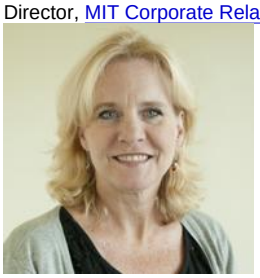
MIT Industrial Liaison Program Faculty Knowledgebase Report

Building a Resilient Supply Chain

April 13, 2023 10:00 am - 12:00 pm

11:00 AM

Welcome & Introduction
Sheri Brodeur
Director, MIT Corporate Relations



Sheri Brodeur
Director
MIT Corporate Relations

Sheri Brodeur is a Director of Corporate Relations at MIT. Prior to this, she spent 22 years at Hewlett-Packard Company in several roles. Her most recent position was in the HP Labs Strategy and Innovation Office. The role of this organization is to set HP Labs' research strategy and extend HP's internal research capacity by partnering with universities, governments, and other companies on a global scale to rapidly advance the positive impact of technology on the world.

Sheri spent 15 years with HP Labs, HP's corporate researcher center, managing major university alliances and programs, including a $25M program with MIT. She has been responsible for managing global higher education technology programs in the areas of Security, Digital Libraries (DSpace), Information Management, and Sustainability.

Prior to this role she spent the previous eight years at Hewlett-Packard in the sales organization moving from the position of Field Sales Engineer to Global Account Manager. In this role she was responsible for selling, supporting and delivering high end test and measurement solutions for the communications industry.

Brodeur has a BS in Ceramic Engineering from Alfred University and an MS in Solid State Science from the Materials Research Laboratory at Penn State University.

11:05 AM

Strategic Supply Chain Evolution – Synchronizing Global Trends With Local Development to Shape the Future of Communities

Chris Mejía-Argueta
Director, MIT SCALE Network - Latin America
Director, MIT Graduate Certificate in Logistics and SCM (GCLOG)
Founder & Director, MIT Food and Retail Operations Lab
Research Scientist, MIT Center for Transportation and Logistics

Chris Mejía-Argueta
Director, MIT SCALE Network - Latin America
Director, MIT Graduate Certificate in Logistics and SCM (GCLOG)
Founder & Director, MIT Food and Retail Operations Lab
Research Scientist
MIT Center for Transportation and Logistics

Christopher Mejía Argueta is a Research Scientist at the MIT Center for Transportation and Logistics. He develops applied research on retailing operations and food supply chains for multiple stakeholders including consumer packaged goods manufacturers, carriers and retailers in the Food and Retail Operations Lab (FaROL). His research focuses on improving the efficiency, flexibility of operations in multiple stakeholders, designing route-to-market and logistics strategies to address changing purchasing patterns, coupling these dynamic consumer profiles with the retail landscape, and reducing undesired socioeconomic and health problems related to income disparity, social backwardness, food malnutrition, food waste by proposing sustainable policies, business models to help vulnerable population segments.

Dr. Chris Mejía is also the Director of the MIT Supply Chain and Global Logistics Excellence (SCALE) Network for Latin America. This initiative, conducted by the MIT Center for Transportation & Logistics in the region, aims to lead impactful research and education projects for all companies, public sector and society together with Latin American top universities and the support of the Center for Latin-American Logistics Innovation (CLI). In addition, Dr. Chris Mejía serves as the Director of the MIT Graduate Certificate in Logistics & Supply Chain Management (GCLOG), an elite program from the MIT SCALE Network, geared towards outstanding graduate students from Latin America.

He holds a M.Sc. in Industrial Engineering with focus on supply chain management and multicriteria optimization, and a PhD in Industrial Engineering with focus on Humanitarian Operations. Dr. Mejía got both degrees with *summa cum laude* honors (best grade, top 1% students) in both classes at Monterrey Tech, Mexico. In 2013, Dr. Mejía was the academic leader at CLI, where he developed dozens of projects with industry and other academic partners related to disaster response, green logistics, packaging and last-mile distribution in emerging markets. Prior to joining MIT CTL, Dr. Mejía Argueta was a Postdoctoral Fellow at Eindhoven University of Technology (TUe), the Netherlands, where he investigated retailing operations for emerging markets and formulated estimation models to analyze the prevalence of nanostores in emerging markets. He is author and editor of the books: 1) Reaching 50 Million Nanostores: Retail Distribution in Emerging Megacities, 2) Supply Chain Management and Logistics in Latin America: A multi-country perspective and 3) Supply Chain Management and Logistics in Emerging Markets.

He has over 12 years of experience and his work in over 10 countries in three different continents has been focused on improving the efficiency of operations across the supply chains. He is co-editor of a variety of special issues in recognized journals, author of scientific papers published in top journals. He has developed dozens of industry projects focus on the reality of emerging markets regarding transportation, logistics, retailing and supply chain management.

Supply chains constantly face new problems that go way beyond the traditional issues of supply and demand uncertainty, mainly due to the impact of worldwide disruptive events. Following criteria established by a systematic approach, we build a framework to address major disruptions that challenge logistics and SCM operations. We consider features from individual organizations, supply chain characteristics, performance metrics (economic, social and environmental) for long-term sustainability, and attributes from external disruptions. I will discuss a few strategies to solve or reduce undesired impacts, focusing on food and retail supply chains and future challenges for the industries.

11:35 AM

Managers Sourcing Decision Amid Heightened Global Uncertainty: Do they Re-shore or Diversify--Video starts at time stamp: 35.31

Jafar Namdar
Postdoctoral Associate, MIT Center for Transportation and Logistics

Jafar Namdar
Postdoctoral Associate
MIT Center for Transportation and Logistics

Jafar is a Postdoctoral Associate at the MIT Digital Supply Chain Transformation Lab. His research focuses on applying business analytics techniques such as econometrics, machine learning, and optimization to solve real-world and data-driven problems in supply chains. For this purpose, he utilizes data science tools like web scraping and text analytics to leverage unstructured and distributed data sources, including web and social media.

The current study examines whether and how firms adjust their sourcing decisions following variations in policy uncertainty and whether such adjustments have any significant performance implications. Specifically, we assess the focal firm's decisions to re-structure its supply chain along two dimensions, (a) onshoring/offshoring and (b) geopolitical diversification/concentration. The empirical evidence suggests that focal firms do not adjust the structure of their supply base in response to domestic policy uncertainty even though one standard deviation increase in domestic policy uncertainty is approximately associated with a 200 million U.S. dollars reduction in annual sales. However, managers decrease the ratio of onshore suppliers and diversify their supply base geopolitically in response to heightened upstream uncertainties affecting the suppliers. To provide actionable advice for mitigating the adverse effect of policy uncertainty, we also conduct a post-hoc analysis linking supply chain structure to focal firms' performance. Our results indicate that consistent with Transaction Cost Economics (TCE), firms with more suppliers onshore and a geopolitically concentrated supply base have superior performance when their suppliers are exposed to heightened policy uncertainty. As such, our investigation reveals that the managerial response of increasing offshoring and diversifying supply bases may be counterproductive.

12:05 PM

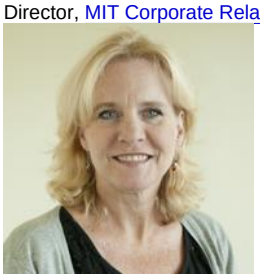
Supply Chain Visibility--Video starts at time stamp: 1:04:02

Leonardo Bonanni
Co-Founder and CEO
SourceMap

The disruptions caused by Covid-19 ushered in a new age of supply chain transparency. Today the Inflation Reduction Act, the CHIPs Act, the White House Executive Order on Resilient Supply Chains, and a slew of due diligence laws across Europe and the US all require companies to map their end-to-end supply chains for better operations, less risk and to comply with social and environmental standards. At the same there has been a revolution in supply chain mapping technology that makes it possible for any company to map and trace products upstream as far back as raw materials, and ensure standards are met every step of the way. Dr. Bonanni will present real-world examples of pharmaceutical, automotive, apparel and luxury companies mapping their global supply chains at scale to meet regulatory, resilience and sustainability targets. Implementing supply chain transparency eminently doable with the right business processes, cross-functional collaboration and enabling technology.

12:35 PM

Closing Remarks
Sheri Brodeur
Director, MIT Corporate Relations



Sheri Brodeur
Director
MIT Corporate Relations

Sheri Brodeur is a Director of Corporate Relations at MIT. Prior to this, she spent 22 years at Hewlett-Packard Company in several roles. Her most recent position was in the HP Labs Strategy and Innovation Office. The role of this organization is to set HP Labs' research strategy and extend HP's internal research capacity by partnering with universities, governments, and other companies on a global scale to rapidly advance the positive impact of technology on the world.

Sheri spent 15 years with HP Labs, HP's corporate researcher center, managing major university alliances and programs, including a $25M program with MIT. She has been responsible for managing global higher education technology programs in the areas of Security, Digital Libraries (DSpace), Information Management, and Sustainability.

Prior to this role she spent the previous eight years at Hewlett-Packard in the sales organization moving from the position of Field Sales Engineer to Global Account Manager. In this role she was responsible for selling, supporting and delivering high end test and measurement solutions for the communications industry.

Brodeur has a BS in Ceramic Engineering from Alfred University and an MS in Solid State Science from the Materials Research Laboratory at Penn State University.