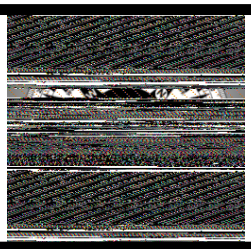
UNIVERSITY OF WASHINGTON



GTTL

A Quarterly Newsletter for Global Trade, Transportation, and Logistics Studies

UNIVERSITY OF WASHINGTON Summer 2008

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GTTL 14th Annual Conference

Professionals from around the Puget Sound joined UW faculty and graduate students earlier this summer at GTTL's 14th Annual Conference: **"Resiliency: Anticipating and Mitigating Uncertain Events in Today's World."** Mike Bevers (Darigold), Sue McLain (Puget Sound Energy), Gael Tarleton (Port of Seattle, and UW PARVAC), and Alan Van Boven (AVB and Associates, previously with Infor) presented keynote discussions on organizational resiliency to approximately 80 attendees at the UW's Walker Ames Room on June 6th. In addition to keynote presentations, audience members had the opportunity to hear GTTL graduate students present their final spring seminar research projects and attend a reception and poster session.

The conference kicked-off with a welcome from **Dr. Matthew O'Donnell,** Dean of the UW College of Engineering, and followed with an introduction by GTTL's Executive Director **Tom Schmitt**. Tom explained that in the context of this conference "resiliency" refers to an organization's management of uncertain disruptive events--such as natural disasters, man-made accidents, and intentional destructive acts. He referenced a recent *Accenture* study (Beverly & Rodysill, 2007) that found 73% of 151 supply chain executives polled said their firms had experienced major disruptions in the past five years. Of those, it took 36% more than one month to recover; and another 32% between a week and a month to recover. Earlier in the 2007-2008 academic year, GTTL's Advisory Board met to recommend that the program's spring GTTL 502 seminar course and annual conference focus on the issue of organizational responses to the possibility and incidence of uncertain events.

Alan Van Boven, Vice President of Transportation Management Solutions for Infor, began the keynote presentations with a discussion on climate change. He emphasized the need for everyone to address climate change both on a personal level and in the way our businesses run their supply chains. Specifically, he highlighted steps that could be taken to minimize carbon emissions in an organization's supply chain and demonstrated use of modeling software that could be used as a tool to forecast costs and carbon emissions in transporting goods. He observed that the high cost of fuel has encouraged more organizations to use these types of tools to cut costs on fuel and plan alternate modes of transport in the event of disruptions. Van Boven cited several examples of alternate shipping routes through Europe and Asia that might be considered by companies looking to cut fuel costs. In regard to carbon emissions, he noted that modeling software is reasonably reliable if you gather and input accurate data; but atpresent it is difficult to get good reference data for the carbon emissions of various activities. He concluded his discussion by expressing

optimism that new technologies would be developed to help companies and individuals lower their carbon emissions in the future and respond to the impending climate change crisis in time.

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Sue McLain, Senior Vice President of Operations for Puget Sound Energy, gave attendees a behind-the-scenes look at how PSE manages vulnerability. Issues concerning the company's ability to deliver to Puget Sound customers include an aging infrastructure (in some cases is up to 90 years old), weather conditions and local vegetation. She noted that trees, in particular, pose a challenge for PSE because many native varieties of pine have a shallow root base and grow against the wind. Hence, when the wind blows from a different direction it often brings the trees and nearby overhead power lines down. With more than half of PSE's nearly 20,000 miles of electric distribution lines above ground, this poses a continuing challenge for the company. To detect problems once they occur, the company has a large power grid detection network which consists of pole-top units that read each customer meter. If for some reason a unit is not reading, PSE can immediately detect and investigate the problem. On the morning after the 12/15/2006 windstorm, PSE could see that more of these pole-top units were down than working and the company responded immediately with extra repair crews.

McLain reported that when a problem of this magnitude occurs, PSE first has assessment crews look at the situation to see where the damage is and what is needed to repair it. Those crews then become coordination teams that work together with outside repair teams to get repairs made. According to McLain, the industry has mutual assistance agreements between neighboring utility areas, thus PSE sends its work crews out to help other utility companies, and those companies in turn send their crews to help PSE. In the case of the 12/15/06 storm, PSE's assessment and coordination teams, along with outside repair teams, first began repairs on transmission systems and substations and then worked their way through the energy delivery system to individual customers. In summary, she reported that the 12/15/2006 windstorm was the largest the company had experienced in terms of damage, customers without electricity, and the number of crews needed to repair the damage. In response, PSE now conducts disruption drills to help the company plan creatively and review strategy. PSE also collaborates with other organizations when planning and practicing the drills and a wider variety of disruptions are considered.

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Mike Bevers, Director of Logistics for Darigold, also focused his presentation on repercussions from the 12/15/2006 windstorm. Darigold is the 4th largest cooperative of dairy farmers in the U.S., and the company has a fleet of trucks that pick-up and ship products around the world every day. Bevers noted that, like many companies, prior to this event, Darigold primarily focused on their day-to-day business operations and tended not to plan for unexpected disruptions. He also pointed out that cows do not stop producing because of a storm, so if the company's plant, pick-up or delivery systems are down, the result is wasted milk.

According to Bevers, Darigold Seattle is the largest fluid milk plant in the Western U.S., but City Light had the facility on a low priority line so it took approximately 6 days for power to be restored. Additionally many of Darigold's employees could not get to work because of storm damage and the company's order center was down. Hence, even after the plant was back online, Darigold was still behind in processing orders and meeting customer demand. In all, it took until December 26th for the company's operations to normalize.

As a result of the 12/15/2006 storm, Bevers reported that Darigold made several changes. First, they instituted a color alert system based on "down time," and had each functional area develop a team to address their area's specific issues. The company also streamlined most of their processes, for example, sales updated their customer emergency contact information and created automatic order and substitute order agreements for their customers. In addition, a command center was establishedand staffed with a cross-functional team to improve emergency communication throughout the com-

pany. Darigold learned that e-mail and voice mail could be better utilized for emergency communication and that IT support and resources should be pulled from multiple departments in the event of an emergency. They also determined that back-up power for all systems was necessary, and back-up packaging supplies for key items should be maintained at alternative supply plants. According to Bevers, Darigold is in much better shape today than before the storm, but it was a tough learning experience. The company has faced two unexpected incidents since December 2006, last year their Chehalis plant flooded and snow closures in the Snoqualmie pass prevented shipping, but Darigold was able to bounce back from those disruptions relatively quickly.

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Gail Tarleton, Commissioner, Port of Seattle, and Manager, PARVAC Partnerships and New Initiatives, UW Technical Communications, discussed the importance of planning ahead for uncertain events. She stressed that there is no uncertainty about catastrophes; they have happened, are happening, and will happen in the future, the only control we have is how we prepare for them. Tarleton noted that because of her work with the Port of Seattle and the UW, she hears the word "resiliency" used in a lot of different ways, but after seeing Hurricane Katrina hit New Orleans in 2005, she feels everyone should now know what resiliency does not look like. She reported that, as an elected official, PARVAC manager, and Senior Advisor at the UW's Institute on National Security Education and Research, she thinks of "resiliency" as keeping our ports open and our people safe. She emphasized that each role she performs represents a community that she depends on and that depends on her, and she views her role as one of helping people understand risks and threats by sharing information and encouraging people to, in turn, share that information within their own groups and other communities. Her goal is to get insights and analysis into the hands of people so they can make good decisions, and she emphasized that we all need to help our decision makers understand the consequences of their actions ahead of time. By working to connect groups of people across communities, regions, jurisdictions, and areas of responsibility before events take place she hopes they will have time to plan how they will work together.

Tarleton reflected that 28 years of experience in the field has taught her it is impossible to control how individuals and groups will actually behave and react in the event of a crisis. She reported that often people become overwhelmed and are unable to reach consensus and make decisions during a crisis; consequently our focus should be on what we can control. As an example Tarleton referred to the crisis on board Apollo 13 resulting from an explosion that crippled the spacecraft's service module. When Mission Control received the message "Houston we've had a problem," they focused on what could be done to control the circumstances at that time. She summarized that preparedness is controlling what it is possible to control, and believes preparedness is the beginning of "resiliency." She proposed that preparedness would begin with a system-wide strategy for systemic mitigation, and challenged GTTL students to help the Port of Seattle and other organizations understand what that might be. She asked students to visualize what a crisis might look like, envision our readiness to cope with it, think about how we will get information and make decisions, and finally how we will adopt those day-to-day procedures and practice them. In order for such a plan to be effective, she stressed that we also need to understand our limits and abilities, and we need to learn from others.

Tarleton concluded her presentation by saying that the complexity, connectedness, dependencies and decentralizing forces of today's world all conspire to complicate, jeopardize and/or paralyze effective preparedness and systemic mitigation responses to catastrophes. She noted that we do not know what we are capable of until we do it; but we do bring our knowledge and experience to the table. She emphasized again that keeping our communities and people safe and intact should be our guiding principles in preparing people and communities for the catastrophes that will come.

-Nicole Feodorov, GTTL Program Coordinator

14th Annual Conference: Student Presentations

Resiliency for Green Supply Chain Management: InterfaceFlor, LLC

Teresa Blanco, Douglas Hasbun

InterfaceFlor standard products eliminate all greenhouse gas (GHG) emissions associated with the entire lifecycle of carpet manufacturing. Their supply chain was designed by environmentalist engineers concerned with global warming. InterfaceFlor takes advantage of different types of renewal energy sources as well as partnering with suppliers that follow their green methodology. The intention of this paper is to test InterfaceFlor's resilience and observe several vulnerabilities involved in their production process.

Relationship Between Sustainability and Resiliency: The Implications for Business Strategies

Steven Asplund, Smriti Batra, Chalinee Srigrarom

With the growing acceptance of the need for a systems approach to the climate crisis, there is an interesting relationship between the drive for sustainability and the concept of resiliency. It has been argued that sustainable measures directly improve the resiliency of a company, implying that sustainability is an intrinsic characteristic of system resiliency. We demonstrate that this is a flawed premise. We argue both resiliency and sustainability are independent system characteristics in some respects, and overlapping in others. Case studies illustrate the relationships and overlapping nature of sustainability and resiliency in freight transportation and consumer logistics.

Mitigating Supply Chain Risks

Pierre de Saint Victor, Sandrine Wandji, Xiaoqiang Jin

Supply Chains are subject to all kinds of disruptions that occur mostly without warning. Globalization, variability in demand, and just-in-time principles are factors that contribute to the susceptibility of supply chain to natural and man-made disasters. To remain competitive, corporations need to be resilient. We introduce different approaches a company may use to prepare, prevent, respond and recover from a disruptive event in their supply chain, and offer several case studies to support the concepts.

Supply Chain Resiliency through Corporate Culture

Deb Thompson, Sawanee Charoenkitchaikan, Edward Yu

Increasing globalization has generally pushed customer-supplier relationships towards a broader, more complex network, which requires careful management and cooperation. During times of crisis such complexity can cause not just the company itself to falter, but also the collapse of the supply-chain network. Using Boeing's 787 project, we examine how supplier relationships are impacted by corporate cultures, and explain how more effective cultural management might have decreased vulnerability

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Supply Chain Resilience & Disaster Management

Elliott Walker, Sa Hopkins, Hesham Ahmed, Yoko Shimizu

The purpose of this research project is to analyze the vulnerability of a large corporation's supply chain to a "high impact, low probability disruptive event." Example events would be, natural disasters (earthquakes), man made (terrorist events, port strikes.)
We selected a medical device maker in the Puget Sound area as a case study. We suggest the risk points, level of preparedness, opportunities and recommendations to create more resiliency in the supply chain.

A Sustainable Business Model in the Chinese Furniture Industry

Jeff Cao, Mihyun Seol, Craig Sjoblom

China has become the world's third largest producer and the number one exporter of furniture products. This fast growth is built upon its traditional competitive advantages, including cheap labor, low environmental costs, and favorable export trading policies. However, there have been recent changes such as cost escalations in labor and raw materials, and rising environmental standards in international markets. This adds a sense of urgency for the Chinese furniture industry to adopt sustainable business models and increase supply chain's resiliency. We propose a sustainable model that features three key strategic components: low-cost production, green, and strategic alliance.

14th Annual Conference: Student Presentations (continued)

Resiliency in Chinese Surface Transportation
Michael Bonnett, Kaitlin Kerwin, Matthew Koon, Andrew Nguyen, Chilan Ta, Wenjuan Zhao

With continued Sino-US economic links and supply-chains that extend into the Chinese hinterland, vulnerability of transport channels in the mainland have greater potential for downstream effects in America. We focus on the primacy of rail in China's transportation network, then examine its resilience in response to the severe winter storms that hit the country last winter.

Resiliency and Sustainability at Sea-Tac Airport
Tania Elliott, Thomas Jermann, Jennifer Mazzotta, Gonzalo Thienel Carrasco, John Zuber

Sea-Tac Airport is working on several major projects anticipated to have a positive impact upon airport operations. We analyze three of them, and determine their implications for resilience and sustainability: third runway construction, installation of a fuel hydrant system, and light rail service to Sea-Tac. Do efforts towards increasing resiliency have a positive or negative impact upon the airport's operations, sustainability and resilience?

Building Resiliency into the Puget Sound Marine Transportation System: Resuming Seaport Activities Following Low-probability Yet High-consequence Events
Ellis Moose, Alisa Praskovich, Peter Soles, Xintian Wang

Federal regulations give the government broad authority to close seaports to vessel traffic following major maritime events. The mechanism for closure is well developed with major commercial vessels and port facilities managing security plans that outline their response. Until recently, significantly less attention has been paid to the task of reopening ports after such a closure. This project examines questions surrounding port operations with an eye toward "resiliency." It looks at efforts currently underway to address stakeholder issues and identifies best practices which hope to mitigate these challenges.

International Trade- How CAFTA Might Help in Marshalling Member Country Resources For a Disaster
Andrea Azcuy, Jung (Molly) Patton, Sailyn Sanchez, Ximena Ortiz, Cindy Vivero

A free trade agreement sounds attractive, although the member nations' focus is frequently on how the agreement could assist their economy. The focus of this study is on Central America Free Trade Agreement (CAFTA) and how it might help in marshalling member country resources for a disaster. The case of Hurricane Felix in Nicaragua is analyzed to determine how much assistance this trade agreement might provide.

Capturing Industrial Waste Streams to Improve Resiliency
Angie Fredrickson, Mark Gleason, Insook Heo, Brendan O'Donnell

Centralized power generation and transmission is highly prone to disruption in human and natural disasters. In addition, power systems are responsible for a range of environmental impacts, including the largest contribution to greenhouse gas emissions of any industry. To address both resiliency and sustainability, we propose Waste-to-Energy (WtE) as a viable solution. WtE refers to any system that produces energy from a waste stream. This is commonly energy recovery from direct combustion of non-recyclable waste or production of a fuel such as methane or biomass from waste. We highlight these benefits using both national and corporate case studies from Denmark and Alaska to demonstrate how waste can be viewed as a resilient resource.

The Sustainability of US Bio-Fuel Legislation
Sean Herring, Jove Graham, Kristen Lau

Biofuels have gained legislative prominence as a major plank in American energy policy. Recently a number of studies have influenced the press's and the public's impression of biofuels in a more negative direction. This paper evaluates whether American biofuel policy is currently accomplishing its original goals, and investigates the validity of recently publicized shortcomings. Future scenarios involving advanced biofuels and their policy implications will be discussed. Finally, brief suggestions to improve American biofuels policy will be presented based on the preceding information.

2008 GTTL Studies Certificate Recipients

Congratulations go to the following graduate students who have completed the GTTL Graduate Certificate:

Xiaozhi (Jeff) Cao, College of Forest Resources
Tania J. Elliott, Foster School of Business, & Jackson School of International Studies
Angie L. Fredrickson, School of Marine Affairs
Mark H. Gleason, School of Marine Affairs
Jove Graham, Jackson School of International Studies
Insook Heo, Evans School of Public Affairs
Kaitlin Kerwin, Jackson School of International Studies
Matthew Koon, Jackson School of International Studies
Kristen Lau, Jackson School of International Studies
Andrew Hieu Nguyen, Jackson School of International Studies
Brendan G. O'Donnell, Civil & Environmental Engineering
Kelly Pitera, Civil & Environmental Engineering
Daisuke Sasatani, College of Forest Resources
Peter S. Soles, School of Marine Affairs
Pete Sweeney, Jackson School of International Studies
Wenjuan Zhao, Civil & Environmental Engineering

GTTL Studies would also like to congratulate undergraduate **Craig S. Sjoblom**, (Department of Geography) who completed the requirements for GTTL Graduate Certificate.

2008 UW Extension Global Supply Chain Management Certificate Recipients

GTTL Studies and UW Extension would like to congratulate the following Extension students on completing the Global Supply Chain Management Certificate Program:

Ximena A. Azcuy, *The Boeing Company*
Sawanee Charoenkitchaikan
Douglas Hasbun, *The Boeing Company*
Sa Hopkins, *Industrial Distribution Group*
Thomas Jermann, *Expeditors*
Jennifer Mazzotta, *Summa*
Ximena Ortiz, *The Boeing Company*
Sailyn L. Sanchez, *The Boeing Company*
Cindy Vivero, *The Boeing Company*
Hoa Vu, *The Boeing Company*
Philipp Vu, *Nokia*
Elliott Walker, *DHL Express*
John Zuber

The Global Supply Chain Management Certificate Program (GSCM) is offered through UW Extension. Designed for working professionals, GSCM students enroll in GTTL's graduate level seminars in international trade, and transportation systems (GTTL 501 and 502 courses), and tailor their final independent study project to their specific interests and background.

For additional information please see the UW Extension web site at <http://www.extension.washington.edu/ext/certificates/glo/glo_gen.asp >.

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Alumni News

Joe Zelasney *(GTTL Studies and School of Marine Affairs)* just returned from a year in China, where he studied Chinese on a Foreign Language and Area Studies (FLAS) fellowship. He is currently working for *Cargo Business News* as a special projects manager and editorial assistant. Joe's specific interests include marine renewable energy development and policy, and marine transportation and seaport management.

Boeing/GTTL Academic Achievement Awards

GTTL Studies would like to thank The Boeing Company for generously supporting our students by contributing to the GTTL/Boeing Student Scholarship Fund. Over the past 8 years, The Boeing Company has contributed over $66,000 to the scholarship fund, which has made it possible for many of GTTL's students to receive awards based on their academic achievements. For the 2007-2008 academic year the following students received awards:

Autumn 2007:

Jill Bamburg, Forest Resources
Smriti Batra, Industrial Engineering
Guido Biggio, Business Administration—Exchange Program
Will Dickerson, Global Supply Chain Management
Tuba Erbil, Industrial Engineering & Chemical Engineering—Exchange Student
Tareyn Gillilan, MBA
Mimi Zhang Halliwell, Business Administration & CISB
Quinn Hanson, Geography & Slavic Languages
Muamer Hodzic, Business Administration
Amy Hughes, MBA
Patrick Hyde, Business Administration &Finance
Thomas Jerman, Global Supply Chain Management
Kyung Sung Jung, GEMBA
Dalibor Jurcevic, Business Administration & CISB
Hyung Geun Kim, GEMBA
Si Chang Lee, GEMBA
Jonathan Mesler, Global MBA
Kelly Pitera, Civil Engineering
Christopher Pollock, MBA
Jeanine Van der Wel, Business Administration ~ Exchange Student, Erasmus University Rotterdam
Sung Tech Youn, GEMBA

Winter 2008:

Peter Soles, Marine Affairs
Steven Asplund, Industrial Engineering
Bill Bockman, International Studies
Brendan O'Donnell, Civil & Environmental Engineering

Spring 2008:

Hesham Ahmed, Global Supply Chain Management
Steven Asplund, Industrial Engineering
Andrea Azcuy, Global Supply Chain Management
Smriti Batra, Industrial Engineering
Teresa Blanco, Global Supply Chain Mgmt.
Michael Bonnett, Business Administration
Jeff Xiaozhi Cao, Forest Resources

Spring 2008 continued:

Sawanee Charoenkitchaikan, Global Supply Chain Management
Pierre De Saint Victor, Engineering
Tania Elliott, MBA
Angie Fredrickson, Marine Affairs
Mark Gleason, Marine Affairs
Eric Jove Graham, International Studies
Douglas Hasbun, Global Supply Chain Management
In Sook Heo, Public Affairs
Sean Herring, Public Affairs
Sa Hopkins, Global Supply Chain Management
Thomas Jermann, Global Supply Chain Management
Xiaoqiang Jin, Industrial Engineering
Kaitlin Kerwin, International Studies
Matthew Koon, International Studies
Kristen Lau, International Studies
Jennifer Mazzotta, Global Supply Chain Management
Ellis Moose, Marine Affairs
Andrew Hieu Nguyen, International Studies
Brendan O'Donnell, Civil & Environmental Engineering
Ximena Ortiz, Global Supply Chain Management
Jung (Molly) Patton, Global Supply Chain Mgmt.
Alisa Praskovich, Marine Affairs
Sailyn Sanchez, Global Supply Chain Management
Mihyun Seol, Forest Resources
Yoko Shimizu, Global Supply Chain Management
Craig Sjoblom, Geography
Peter Soles, Marine Affairs
Chalinee Srigrarom, Industrial Engineering
Chilan Ta, Urban Design & Planning
Gonzalo Thienel Carrasco, Forest Resources
Deborah Thompson, Global Supply Chain Mgmt.
Cindy Vivero, Global Supply Chain Management
Elliott Walker, Global Supply Chain Management
Sandrine Wandji, Global Supply Chain Management
Xintian Wang, Marine Affairs
Edward Yu, Global Supply Chain Management
Wenjuan Zhao, Civil & Environmental Engineering
John Zuber, Global Supply Chain Managment

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GTTL Studies

The aim of the graduate certificate program in Global Trade, Transportation, and Logistics (GTTL) is to enable graduate students to augment their degree programs in preparation for careers that demand the combined knowledge of trade, transportation, and logistics. Particular attention is directed to the study of activities involved in the flow of goods from point of origin to point of consumption on a global scale. The wide range of issues addressed include the management of the intermodal connections among maritime, aviation, and overland modes of transport; environmental and energy concerns; advancements in telecommunications; and the legal, regulatory, and technological infrastructures that facilitate global commerce and transportation.

For more information contact GTTL at 206-616-5778; email gttl@u.washington.edu; or at our web site http://depts.u.washington.edu/gttl