

**I-e SCM Lab's 2015 Spring Meeting  
Supply Chain Management at the Internet Edge:  
Trends, Challenges, and Opportunities  
April 16, 2015**

Welcome to the Internet-Edge Supply Chain Management Lab's (**I-e SCM Lab**) 2015 Spring Meeting. The **I-e SCM Lab** was created to address the need to better understand the evolution of the Supply Chain brought about by opportunities created by the advent of the Internet. In particular, the Lab's mission is to create industry-inspired research that advances understanding of innovations, challenges, and new possibilities involving Supply Chain Management at the boundary shared by the Internet and the physical world.

It is at this boundary where consumers can interact directly with retailers to send and receive data through the Internet as part of everyday purchases and other transactions in *e-Commerce*. The implications for supply chain management strategies brought about by these forms of transactions are significant. Through the Internet, consumers can substantially expand their access to greater product variety and quality. Moreover, consumers can more easily search and find better pricing. Consumers have also greater power to specify where and when products and services need to be available.

Retailers have found themselves facing significant challenges as to how they can best use their assets such as stores and inventories. A few retailers have chosen to lower their costs by reducing the number of stores and their inventory to focus on fulfilling Internet-based demand through direct deliveries from distribution centers to consumers. Other retailers have redoubled their reliance on their stores and the inventory in those stores. They have chosen to leverage these assets to fulfill Internet sales faster and more conveniently. This strategy has also enabled some to be more responsive to consumers who decide to return products ordered online. Finally, a third group of retailers have aimed to optimally combine these supply chain strategies to develop a backbone for omnichannel retailing. Ultimately, the retailers' goal is to maintain high customer service levels while improving supply chain efficiencies as part of the delivery of customer orders and the reverse fulfillment of product returns.

Logistics service providers have had to reevaluate their last mile delivery and reverse fulfillment strategies and consider the use of point-to-point networks alongside hub-and-spoke networks downstream in the supply chain. The extent to which the combined use of these strategies will be effective for retailers will depend on the products involved, the type of facilities where retailers hold their inventories, as well as the value that consumers place on fast order deliveries and convenient, expedited reverse fulfillment.

At the boundary with the physical realm, the Internet has contributed to making significant improvements in how supply and demand can be matched down through the supply chain. Supply may involve not only products in inventory, but also other assets throughout the supply chain such as distribution centers, containers, trailers, and motor vehicles. Because the demand for these assets is a function of continuously varying quantities needed at exact physical locations, the Internet – with its inter-operational standards and easy access through mobile platforms – has proven to be very effective facilitating search and helping locate the assets that match the specifics of these demand attributes. Start-ups, such as Uber, Cargomatic, and Flexe, have developed entirely new business models around Internet capabilities to offer matchmaking services involving assets such as motor vehicles, containers, and distribution centers. These firms are built on business models rooted in what experts

have termed the “*Sharing Economy*.” Rather than selling the ownership of these assets, these organizations have focused exclusively on renting fragments (rides, space, etc.) of the assets for brief periods of time, when assets are being underutilized by their owners.

Finally, it is at the boundary shared by the Internet and the physical world where the growth of *Internet of Things (IoT)* technology has opened the way for the integration of not only consumers but also objects as key participants in the flow of information throughout the supply chain. Objects in the *IoT* include consumer products, firms’ assets (e.g., inventory, distribution centers, and transportation equipment), and public infrastructure resources (e.g., ports, roads, public transit). The integration of these objects through the *IoT* will allow them to be not only be located and monitored, but also provide detailed information about their current and likely future conditions. Moreover, it will enable them to communicate rich and timely information about their operations and usage with other smart objects. Creating a vast network of interconnected objects has the potential to profoundly impact the efficiency and sustainability of operations throughout the supply chain. These smart networks can extend the Internet to obtain information from objects residing remotely and in highly mobile physical layers.

As we will discuss during the meeting, the **I-e SCM Lab** seeks to advance collaborative programs between companies, faculty, and students to research these and other supply chain management challenges of relevance to industry and academia. We also aim to disseminate the insights we derive through a variety of means, including research workshops, sponsor conferences, lunch seminars, site visits, white papers, and journal publications.

A first objective of this meeting is to have the opportunity to discuss with our industry partners the specifics of the different knowledge areas that will form the cornerstones of the **I-e SCM Lab**. These cornerstones will span knowledge areas such as:

- (1) *Internet Commerce*, including last mile delivery and omnichannel retailing strategies,
- (2) *The Mobile Internet and the Sharing Economy*, and
- (3) *Internet of Things Technology*.

A second objective is to develop and formalize, in collaboration with our industry partners, actionable research deliverables that will address pressing challenges and opportunities for supply chain management across these cornerstone areas.

We would like to thank you for your participation. We have included the agenda, speaker bios, and the list of attendees below. Please let us know if there is anything we can do to assist you during the event.

Sincerely,



Elliot Rabinovich  
John G. and Barbara A. Bebling Professor  
Supply Chain Management Department  
W. P. Carey School of Business  
Arizona State University  
[Elliot.Rabinovich@asu.edu](mailto:Elliot.Rabinovich@asu.edu)



Dale S. Rogers  
Professor  
Supply Chain Management Department  
W. P. Carey School of Business  
Arizona State University  
[Dale.Rogers@asu.edu](mailto:Dale.Rogers@asu.edu)

## Agenda

7:00 AM to 8:00 AM	Breakfast (McCord Hall, Room 456)
8:00 AM to 8:30 AM	Introductions (McCord Hall, Room 456)
8:30 AM to 9:00 AM	An Overview of the Internet Edge SCM Lab (McCord Hall, Room 456) Elliot Rabinovich and Dale Rogers, Arizona State University
9:00 AM to 9:30 AM	Break
9:30 AM to 10:00 AM	The Power of Networks in Logistics Services: Future Challenges and Opportunities (McCord Hall, Room 456) Karl Siebrecht, Flexe
10:00 AM to 10:30 AM	Break
10:30 AM to 11:00 AM	What is the Internet of Things and How Will It Impact Supply Chain Management? (McCord Hall, Room 456) George Moakley, Intel
11:00 AM to 11:30 AM	Break
11:30 AM to 12:00 PM	Last Mile Delivery: A Perspective of the Past, Present, and Future (McCord Hall, Room 456) Timothy Laseter, University of Virginia, Relay Foods, and Strategy&
12:00 PM to 1:00 PM	Lunch (McCord Hall, Room 456)
1:00 PM to 2:30 PM	Roundtable Discussion: How Will Internet Edge Supply Chain Management Evolve in the Next Five Years? What Will Be the Challenges and the Opportunities? (McCord Hall, Room 456)
2:30 PM to 3:00 PM	Break
3:00 PM to 4:30 PM	Breakout Sessions: Developing Actionable Deliverables to Address Pressing Challenges and Opportunities (McCord Hall, Rooms 456, 416, and 418)
4:30 PM to 5:00 PM	Closing Remarks (McCord Hall, Room 456)
6:00 PM to 8:00 PM	Dinner in Downtown Tempe

## Speakers' Bios

### **Elliot Rabinovich, Arizona State University**

Elliot Rabinovich is a Professor of Supply Chain Management and holds the John G. and Barbara A. Bebbling Professorship in Business Administration at the W. P. Carey School of Business, Arizona State University. His research focuses on the role of Internet technology in the definition of strategies and performance in supply chain and operations management and on the implementation of decisions involving information systems and inventory management.

He is a globally recognized expert in the field, with business school appointments at Catholic University of Portugal and Korea University. For his accomplishments, the University of Maryland awarded Professor Rabinovich the Allan N. Nash Outstanding Doctoral Alumni Award in 2014. During his career, Elliot has received fellowships from the Institute of Supply Management (ISM) and funding from the National Science Foundation (NSF). He has published over 30 articles in *Decision Sciences*, the *Journal of Business Logistics*, the *Journal of Operations Management*, *Production and Operations Management*, and other journals. His research has been recognized by the Council of Supply Chain Management Professionals (CSCMP) and the Decision Sciences Institute (DSI).

A key aspect of Elliot's research has been its practical applicability. He has worked with companies such as Cartbound, Cooking.com, Dollar Tree, eBags.com, iControl, PetSmart, and Relay Foods. In 2011, he co-wrote a book that presents managerial insights from his research (*Internet Retail Operations: Integrating Theory and Practice for Managers*, Taylor & Francis). He has also published articles at renowned industry publications, such as MIT Sloan Management Review and UC Berkley's California Management Review, and written case studies published by the Darden School of Business (University of Virginia).

### **Dale S. Rogers, Arizona State University**

Dale Rogers is a Professor of Logistics and Supply Chain Management at Arizona State University. Dr. Rogers is the Leader in Supply Chain Finance, Sustainability, and Reverse Logistics Practices for ILOS - Instituto de Logística e Supply Chain in Rio de Janeiro, Brazil. In 2012 he became the first academic to receive the International Warehouse and Logistics Association Distinguished Service Award in its 120-year history. He is a Board Advisor to Flexe and serves on the Board of the Reverse Logistics and Sustainability Council.

Dale is a leading researcher in the fields of reverse logistics, sustainable supply chain management, supply chain finance and secondary markets, has published in the leading journals of the supply chain and logistics fields. He has been principal investigator on research grants from numerous organizations. He is a senior editor at *Decision Sciences Journal* and associate editor of the *Journal of Business Logistics* and the *Journal of Supply Chain Management*. He has made more than 300 presentations to professional organizations and has been a faculty member in numerous executive education programs at universities in the United States, China, Europe and South America as well as at major corporations and professional organizations.

## **Karl Siebrecht, Flexe**

Karl Siebrecht is the co-founder and CEO of FLEXE, and has technology leadership experience in both early-stage startups and large corporations. Prior to FLEXE, Karl co-founded EnergySavvy where he is currently its Chairman, and was CEO of AdReady, a Seattle-based advertising technology company. Previously, Karl was President of the Atlas division of publicly traded aQuantive, before its \$6B acquisition by Microsoft, and earlier in his career he was a Manager at Bain & Company and a Diving Officer in the US Navy.

## **George Moakley, Intel**

George Moakley is Lead Solution Architect for Intel's Connected Transportation and Logistics business, responsible for overall solution architecture (edge instrumentation, gateways, IoT infrastructure, and cloud and enterprise integration) for Intel's transportation and logistics segments (Fleet, Asset, and Infrastructure). He is responsible for working with Intel's customers to help them understand how IoT can transform their business operations. He also works with Intel's engineering and R&D organizations, guiding technology and product development to meet current and future customer needs.

George has more than 30 years of industry experience, including 25 years with Intel, plus experience in precious metals exploration, retail industries, and aerospace engineering. At Intel, George has been an Enterprise Architect and Strategic Planner for manufacturing systems and Intel IT, founded and managed an Intel Labs program developing and prototyping Internet of Things solutions and infrastructure, and managed product development for Intel's professional services group.

George pursued an MS degree in Zoology at Arizona State University and has a BS degree in Biology from City College of New York. He holds patents and filings in distributed systems et al. and has been responsible for numerous published articles and industry presentations.

## **Timothy M. Laseter, University of Virginia, Relay Foods, and Strategy&**

Timothy M. Laseter is a Professor of Practice at the Darden School of Business, University of Virginia. Tim has also been an advisor to the founder of online grocer Relay Foods since the original idea stage prior to launch in 2008 and now serves on the Board of Directors. He also works as a Senior Executive Advisor to Strategy& (formerly Booz & Company) a unit of PwC where he focuses on omnichannel retailing.

Prior to joining the Darden faculty in 2002, Tim was a partner in what is now Strategy&, with concentrations on operations strategy, supply chain management and sourcing for a wide variety of global businesses. Before joining Booz Allen, Tim worked in manufacturing operations at a joint venture between Siemens and Corning. Tim is the author or co-author of four books including *Balanced Sourcing*, *Strategic Product Creation*, *The Portable MBA* and *Internet Retail Operations*. He is also a contributing editor for *strategy+business*. His academic research, published in a variety of leading journals including *Journal of Operations Management*, *Decision Sciences*, and *California Management Review* and *Sloan Management Review*, generally focuses on Internet-based operational issues. Tim earned a BS in Industrial Management with High Honors from the Georgia Institute of Technology in 1980. The Darden School granted him an MBA in 1984 where he was awarded a Faculty Award for Academic Excellence. He earned a Ph.D. in Operations Management from the Darden School in 2003.

## List of Attendees

<b>Mark Riedel</b>	<b>Director, Global Logistics Services</b>	<b>Arrow Electronics</b>
<b>Lou Rapa</b>	<b>Director, Global Business Process and Program Management</b>	<b>Arrow Electronics</b>
<b>David Lyons</b>	<b>Director of Finance-Global Reverse Logistics</b>	<b>Arrow Electronics</b>
<b>Steinar Aune</b>	<b>Chief Logistics Operations Officer, Reverse Logistics</b>	<b>Arrow Electronics</b>
<b>Karl Siebrecht</b>	<b>Chief Executive Officer</b>	<b>Flexe</b>
<b>Curt Bimschleger</b>	<b>Senior Vice President, Retail Logistics</b>	<b>GENCO, Fed Ex</b>
<b>Alexis Stewart</b>	<b>Senior Manager of RLC Facilities/ Operations</b>	<b>Home Depot</b>
<b>George Moakley</b>	<b>Lead Solution Architect for Connected Transportation and Logistics Business</b>	<b>Intel</b>
<b>Radha Krishna</b>	<b>Strategic Program Manager- Global Supply Management</b>	<b>Intel</b>
<b>Todd Johnson</b>	<b>Global Vice President, 3PL Global Industries and Solutions</b>	<b>JDA Software</b>
<b>Srini Muthusrinivasan</b>	<b>Industry Principal-Americas Global Industries and Solutions</b>	<b>JDA Software</b>
<b>Tad Kelly</b>	<b>Manager, Client Solutions Strategy</b>	<b>Legacy SCS</b>
<b>Kunal Thakkar</b>	<b>Senior Vice President of Operations</b>	<b>Newegg</b>
<b>Laura Peterson</b>	<b>Vice President of Marketing and Public Relations</b>	<b>OnTrac</b>
<b>Elijah Ray</b>	<b>Executive Vice President, Customer Solutions</b>	<b>Sunland Logistics Solutions</b>
<b>Tim Vaio</b>	<b>Vice President, GapTech</b>	<b>The Gap</b>
<b>Ryan Panos</b>	<b>Engineer</b>	<b>Wal-Mart Labs</b>
<b>Annibal Sodero</b>	<b>Assistant Professor, Sam M. Walton College of Business</b>	<b>University of Arkansas</b>
<b>Cesar Lavalle</b>	<b>International Relations</b>	<b>ILOS Institute</b>

## List of Attendees

<b>Tim Laseter</b>	<b>Member Board of Directors Senior Executive Advisor Professor of Practice, Darden School of Business</b>	<b>Relay Foods Strategy &amp; University of Virginia</b>
<b>Elliot Rabinovich</b>	<b>John G. and Barbara A. Bebling Professor, W. P. Carey School of Business</b>	<b>Arizona State University</b>
<b>Dale Rogers</b>	<b>Professor, W. P. Carey School of Business</b>	<b>Arizona State University</b>
<b>John Fowler</b>	<b>Supply Chain Management Department Chair and Motorola Professor, W. P. Carey School of Business</b>	<b>Arizona State University</b>
<b>Tim Richards</b>	<b>Marvin and June Morrison Chair of Agribusiness and Resource Management, W. P. Carey School of Business</b>	<b>Arizona State University</b>
<b>Bin Gu</b>	<b>Associate Professor, W. P. Carey School of Business</b>	<b>Arizona State University</b>
<b>Kevin Dooley</b>	<b>Chief Research Officer, The Sustainability Consortium, Julie Ann Wrigley Global Institute of Sustainability Distinguished University Professor, W.P. Carey School of Business</b>	<b>Arizona State University</b>
<b>Jim Kellso</b>	<b>Professor of Practice, W.P. Carey School of Business</b>	<b>Arizona State University</b>
<b>Craig Carter</b>	<b>Professor, W. P. Carey School of Business</b>	<b>Arizona State University</b>
<b>Zac Rogers</b>	<b>Doctoral Candidate, W.P. Carey School of Business</b>	<b>Arizona State University</b>
<b>Min Choi</b>	<b>Doctoral Candidate, W. P. Carey School of Business</b>	<b>Arizona State University</b>