chain. Academics as well as practitioners have underlined the importance environmental activities across the supply chain. Although the literature widely addresses environmental issues in recent years (topics including reverse logistics, lifecycle analysis, green procurement, decarbonisation and waste reduction), limited research has investigated how environmental expectations/requirements, environmental efforts and environmental performance are interrelated.

This paper investigates the effect of buying firms on the suppliers’ environmental actions, and their ultimate impact on performance. This is carried out via development and test of 12 hypotheses using structural equation modelling. Buying firms are studied based on their environmental requirements and the support provided to suppliers. Environmental actions are defined in terms of resource management, energy efficiency, logistics and transport, and material management constructs. Performance is defined in terms of financial, market and operational performance constructs. Each research construct is identified based on a set of measured variables. The research constructs and their measured variables form a structural equation model which tests the research hypotheses. The hypotheses are tested based on a survey with data collected from 267 suppliers of the public sector in the UK. The results back the research hypotheses, and relationships have been found significant but in different levels. The survey outcomes also reveal that the existing perception of the impact of buyers’ environmental actions on firm performance is not fully supported. They imply that although purchasing social responsibility does not affect supplier performance as a whole, but its environmental elements have impact on supplier’s environmental activities and ultimately on its performance.

Managers in buying or supplying companies should be aware that their environmental decisions and activities affect other parties in supply chain. This paper indicates details of the impacts buying company’s environmental requirements and supports may have on supplier’s environmental activities and performance. Hence, buyers should work with suppliers to secure the mutually beneficial results of environmental decisions and activities. This can be viewed as an opportunity for the buying company to further govern and orchestrate the supply chain. In managing environmental activities, suppliers should also take the buyer’s environmental expectations and supports into account. This helps them to enhance their marketing and financial performance. Suppliers can then leverage those achievements in managing environmental activities in the rest of supply chain. Overall, management of environmental activities across the supply chain needs attention to long-term, strategic benefits of all parties. Both buyer and supplier can provide significant advantages to each other, while they improve their own performance.

4-Sustainability level achieved by manufacturing companies and their attitude towards overall business and logistics capability development.

-Moron Danuta Kisperska, University of Economics in Katowice, danuta.kisperska-moron@uekat.pl
-Edyta Klosa, University of Economics in Katowice, edyta.klosa@uekat.pl

Purpose
Because idea of sustainability became very popular in recent years, various supply chain stakeholders are showing an increasing interest in environmental and social issues being crucial areas concept. In manufacturing companies being vital members of supply chains plenty of aspects of environmental and social aspects of sustainability can be explored. On the other hand, competitiveness and competitive advantage is an important issue of company’s and supply chain operations and today companies need to sustain that advantage while remaining sustainable. Among key competitive goals there can be mentioned: cost, quality (conformance to specifications), delivery timeliness, flexibility (e.g., product variety/volume), new product or process design/innovation, environment/safety. It is worth to emphasise that companies can gain and sustain competitive advantage by developing and deploying valuable resources and capabilities, e.g. those related to general business and logistics area. Thus the purpose of this paper is to provide some insight into the relationship between engagement of manufacturing companies in sustainable management and its relations to general competitive goals resulting from adopted strategies, as well as the connection between achieved level of sustainability and overall business and logistics capabilities.

This paper is a work-in-process paper based at this point on limited literature research and extensive quantitative analysis of data. Some significant relationships and group characteristics of examined variables have been identified, however, the paper requires more profound description of obtained results and wider scope of discussion on the ground of existing literature.

TRACK 1.2 | SC Theory
18 May | 17:00 - 18:30 | Room A1

Chair: Prof. Davide Luzzini, MIT - Zaragoza Logistics Center, dluzzini@zlc.edu.es

1-Supply chain theory: a path forwards for researchers.
-Andreas Wieland, Copenhagen Business School, avi.om@cbbs.dk
-Robert Handfield, NC State University, rbhandfi@ncsu.edu

Theory building in SCM research might, at least in part, have failed to catch up with some of the very fast developments currently going on in business reality. The existing set of theories is often focused on outdated business models and phenomena that may be only loosely coupled to the end-to-end supply chain. This opinion piece aims to develop a roadmap of where SCM research must travel for the SCM discipline to continue to evolve, mature and gain prominence. A two-year research endeavor ambitiously sought to derive what leading SCM researchers believe this roadmap will look like, using a two-
part survey of research thought leaders who have published in the most recognized academic journals in the discipline. This opinion piece builds on an analysis and discussion of explorative survey data collected from academics. This research argues that a gap exists in the theoretical landscape of SCM and suggests a series of research strategies that can guide researchers in ascertaining that future theories of SCM are, indeed, able to help explain new phenomena. In suggesting a framework that combines research strategies in a novel way, a research agenda is proposed that leads to more useful supply chain theories.

2-Structural review of theories in healthcare supply chain management.
-Zach Zacharia, Lehigh University, zg208@lehigh.edu
-Melanie Hinterplattner, University of Applied Sciences Upper Austria Melanie.Hinterplattner@fh-steyr.at
-Markus Gerschberger, University of Applied Sciences Upper Austria markus.gerschberger@fh-steyr.at

Healthcare has a profound impact on public welfare and on our quality of life, however long term affordability has been in doubt due to rapidly rising healthcare costs across the world. One alternative to cope with these healthcare challenges is to adapt advancements in supply chain management to healthcare supply chains, leading to improved efficiencies, enhanced customer service, removing barriers and greater harmonization among healthcare players potentially reducing costs while saving lives. Within the emerging research field of healthcare supply chain management (HCSCM) the use of existing theoretical concepts and frameworks to provide explanations and understanding of the phenomena under scrutiny is not yet well understood. The purpose of this paper is to deepen the understanding of HCSCM from a theoretical point of view by identifying and evaluating the use of theories in HCSCM literature. A systematic literature review is conducted in top supply chain management and healthcare journals. This paper provides a structured review of the use of theories in recent literature within the field of HCSCM (divided into theoretical contribution and practical application) and this paper identifies the disciplines from where HCSCM researchers have successfully borrowed theories.

TRACK 2.2 | SC Relationships
18 May | 17:00 - 18:30 | Room A4
Chair: Prof. Elena Revilla, IE Business School, elena.revilla@ie.edu

1-Organizational responses to perceived resource scarcity in buyer-supplier relationships.
-Robert Wiedmer, Arizona State University, Robert.Wiedmer@asu.edu

Managers consider resource scarcity as a major threat to their businesses and see an increasing relevance of scarcity across many industries, especially those related to minerals, water, services, and labor. Firms are continuously challenged by resource-scarcity because over- or under-reacting can be costly. What is more, they consider resource scarcity as an inter-organizational issue as it can affect firms across the supply chain (i.e., downstream and upstream a firm’s supply chain). Despite media discussions on resource scarcity, managers believe there is a lack of awareness of resource scarcity among internal and external stakeholder groups, such as suppliers, customers, and employees. Due to the importance of resource scarcity within and across firms, academic researchers need to investigate more holistically how resource scarcity influences buyer-supplier relationships. This research focuses on perceived resource scarcity that describes an expected, but uncertain, future resource shortage and is, thus, conceptualized as a combination of expected resource shortage and shortage uncertainty. As such, the perceived scarcity of a resource has not yet occurred, but it is anticipated to affect firms in the future. Managers may expect, but do not know when, how long, and to what extent the shortage will occur. Due to the lack of information about the resource scarcity and managers’ finite information processing capacity, managers rely on their perceptions when responding to resource scarcity – and these perceptions are likely to be incomplete. The discrepancy between managerial perceptions and the reality can influence the effectiveness of the selected strategies to mitigate resource scarcity. In this research, I investigate how perceived resource scarcity is managed in the context of buyer-supplier relationships (i.e., on the inter-organizational level).
First, I define perceived resource scarcity and distinguish it from other concepts, such as actual resource scarcity. Furthermore, I conduct a literature review by presenting and discussing research on resource scarcity from relevant scientific fields such as management and economics, and I argue why resource scarcity is a relevant concept in supply chain management research. Based on organizational theories, I also present and discuss firms’ potential responses to perceived resource scarcity and their effects on buyer-supplier relationships. Second, I test the proposed conceptualization of perceived resource scarcity and its relevance in buyer-supplier relationships. In a survey, which combines open-ended and exploratory questions as well as Likert-type scales, with 203 purchasing managers and buyers, I investigate the effects of perceived resource scarcity on organizational responses to mitigate it, and, in turn, on buyer-supplier relationships. Preliminary findings show that the majority of participants have either over- or under-estimated the severity of an expected shortage, which emphasizes the importance of managerial perceptions. Moreover, this research will provide further understanding of the effects of expected resource shortage and shortage uncertainty on the organizational responses to mitigate perceived resource scarcity. Here, I hypothesize that both dimensions, expected resource shortage and shortage uncertainty, have different effects on how firms respond to perceived resource scarcity. Testing these hypotheses will help to understand why firms exhibit preferences for strategies that are oftentimes not effective in mitigating the scarcity threat. In summary, this research is the first study to investigate perceived resource scarcity in supply chain management. The investigation demonstrates that there is inconsistency in terms of what response strategies seem to be more effective in mitigating resource scarcity and what managers actually select when faced with this problem. The findings of this research shed light on managerial and organizational responses in times
of perceived resource scarcity and suggest pathways to derive strategies that are more effective in mitigating scarcity threats in buyer-supplier relationships.

2-The Impact of Salespersons’ Behavioral Constraints on Supplier Integration.

Supplier integration (SI) suggests that functional experts of a buying firm should directly communicate with their counterparts in a supplier firm, bypassing the traditional boundary spanner of the supplier – a salesperson. While such multi-channel relationships facilitate rich inter-organizational interactions, salespeople lose their traditional position as sole gatekeepers within supplying firms. We hypothesize that this change in roles motivates salespeople to behave in ways that constrain SI efforts. Specifically, we draw from social technical systems theory to examine how supplier integration motivates engineers’ and salespersons’ behaviors within supplying firms to negatively affect supplier performance. To facilitate our study, we collect response data from 102 salespeople of direct material suppliers to a leading South Korean consumer electronics manufacturer and matched supplier scorecard data from the focal manufacturer. Our results show that supplier engineers’ involvement in buyers’ NPD motivates their inadvertent benevolence – i.e., supplier engineers’ willingness to accommodate buyers’ requests without fully considering their business performance impact. We find that, in response, supplier salespeople adopt barricading behaviors to block direct communications between buyers and supplier engineers thereby negatively affecting supplier performance. As such, our study demonstrates that benevolence, which is essential for external collaboration, motivates internal behaviors that constrain external collaboration.

2-Open innovation: how manufacturing companies bridge the gap between strategy and reality in supply chain management? The case of Poland.

Barbara Ocicka, Warsaw School of Economics, bocick@sgh.waw.pl

A lot has been written and said about the significance of business processes integration and strategic collaboration in supply chain management as sources of sustainable competitive advantage and long-term value for stakeholders. The paradigm of open innovation has stressed the role of the collaborative innovation process with engagement of different actors within and outside the companies and heightened interest of supply chain managers in its development. Accordingly, in light of the shift from a closed towards an open innovation model, companies have attempted to develop open innovation strategies and stimulate collaborative innovation in supply chain management. The main purpose of this research paper is to present how manufacturing companies bridge the gap between strategy and reality of open innovation development in supply chains. Using survey responses from 202 manufacturing firms located in Poland, the author indicated types of innovation developed in manufacturing companies bridge the gap between strategy and reality of open innovation development in supply chains. The main purpose of this research paper is to present how manufacturing companies bridge the gap between strategy and reality of open innovation development in supply chains. Using survey responses from 202 manufacturing firms located in Poland, the author indicated types of innovation developed in manufacturing companies bridge the gap between strategy and reality of open innovation development in supply chains. Using survey responses from 202 manufacturing firms located in Poland, the author indicated types of innovation developed in manufacturing companies bridge the gap between strategy and reality of open innovation development in supply chains.

1-The impact of fit between supply chain strategies and innovation capabilities on firm performance.

Ricardo Zimmermann, University of Aveiro, ricardoaz@ua.pt
L. M. Domingues Ferreira, University of Coimbra, luis.ferreira@dem.uc.pt
Antonio Camizo Moreira, University of Aveiro, amoreira@ua.pt

Supply chain management and innovation are two important areas within organizations, recognised as possible sources of competitive advantage. Supply chain strategies reflect the nature of the supply chain and should be aligned with the product characteristics, with the adopted competitive strategy and with the environment where the firm competes. Innovation capabilities are the abilities and assets which result in the aptitude to develop and explore new ideas successfully. The main objective of this study is to examine how fit between SC strategies and innovation capability affect firm performance. This study is based around the concept of fit which has gained ground in the literature over the last few years. The analysis is divided in two parts: firstly, the characteristics of SC strategies and innovation capabilities are analysed and discussed to understand the relationship between them; in the second part, two forms of fit are analysed - fit as moderation and fit as mediation. The consequences of the different types of fit are discussed. The propositions put forward in this paper can be used to guide decision making of managers in the areas of innovation and supply chain who are seeking substantive improvement in the overall performance of organisations.

1-The Triple-A supply chain as a source of competitive advantage: scale development and model testing.

-Javad Feizabadi, MIT Global SCALE Network, Malaysia Institute for Supply Chain Innovation, jfeizabadi@mis.iut.edu.my
-David M. Gilgör, Mississippi University, dgilgor@bus.olemiss.edu
-M. Somyayee Albakhshi, University of Malaya, s.albakhshi58@gmail.com

For many companies competition has shifted from inter-firm to inter-supply chain. For these organizations, the challenge lies in creating a sustainable competitive advantage across their
supply chains (SC). Supply chain agility, adaptability and alignment have been proposed by many scholars as distinguishing features of competitive supply chains and have been studied independently in the literature. Supply chains should possess all three characteristics simultaneously to ensure a sustainable competitive advantage (Lee 2004). This study develops a comprehensive measurement scale of triple-A supply chains. The scale is developed and tested using survey responses from 183 international manufacturing firms.

2-The Evolving Role of Coopetition within the Supply Chain.

-Zach Zacharia, Lehigh University, zg208@lehigh.edu
-Usha Mohan, Indian Institute of Technology Madras, ushamohan@iitm.ac.in
-Michael Plasch, University of Applied Sciences Upper Austria Michael. Plasch@fh-steyr.at
-Markus Gerschberger, University of Applied Sciences Upper Austria markus.gerschberger@fh-steyr.at

Firms are increasingly dependent on the knowledge and expertise in external organizations to innovate, problem-solve, and improve supply chain performance. As the risk associated with entering new markets or launching new products and technologies keeps increasing, firms have evolved from collaborating with buyers and suppliers to collaborating with competitors. This new form of collaboration where firms compete in one market and simultaneously cooperate in another is called coopetition. Building from three theoretical foundations, resource based theory, transaction cost theory and game theory we develop a model and associated propositions of the coopetition process. The four antecedents or drivers of coopetition include customer requirements, new products, new markets and new industry standards. The outcome of successful coopetition projects is improvements in firm performance. Using a structured interview process of 33 industry executives in India and Austria we offer empirical support for the model and propositions that can be used to better understand the process of coopetition. We found that top management support and intellectual property protection also plays a role in coopetition. Finally we discuss future research opportunities for academics and offer suggestions for managers to improve the effectiveness and efficiency of their coopetition projects.

2-Systematic Literature Review of the use of Blockchain in Supply Chain.

-J. F. Caizadilla, IE Business School, jcaizadilla@faculty.ie.edu
-Aurelio Villa, Politécnica de Madrid, aurelio.villa@upm.es

In this day there is an emerging interest about the use of Blockchain in Supply Chain, and many big companies are looking into it, but the pace of implementation is still uncertain at such an early stage. However the literature published during 2015-2016 about the topic can be used to research the trend of implementation and cast some light over it. The objective of this study is to research only the literature using the methodology of Systematic Reviews. Blockchain (Pilkington 2015) has been one of the recent technological developments that is introducing radical change in the way we deal with assets interchange in digital economy (Nakamoto 2008). Either it be in the financial industry or more recently in encompassing manufacturing and supply chain (Abeyratne and Monfared 2016). However, all the actual hype about Blockchain technology, the fully operative projects are few, mainly in the financial industry with the Bitcoin flagship, and many more in pilot evaluations, in development or in conceptual consideration. Because of the distributed and cryptographic nature of their operation the implementation is not less free of challenges.

One changing factor to the above is the fact companies like IBM are already introducing a “Blockchain foundational layer” (MENA Report 2016) for the implementation of projects. Besides the large IT groups, specialized companies providing solutions for Blockchain projects deployment (Mougayar 2015; L. Kemp 2017) are emerging out of the earlier implementations of digital currency systems. Being this technology (P. Satyavolu 2016) a data structure supported by a distributed data base where linked transactions are recorded as a chain of blocks not possible to tamper with, making it possible to create, access and share a digital ledger in a secure way without resourcing to a central trust authority. Adoption in the financial industry is now being followed by considering the application of this technology to the supply chain, with references starting in 2015. Where payments, smart
The early adoption phase of implementations, none earlier than 2015, and the growing attention from industry, academia and research, still does not provide a sound foundation on the issues, methods, findings and direction of the Blockchain-Supply Chain solutions.

This poses the need to understand the current state of the implementation and research from the perspective of answering some questions about the early adoption. The questions of interest are related to: the type and volume of publications since 2015, the topics and issues addressed, the industrial sector intended, and the countries involved.

The research method adopted is based on Systematic Reviews (Petticrew and Roberts 2006) which is supported by evaluating and interpreting available relevant literature in relation to a particular topic using categorical analysis. This review can provide convenient summaries on a particular issue and answers to questions characterising the topic of interest (Barnett-Page and Thomas 2009b).

This research approach, normally associated with healthcare analysis and social sciences, is beginning to be used to analyse the Blockchain adoption (Oshodin, Molla, and Ong 2016) in different possible sectors, allowing to research the published results during an observational period systematically.

The research is supported by a special software tool for Systematic Reviews and Meta Analysis. The tool used is EPPI-Review-4 (Thomas and Harden 2006) developed by the Department of Social Science University College London (UCL).

The study in this work requires as a first step to populate a database of relevant literature for the period 2015-2016 from appropriate Publications Data Bases (Dickersin, Scherer, and Lefebvre 1994). The information to be collected includes citation information, publication abstract and full text document in pdf format (when possible). Following the creation of the relevant literature data base, the categorical codes and its hierarchy for the analysis have to be defined.

The next step is the systematic analysis with the help of EPPI. The final result is a categorical multiple classification of the information, allowing frequency analysis, crosstabs analysis and summary reports. The analysis can be extended to cover other research interest, providing information is available in the Data Base (Barnett-Page and Thomas 2009a).

The Systematic Reviews method used allows a stepwise approach for this study. With a preliminary report based on a short and open sourced of references, and a second report with a larger document base, corrected by the findings to increase the quality of the searched results. The current status of the work is in the preliminary report.

### 3-Data Source Taxonomy for Supply Network Structure Visibility

-Johannes Zrenner, Technical University of Dortmund, johannes.zrenner@tu-dortmund.de

The supply network structures of manufacturers are complex and opaque. An increased visibility has positive impacts on the supply chain performance and reduces uncertainty. In order to achieve a higher visibility, the existing lack of supply network structure data has to be closed. Therefore, it is necessary to link different internal as well as external data sources. The availability of various data sources with a high heterogeneity leads to a decision problem. Which data sources have potential to increase the supply network structure visibility? Which of them are suitable for linking processes? Following the design science research process, two artefacts are developed in this paper. A conceptual representation of supply network structure data sources supports the identification process of relevant data sources. The data source taxonomy (i.e. classification scheme) assists a standardized description and comparison of the identified data sources. Both artefacts are demonstrated in two case studies with German automotive Original Equipment Manufacturers.

### TRACK 2.4 | Logistics Cluster

19 May | 11:45 - 13:15 | Room A4

Chair: Prof. Carl Marcus Wallenburg, Otto Beisheim School of Management, Carl.Wallenburg@whu.edu

1-Smart construction logistics - the case of a Dutch inner city hospital and university.

-Bogers Enide, HAN University of Applied Sciences, Enide.Bogers@han.nl
-R. Postulart, Topsector Logistiek / Connekt, rene.postulart@bciglobal.com
-W. Ploos van Amstel, Amsterdam University of Applied Sciences, delaatstemeter@gmail.com
-S.J.C.M. Weijers, HAN University of Applied Sciences, Stef.Weijers@han.nl

The construction Industry appears to be responsible for 25 to 30% of all freight transport. Large scale construction works within a crowded inner city may therefore be a logistics challenge, especially in the case elaborated in this paper, where the involved hospital and university need to remain operational and accessible. HAN University of Applied Sciences was asked to

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provide advice on applying smart construction logistics. First, a review of literature and case studies was carried out and experts (researchers, main contractors and project managers) were interviewed. This led to a long list of potentially effective concepts. Second, the logistics and organizational situation of the hospital / university and their construction project were analysed. Synthesis of the logistics concepts and local situation led to an advice why what concepts were expected to be most beneficial. Due to the crowded inner city location, the need for a continued operation and reliable access, and positive prior results obtained elsewhere by using a construction consolidation centre (CCC), it was advised to use a CCC, added with other smart concepts like pre assembling, a ticketing system, a shuttle service for workers and integral planning. In this paper the proposal is argued step by step.

2-Assessing logistical service offerings of online retailers in Europe and the USA.

In this paper we assess and compare logistics service offerings of online retailers in leading e-commerce countries. We focused at European countries (UK, France, Germany, the Netherlands) and the USA. We investigated logistics information provided on the websites of the 100 largest webshops in each of these five countries using aspects that affect consumer behavior in online retail. We find that best practices in logistics service offerings do not necessarily follow maturity in e-commerce. Across the countries analyzed UK and Dutch webshops offer the shortest delivery times and the latest cut-off times for next day delivery. On the other hand German and French webshops more often provide information on stock levels. Multi-channel delivery options are more established in the European market compared to the USA, with France being the leader. Related to returns, USA webshops outperform with respect to the length of the return period allowed while UK webshops offer a wider range of return options. We find that online retailers offering multiple delivery options, across countries, offer on average shorter delivery times and more return options than those only offering a single delivery option. The paper highlights the importance of integrated online and offline operations.

3-Logistics clusters development: An environmental impact perspective.

-Meshal Almofadhi, Aston Logistics & Systems Institute, almofadm@aston.ac.uk
-Aristides Matopoulos, Aston Logistics & Systems Institute, a.matopoulos@aston.ac.uk
-Edward Sweeney, Aston University, e.sweeney@aston.ac.uk

The development of logistics clusters (LC) has been widely recognised as a great contributor towards economic growth. LC facilitate the whole supply chain providing access to a well-established physical infrastructure whilst enhancing the availability of logistics-related facilities coupled with value-added services. Existing research on LC has been confined primarily to their development and impact on economic growth, with little attention being paid to their social and environmental impact. In other words, we do not seem to have sufficient understanding on whether or not the development of LC is associated also with environmental benefits. Drawing on Relational View (RV) theory, this research explores whether and how the LC firms can impact the environment. A conceptual model was developed and examined using multiple case studies. Interviews with managers from twenty-four companies, eight clusters and from three countries (UK, Saudi Arabia and Dubai) were conducted within LC based companies. In addition, the interviews also included non-cluster based companies to reveal the differences. Findings show that companies gain distinct physical characteristics and operational features (e.g. access to multimodal and tangible assets) along with several benefits to reduce the environmental impact. Those benefits, however, derive mainly from companies’ investment in such collaborative relationships and capabilities, for example, better-skilled labour coupled with improved assets and environmental sustainability knowledge sharing. The majority of respondents acknowledged the positive effects of environmental sustainability advantages which can be particularly useful for the weaker members of the cluster by encouraging them to adopt sustainability practices into their operations.
Organizing committee

The Council of Supply Chain Management Professionals (CSCMP) is the leading worldwide association of professionals in supply chain management. The CSCMP is a non-profit association that provides leadership in the development, design and improvement in occupations that deal with logistics and management of supply chains. Its main objective is “To lead the evolving supply chain management profession by developing, advancing, and disseminating supply chain knowledge and research.”

IE Business School is a graduate school located in Madrid, Spain. It was founded in 1973 under the name Instituto de Empresa and since 2009 is part of IE University. IE Business School runs MBA, Executive MBA, master’s degree programs in finance and management, executive education programs, PhD and DBA programs. Approximately 1,900 students from 90 countries undertake degree programs at IE each year. There are approximately 5,600 annual participants in the school’s executive education programs. The school has offices in 28 countries and approximately 40,000 alumni residing in 102 countries.

Affiliated to the Massachusetts Institute of Technology (MIT) and the University of Zaragoza, Zaragoza Logistics Center (ZLC) is a research and educational center in logistics and supply chain management, located in Spain. The University has been recently ranked as one of the Top Supply Chain Universities worldwide by SCM World and the MIT International Masters programs are ranked #1 worldwide by Eduniversal.