PLANES, TRAINS & HURRICANES:
The Four Quadrants - What Are They and How Do They Impact Your Supply Chain?

May 13, 2008

Presented by:
Transport Institute

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presents

4th Annual Supply Chain Connections Conference

Planes, Trains & Hurricanes:
The Four Quadrants: What Are They & How Do They Affect Your Supply Chain?

May 13, 2008
Winnipeg, Manitoba

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Edited By: Doug Duncan & Kathy Chmelnytzki
2008 Supply Chain Connections Conference

“Planes, Trains and Hurricanes” was the theme of the 4th annual Supply Chain Connections conference, and given the recent tragedies that have occurred in China and Myanmar, no other issue could be more relevant. The format of the conference separated speakers into four quadrants, each representing a unique area of logistics management. These areas are shown in the following table:

<table>
<thead>
<tr>
<th>Sector</th>
<th>Environment</th>
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<tbody>
<tr>
<td></td>
<td>Uninterrupted</td>
</tr>
<tr>
<td>For-profit</td>
<td>Q1</td>
</tr>
<tr>
<td>Not-for-profit</td>
<td>Q3</td>
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</table>

For each area, both academic and industry points-of-view were illustrated for the audience.

**Quadrant 1 – For Profit, Uninterrupted (Business Logistics)**

To illustrate the academic perspective of quadrant one, Dr. Ron McLachlin, Associate Professor, Department of Supply Chain Management at the Asper School of Business, gave his views on three supply chain issues in this area. The first issue discussed was *supply chain integration*. Research indicates that integrated supply chains lead to improved performance, and that this is true among all quadrants. The issue of *vertical integration and outsourcing* concerns what supply chain activities should be performed in-house and which should be outsourced? Again, according to Dr. McLachlin, research suggests that there is no one best way. Instead, depending on certain factors like resources and coordination requirements, these decisions should be conditional to the unique circumstances of your firm. Lastly was the issue of *postponement* which is the process of making decisions only when the final requirements are identified. According to the research, postponement can offer benefits in both lean systems and agile systems in the same supply chain.

Mr. David White, the Executive Vice President of Supply Management for New Flyer Industries, represented the industry view on quadrant one. New Flyer produces 45 buses per week. The have an extensive product offering (50,000 different purchased part numbers in 2007) and utilize 400 active suppliers. To say the least, their supply environment can be extremely complex. Mr. White stressed the importance of supplier selection as well as the continuous improvement of processes, such as the Enterprise Resource Planning (ERP) system and order management methods, in order to meet daily requirements. In the case of New Flyer, stability requires upwards of 99% parts availability and that critical items not expire.
Quadrant 2 – For Profit, Interrupted
The second quadrant concerns firms in the for-profit sector, but who are working in an interrupted environment. Paul Larson began the session by talking about Supply Chain Risk Evaluation and Management (SCREAM) and describing its two different approaches, proactive and reactive. The reactive approach means you will deal with the threat as it occurs while the proactive approach involves some risk management, either detailed procedures or general guidelines. Some of the possible interruptions that could disrupt the supply chain include pandemics, earthquakes, or terrorist attacks, among others. The likelihood and impact these could have on a global scale were discussed. Dr. Larson then moved the presentation toward the growing interest in greener supply chains. Some of the factors attributing to heightened green awareness include the desire to cut energy costs or to enhance productivity. Innovative freight practices, such as trip scheduling or idling reduction, can also be considered in order to increase efficiency and become more environmentally friendly. Dr. Larson finished the presentation with a research term called “comprehensive sustainability”. It was stated that while firms usually only consider economic impacts, environmental and social impacts should also be measured.

Ian Seunarine, Logistics Manager of the Duha Group, talked about his experience in the color sampling industry during the final part of the morning session. The Duha Group produces color samples for the paint and automotive industries. It is a global company with 950 customers in over 100 countries. Mr. Seunarine explained how demand was up in the paint chip industry, but that competition, industry consolidation, and the cost of raw materials were also increasing. In order to mitigate supply chain risk, it was suggested that a secure supply chain was essential. Like Dr. Paul Larson, this presentation also stated the importance of going green and sustainability. According to Mr. Seunarine, sustainability can be a risk if it is ignored in the supply chain field.

Lunch
The luncheon presentation was made by Catherine Viglas, President of the Canadian Institute of Traffic and Transportation (CITT). CITT is a leading professional development organization in the field of supply chain and logistics. According to Ms. Viglas, in 2008, all of the top 15 award-winning companies that move goods domestically or internationally had a CITT undergraduate or CITT certified professional running aspects of their supply chain. CITT professionals work in every aspect of supply chain management, including military, the provincial government, and third-party logistics.

Quadrant 3 – Not-for-profit, Uninterrupted
The afternoon session began with presentations regarding supply chains in the quadrant 3 scenario. To begin, Dr. Paul Earl, Assistant Professor, Department of Supply Chain Management at the Asper School of Business illustrated the academic view of this environment. The presentation utilized the Canadian grain industry, specifically the
Canadian Wheat Board (CWB), as an example of a “non-commercial” entity. The CWB is essentially “commercial”, but operates in a not-for-profit manner by putting social goals ahead of economic ones. Dr. Earl illustrated research that suggests the grain industry has a very ineffective logistics system as well as great inefficiencies in infrastructure and technology. However, despite these claims, it was stated that neither is wrong in the debate of economic versus social values. Dr. Earl concluded by saying that there are risks of inefficiencies and ineffectiveness in this quadrant, but that social goals are still valid. The major challenge is to find an effective equilibrium that satisfies both goals.

The industry point of view for quadrant 3 was presented by Rick Steinke, the Director of Logistics at the Canadian Wheat Board. The CWB represents 75,000 farmers in western Canada. Their product is marketed to over 70 countries throughout the world and around $950 million is spent on supply chain activities. One of the issues in the Canadian grain industry is the distance of the growing region to ports. Compared to the competition, the growing region in Canada is a far distance to the ports, creating higher transportation costs. Another issue is that the CWB is confined to only the CP and CN rail lines to transport product. Despite these challenges, the company is also faced with unpredictable events such as the derailment of rail cars and avalanches. The CWB takes both a proactive and reactive approach when dealing with these issues. Mr. Steinke listed demand and performance management as examples of proactive strategies used by the CWB. On the other hand, sometimes the approach has to be reactive due to the unpredictability of certain events.

**Quadrant 4 – Not-for-profit, Interrupted**

In the final session of the day, Ms. Gyongyi Kovacs, Assistant Professor at the Hanken School of Economics and Business Administration, talked about humanitarian logistics. The major portion of disaster relief efforts involves logistics operations. When human lives are at stake, the importance of an effective and resilient supply chain cannot be understated. The main concern of humanitarian logistics is to help vulnerable people. Challenges can vary greatly depending on the factors of the situation, including the type of disaster and many other regional factors. Demand is irregular, suppliers vary (often choices are limited), there can be unusual constraints, and knowledge of the situation is low because of the quick response nature of disaster management. Because of the importance of humanitarian logistics, and the many unique challenges it brings, research opportunities are countless. Ms. Kovacs talked about the HUMLOG Group which is an international network in humanitarian logistics research. The Hanken School is part of this group whose aim is “to research the area of humanitarian logistics in disaster preparedness, response and recovery with the intention of influencing future activities in a way that will provide measurable benefit to persons requiring assistance”. More information can be found at [www.humloggroup.org](http://www.humloggroup.org).

The final speaker of the day was Mr. Donald Shropshire, National Director of Disaster Management for the Canadian Red Cross. Mr. Shropshire gave the audience an
illustration of what it is like to work in humanitarian logistics. The Canadian Red Cross acts as a medium for people that need assistance and people that want to provide assistance. The organization performs 5000 responses per year. An interesting fact noted from the presentation was that since the 1970’s there has been an increase in natural disasters, but the number of deaths as a result of these disasters are actually lower. Mr. Shropshire gave some examples of Canadian Red Cross emergency responses situations, such as the 2003 SARS outbreak in Toronto, the 2003 B.C. forest fires and Hurricane Katrina in 2005. The final conclusions of the presentation stated that not all disasters are preventable, but by working with industry and government, there can be success in mitigating the impacts of future disasters.
4th Annual Supply Chain Connections
Planes, Trains & Hurricanes: The Four Quadrants

Tuesday, May 13, 2008
The Hotel Fort Garry
Winnipeg, Manitoba

AGENDA

Quadrant One - For Profit, Uninterrupted
9:00 - 10:15 a.m. - Moderator - Dr. Paul Larson

Speakers: Ron McLachlin, Ph.D & Mr. David White
Associate Professor
Dept. of SCM
Executive VP, Supply Management
New Flyer Industries

10:15 - 10:30 a.m. Coffee Break

Quadrant Two - For Profit, Interrupted
10:30 - 11:50 a.m. - Moderator - Dr. Mohan Agrawal

Speaker: Paul D. Larson, Ph.D & Mr. Ian Seunarine
Director, Transport Institute
Head, Dept. of SCM
I.H. Asper School of Business
Logistics Manager
The Duha Group

12 Noon - 1:30 p.m. LUNCHEON

Keynote Speaker - Ms. Catherine Viglas
CITT
President

Quadrant Three - Not-For-Profit, Uninterrupted
1:30 - 2:45 p.m. - Moderator - Prof. Matthew Morris

Speakers: Paul Earl, Ph.D & Mr. Rick Steinke
Associate Professor
Dept. of SCM
Director of Logistics
I.H. Asper School of Business
Canadian Wheat Board

2:45 - 3:15 p.m. Coffee Break

Quadrant Four - Not-For-Profit, Interrupted
3:15 p.m. - 4:30 p.m. - Moderator - Mr. Soaleh Khan

Speakers: Gyöngyi Kovács & Mr. Donald Shropshire
Assistant Professor
HANKEN Swedish School of Econ.
and Business Administration
National Director, Disaster Mgmt.
Canadian Red Cross

4:30 p.m. CLOSING REMARKS
presents

4th Annual Supply Chain Connections Conference

PLANES, TRAINS & HURRICANES
THE FOUR QUADRANTS: What Are They and How Do They Impact Your Supply Chain?

Tuesday, May 13, 2008
7th Floor, Hotel Fort Garry

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The Hotel Fort Garry
Canadian Transportation Research Forum
Dr. Ron McLachlin
Associate Professor
Department of Supply Chain Management
Asper School of Business

Ron McLachlin, Ph.D. is an Associate Professor of Operations Management at the University of Manitoba, Asper School of Business. He earned his B.Sc. (Eng) and MBA degrees at the University of Alberta and his Ph.D. in Operations Management at the University of Western Ontario. Dr. McLachlin's research interests are in operations strategy and supply chain strategy. In particular, he is interested in process innovation (e.g., just-in-time / lean manufacturing, synchronous operations), the implementation of supply chain integration, and supply chain postponement strategies. He is currently researching supply chain management for the not-for-profit sector in interrupted environments. His publications are in the Journal of Operations Management, International Journal of Manufacturing Technology and Management, Management Decision, Operations Management Review, Managing Service Quality, Business Quarterly, and Elsevier Science Publishers. He is an Associate Editor of the Journal of Operations Management.

He has taught operations management, the management of quality, service operations, production seminars, operations strategy, topics in advanced production and operations management, and advanced supply chain management.

Mr. David White
Executive Vice President, Supply Management
New Flyer Industries

David White is the Executive Vice President of Supply Management at New Flyer Industries, in Winnipeg Manitoba. New Flyer is the leading manufacturer of heavy-duty transit buses in the United States and Canada. The company operates 3 facilities - in Winnipeg Manitoba, Crookston Minnesota and St. Cloud Minnesota - with a skilled workforce of more than 2200 employees. New Flyer is a technology leader, offering the broadest product line in the transit industry, including drive systems powered by clean diesel, liquid natural gas,
compressed natural gas, electric trolley, gas hybrid, diesel hybrid, and fuel cell / hydrogen. New Flyer currently builds over 40% of the transit buses in North America and has annual sales of approx $1 billion.

Prior to taking on Executive leadership of the Supply Management function at New Flyer in 2002, David spent 4 years as the company's Corporate Controller. He is a Chartered Accountant and a 1990 graduate of the Asper School of Business at the University of Manitoba.

Dr. Paul D. Larson,  
Director, Transport Institute  
Head, Department of Supply Chain Management  
University of Manitoba

Paul D. Larson, Ph.D. is Head of the SCM Department and Director of the Transport Institute at the University of Manitoba. He earned a MBA degree at the University of Minnesota and a Ph.D. at the University of Oklahoma. Dr. Larson has consulted and conducted executive seminars, in Scandinavia, North and South America, the Caribbean and China, on logistics, purchasing and SCM.

Mr. Ian Seunarine  
Logistics Manager  
The Duha Group

Ian was educated at the University of Manitoba and received his B.A. in 1990 and Masters Degree in Natural Resources Management, in 1994.

After working in various public and private sector jobs post-university, Ian joined the Duha Group in 1996. He started as an Environmental Representative, and worked his way forward to Distribution Coordinator, Materials Control Manager, and is currently a Logistics Manager.

As part of the senior management team, Ian’s current position is responsible for job estimating, customer service, production planning and scheduling, purchasing, inventory and distribution. He also oversees sustainable management practices within the company. Ian’s works globally on a regular basis with satellite facilities in the U.S., Mexico, France, Australia, Singapore and China.
Throughout his career Ian has taken various courses offered through PMAC related to supply management.

Ian’s professional affiliations include: Purchasing Management Association of Canada — Manitoba Chapter and Institute for Supply Management. Ian sat on CME (Canadian & Manufactures & Exporters Canada) committee for Export and he currently sits on their committee for the Environment. Ian is also an informal member of Manitoba’s Environmental Management Network.

Ian has also coached youth soccer for over 10 years, and is currently busy coaching his son’s baseball team. Ian is married, and has two boys, ages 6 & 4. He loves sports, traveling, reading, and writing. Ian currently lives in Winnipeg.

**Ms. Catherine Viglas**  
**President**  
**CITT**

Ms. Viglas is an executive member of the Canadian Society of Association Executives and holds the CAE designation. She brings to the CITT over 18 years of senior management experience with both national and provincial organizations and has worked extensively with government and industry.

The CITT is the leading provider of professional development and certification in the area of supply chain and logistics management. With over 2,000 Active Members, CITT is celebrating 50 years of success in logistics management training, having provided professional development since 1958.

The CITT designation continues to distinguish Canada's supply chain and logistics professionals, and is a nationally recognized level of achievement within the industry.
Dr. Paul Earl  
Assistant Professor  
Department of Supply Chain Management  
Asper School of Business

Paul Earl joined Asper School of Business in 2003, after a long and varied career in the western Canadian grain industry. He worked for Untied Grain Growers, the Grain Transportation Agency, and, just prior to coming to the Asper School, had spend about five years with the Western Canadian Wheat Growers Association. He was then one of the founding members of the Department of Supply Chain Management when it was formed in the Asper School in 2004.

About half way through his career in the grain industry, he undertook doctoral studies at the University of Manitoba, completing his degree in 1992. His thesis examined the farm movement in western Canada from about 1918 to 1935, and examined how three prairie Wheat Pools, and the Canadian Wheat Board came into existence, and the ideologies held by farmers shaped those institutions.

Paul has had a long, but intermittent, relationship with the Transport Institute. He was a research associate with the Institute in 1987 and 1988 while working on his degree, and completed several studies with the Institute over the following years. Paul looks forward to several more years of exciting and interesting work in the Institute and the Supply Chain Management department.

Mr. Rick Steinke  
Director of Logistics  
Canadian Wheat Board

Rick Steinke began his career at the CWB in 1993, where he has held various positions of increasing responsibility. Presently, Rick is the CWB’s Director of Logistics. Rick and his team are responsible for identifying what products are available for sale and determining the most cost effective way to move product to market. This past year the CWB logistical team moved 19.5 MMT of wheat, durum, and barley through six different transportation corridors. Grain from 75,000 farmers is moved over 1600 km, using 337 inland facilities, 24,000 railcars, and 28 port elevators to seventy countries around the world.

Rick has held previous positions at the CWB in Corporate Policy, Sales Planning, U.S. Sales, and Market Analysis.
Rick holds a Masters and B.S.A. degree in Agricultural Economics from the University of Saskatchewan.

**Ms. Gyöngyi Kovács**  
Assistant Professor  
HANKEN Swedish School of Economics and Business Administration

**Gyöngyi Kovács** is Assistant Professor in Supply Chain Management and Corporate Geography at the Swedish School of Economics and Business Administration (Hanken), in Helsinki, Finland, where she also earned her PhD.

She is the co-ordinator of the HUMLOG Group, a research network in humanitarian logistics. Her other research interests include sustainable supply chain management, supply chain collaboration, the abductive research approach, reverse logistics. Amongst others, her publications have appeared in the International Journal of Physical Distribution and Logistics Management and the Journal of Transport Geography.

Gyöngyi is currently the European co-editor of the International Journal of Physical Distribution and Logistics Management. She can be contacted at kovacs@hanken.fi.

**Mr. Donald Shropshire**  
National Director, Disaster Management  
Canadian Red Cross

**Donald Shropshire** is the National Director, Disaster Management for the Canadian Red Cross. Responsible for the national planning, development, operations and evaluation of the Canadian Red Cross’ Disaster Services and for the coordination of all major international disaster relief activities, Mr. Shropshire has provided leadership in responding to over 40 major disasters both in Canada and abroad. He serves as a faculty member responsible for training the International Federation of Red Cross and Red Crescent’s senior disaster management personnel and Trainer of Trainers for the International Sphere program. Don also serves as a seasonal instructor at Carleton University’s Sprott School of Management.
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<thead>
<tr>
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<th>Company/Role</th>
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<td>Cabak, Lynn</td>
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<td>DePape, Brent</td>
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<td>VanDeKeere, Siobhan</td>
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</table>
Moderators

Prentice, Barry  
Morris, Matthew  
Bhatt, Suresh  
Appadoo, Raj  

Dept. of SCM, Asper School of Business

Speakers (in order of appearance)

McLachlin, Ron  
White, David  
Larson, Paul  
Seunarine, Ian  
Earl, Paul  
Steinke, Rick  
Kovács, Gyöngyi  
Shropshire, Donald  

Dept. of SCM, Asper School of Business  
New Flyer Industries  
Transport Institute, Asper School of Business  
The Duha Group  
Dept. of SCM, Asper School of Business  
Canadian Wheat Board  
HANKEN Swedish School of Economics & Business Administration  
Canadian Red Cross

Staff

Chmelnytzki, Kathy  
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Hickson, Allister  
Phillips, Al  
Wirth, Brian  
Wright, Stephen  
Wolters, David  
Khan, Saeleh  
Peiuk, Clare  
Viafara, Jairo  

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Planes, Trains & Hurricanes

4th Annual Supply Chain Connections

May 13, 2008

Winnipeg
# The Four Quadrants

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## Business Logistics vs. Relief Logistics

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<th>Relief Logistics</th>
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<tr>
<td>Purpose</td>
<td>Economic profit</td>
<td>Social impact</td>
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<td>Context</td>
<td>Uninterrupted</td>
<td>Interrupted</td>
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<tr>
<td>Time</td>
<td>Time is money</td>
<td>Time is life</td>
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<tr>
<td>Source of $</td>
<td>Customers</td>
<td>Donors</td>
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</table>
## The Four Quadrants

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Quadrant One - Issues

- Supply Chain Integration
- Vertical Integration and Outsourcing
- Postponement
Issue 1: Supply Chain Integration

Definition: "an association of customers and suppliers who work together to optimize their collective performance in the creation, distribution, and support of an end product" (National Research Council, 2000)

Supply chain integration ===> improved performance (numerous authors)
Frohlich and Westbrook, *Arcs of Integration*, 2001
Frohlich and Westbrook, *Arcs of Integration, 2001*

- Inward-facing strategy
  - seriously jeopardized performance
- Supplier- or customer-facing strategies
  - little gain in performance
- Periphery-facing strategy
  - may be the "natural equilibrium point"
- Outward-facing strategy (most integrated)
  - largest rates of performance improvement
Eight Integrative Activities (Frohlich and Westbrook, 2001)

• access to planning systems
• sharing production plans
• joint EDI access/networks
• knowledge of inventory mix/levels
• packaging customization
• delivery frequencies
• common logistical equipment/containers
• common use of third-party logistics
Performance Measures: Marketplace

- market share
- profitability
- return on investment
Performance Measures: Productivity

- average unit manufacturing cost
- materials and overhead total costs
- manufacturing lead time
- equipment changeover time
- procurement lead time
- delivery lead time
- inventory turnover (sales/inventory)
- worker/direct labour productivity
Performance Measures: Non-Productivity

- customer service
- customer satisfaction
- conformance quality
- product variety
- speed of product development
- number of new products developed
- on-time delivery
- supplier quality
a "growing consensus in the literature that coordinated upstream and downstream integration in the supply chain differentiates performance"
Issue 2: Vertical Integration / Outsourcing (Hayes et al., 2005)

• Question: What activities should be:
  • conducted in-house? outsourced?
• Recently, trend toward outsourcing
• But, "There is no one best way"
• Issue is more complex than it first appears
• Real question: Under what conditions should activities be:
  • conducted in-house? outsourced?
# Continuum of Governance Structures

- Who owns what along the supply chain?
- How to best gain access to assets?

<table>
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<tr>
<th>Hierarchies</th>
<th>===&gt;</th>
<th>Partners</th>
<th>===&gt;</th>
<th>Markets</th>
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<td>Vertical Integration</td>
<td>&quot;Virtual&quot; Integration</td>
<td>Strategic Alliances</td>
<td>Arms-length Relationships</td>
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<tr>
<td>100% Ownership</td>
<td>Joint venture/Equity Partner</td>
<td>Long-term Relationship</td>
<td>Short-term contract</td>
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</tbody>
</table>
Vertical Integration / Outsourcing

- not just a "make vs. buy" decision
  - focuses on only costs
- not just a "focus on core competencies"
  - focuses on only current capabilities
- outsourcing decisions - strongly tied to:
  - a firm's competitive strategy,
  - current capabilities (DO today?), and
  - intended capabilities (DO in future?)
Factors for the Outsourcing Decision (Hayes et al., 2005)

a) capabilities / resources
b) coordination requirements
c) strategic control and risk

===>>
a) Capabilities / Resources

- decisions must address:
  - resource constraints
  - limits of operating capabilities

- just because a firm:
  - can do something doesn't imply it should.
  - cannot do something doesn't imply it shouldn't develop capabilities.
### b) Coordination Requirements

<table>
<thead>
<tr>
<th>Vertical Integration</th>
<th>&quot;Virtual&quot; Integration</th>
<th>Strategic Alliances</th>
<th>Arms-length Relationships</th>
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<tbody>
<tr>
<td><strong>Difficult</strong></td>
<td>&lt;= codify? standardize?</td>
<td>=</td>
<td>Easy</td>
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<tr>
<td>Tacit</td>
<td>&lt;= type of information?</td>
<td>=</td>
<td>Capturable Shareable</td>
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<tr>
<td>Idiosyncratic</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### c) Strategic Control and Risk

<table>
<thead>
<tr>
<th>Vertical Integration</th>
<th>&quot;Virtual&quot; Integration</th>
<th>Strategic Alliances</th>
<th>Arms-length Relationships</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Risk of Lock-in?</td>
<td></td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>specialized contracts</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>physical assets</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>intangible assets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>Risk of Leakage of Intellectual Property?</td>
<td></td>
<td>Low</td>
</tr>
</tbody>
</table>
**Issue 3: Postponement**

- delaying decisions until end requirements are known, and then reacting quickly to meet these requirements (Naylor, 1999; Van Hoek, 2001)
- allows advantages of two very different systems (lean and agile) to be realized in the same supply chain (Mason-Jones et al., 2000)
Postponement - Interrelated Concepts (Naylor et al., 1999)

- agile manufacturing
- lean manufacturing
- the decoupling point
- the push-pull boundary
- mass customization
- risk pooling
Agile Approaches

• using market knowledge to exploit profitable opportunities in a volatile marketplace

• implies robustness, or the ability to withstand – and take advantage of – variations and disturbances

• focus is on service and service levels
Lean Approaches

• developing a value stream to eliminate all waste, including time, to ensure a level schedule
• implies the avoidance of robustness by insisting on stable demand – provided by the level schedule
• focus is on cost and efficiency
Naylor et al., 1999

- Raw Material Supplier
- Manufacturers/Assemblers
- Retailer
- End-Users

Pull

Buy to order
- Make to order
- Assemble to order
- Make to Stock
- Ship to stock

A Stockholding Decoupling Point
Quick Summary

• Supply chain integration ==> performance
• Outsourcing: no one best way; depends on:
  • capabilities / resources
  • coordination requirements
  • strategic control and risks
• Postponement can provide benefits of both:
  • lean systems
  • agile systems
Imagine a perfectly integrated supply chain as a champion marathon runner, . . . The corresponding image for a conventional chain would be Dr. Frankenstein's monster lurching down the village lane, . . . If that's the competition, you don't have to be an Olympic runner to come in first. If you can walk, you can win.
Thank you
The Supply Environment

- **Broad product offering**
  - Most extensive product assortment in the industry
  - 50,000 different purchased part numbers in 2007
  - 400 active suppliers
  - 1200 shipment lines received per day

- **Volume and line speed**
  - 45 buses per week (9 per day)
  - Production line moves every 3 hours

- **Engineered to order contracts**
  - 90 contracts per year
  - 150 engineering staff
  - High variability created
  - Many parts are contract specific (discrete orders)
  - 70 new part numbers per day
  - Design completion at 6 weeks to line entry

- **Integrating new innovations**
  - Customers constantly specifying new technology from new suppliers
The Supply Environment

- **Multiple Production lines**
  - 6 production lines across 3 facilities
  - 3 warehouse sites
  - Integrated facilities dependent upon each other

- **Mixed modeling on Production lines**
  - Build rates per contract have limitations
  - Up to 25 contracts and all models in process at one time

- **New on line requirements arise daily**
  - Customer requests for change
  - Engineering FTQ errors can be expected
  - Quality rejects and handling/installation damage

- **Part shortages cause cascading impact**
  - 400+ installations in 35 line stations
  - Incomplete work affect downstream installations
  - Many items will result in line shutdown if short
The Requirements

- Critical items cannot be short
- Stability requires > 99% Parts availability
- Target 8 days of supply (30 turns per year)
- Reduced lead times
- Flexibility to adjust schedules
- Responsiveness on new requirements
- Low cost producer status
- Leading position in Product Quality
1. **Focus on the Processes**

   **ERP System**
   - Data integrity is a critical focus
   - MRP run daily

   **Order management methods**
   - Communicate long term schedules
   - Simplified the methods of communicating orders

   **Discipline to balance the plan daily**

   **Clear daily metrics to manage staff**

   **Clear weekly metrics to assess supplier performance**

   **Invest in continuous improvement of the processes**
The Critical Factors to Success

2. Supplier Selection

- Perform due diligence when choosing suppliers
- Outline and agree to expectations up front
- Establish strategic relationships with best in class
- Cease relationships with poor performers
- Consolidate the supply base into the strong suppliers wherever possible
Miles Ahead.
Quadrant 2 - Supply Chains, Interrupted

Paul D. Larson, Ph.D.
Director, Transport Institute

Supply Chain Connections

May 13, 2008
### The Four Quadrants

<table>
<thead>
<tr>
<th>Sector</th>
<th>Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Uninterrupted</td>
</tr>
<tr>
<td>For-profit</td>
<td>Q1</td>
</tr>
<tr>
<td>Not-for-profit</td>
<td>Q3</td>
</tr>
</tbody>
</table>
Risk Management vs. Crisis Management

<table>
<thead>
<tr>
<th>proactive</th>
<th>Risk management</th>
<th>Resources squandered?</th>
</tr>
</thead>
<tbody>
<tr>
<td>reactive</td>
<td>Crisis management</td>
<td>You won your bet!</td>
</tr>
</tbody>
</table>

Interruption occurs fails to occur

You won your bet!
To plan or not to plan?

“following a few basic crisis-response principles is more effective than having a detailed a priori plan in place.”

How to SCREAM*

Approach

Proactive

Detailed, threat-specific procedures

General Guidelines

Reactive

*SCREAM = supply chain risk evaluation and management
Likelihood and Impact

- **Likelihood**
  - high
  - low

- **Impact**
  - small
  - LARGE

- **Low priority**
- **Top priority**

- **?”
- **?”

Diagram illustrates a matrix where likelihood and impact are evaluated, with categories for low priority and top priority.
http://climate.uvic.ca/people/ewiebe/car/fuel_price.html
Types of Risk

• Matching supply and demand
  • Inventory
  • Information

• Interruptions
  • Earthquakes
  • Cyclones or Hurricanes
  • Pandemics
  • Labour strikes
  • Terrorist attacks
  • Global warming
### SOCIETY

A pandemic disease jumps from the animal population to humans, with high mortality and transmission rates following.

<table>
<thead>
<tr>
<th>LIKELIHOOD</th>
<th>SEVERITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 below 1%</td>
<td>1 600-8 000</td>
</tr>
<tr>
<td>2 1-5%</td>
<td>8 mn-40 mn</td>
</tr>
<tr>
<td>3 5-10%</td>
<td>40 000-200 000</td>
</tr>
<tr>
<td>4 10-20%</td>
<td>200 000-1 million</td>
</tr>
<tr>
<td>5 above 20%</td>
<td>&gt;1 million</td>
</tr>
</tbody>
</table>

Incidence of infectious disease continues to rise in Africa and rises dramatically in Russia and South-East Asia (TB and HIV/AIDS).

Chronic diseases become widespread in the developed world.

### TECHNOLOGY

Attack or system failure in CII creates a domino effect, shutting down IT-dependent applications in power, water, transport, banking and finance, and emergency management.

Studies reveal health impairment due to exposure to widely used nanoparticles (paint, cosmetics, healthcare). Primary impacts on public health and secondary impacts on investment in a range of nanotechnologies.
## ENVIRONMENT

Extreme weather events linked to climate change will impact businesses and society at large (e.g. multiple tropical cyclones make landfall along the Gulf Coast, India, Bangladesh or China over a 10-year period)

<table>
<thead>
<tr>
<th>LIKELIHOOD</th>
<th>SEVERITY (losses)</th>
<th>3.5</th>
<th>2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 below 1%</td>
<td>1 600-8 000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 1-5%</td>
<td>8 mn-40 mn</td>
<td></td>
<td></td>
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</tr>
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<td>&gt;1 million</td>
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<td></td>
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</tbody>
</table>

More frequent and severe heatwaves and droughts have harsh impacts on agricultural yields around the world

Declining quality and quantity of water in several major watersheds leads to water shortages and increased prevalence of waterborne disease

Natural catastrophe: Category 5 tropical cyclone hits a densely populated area in an emerging country such as India, China or Bangladesh.

<table>
<thead>
<tr>
<th></th>
<th>4</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural disaster: A strong earthquake or tsunami (followed by a strong tsunami) hits a developing country such as China, India or Indonesia</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Natural catastrophe: Extreme inland flooding of the Mississippi, Yangtze, Thames or Rhine rivers causes direct economic and human losses and serious disruption downstream

<table>
<thead>
<tr>
<th></th>
<th>2</th>
<th>2.5</th>
</tr>
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<td></td>
<td></td>
</tr>
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</table>
The 18 Core Global Risks: Likelihood and Severity (deaths)

- Infectious disease, developing world
- Food insecurity
- Pandemic
- Interstate & civil wars
- Chronic disease, developed world
- Failed & failing states
- Cyclone
- Middle East instability
- Extreme climate change related weather
- Extreme inland flooding
- Loss of freshwater
- International terrorism
- Heatwaves & droughts
- Collapse of NPT
- BrP breakdown
- Emergence of nanotechnology risks
- Transnational crime and corruption

Severity (in no. of deaths):
- more than 1,000,000
- 200,000-1,000,000
- 40,000-200,000
- 8,000-40,000
- below 1%
<table>
<thead>
<tr>
<th>LIKELIHOOD</th>
<th>SEVERITY (LS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>below 1%</td>
</tr>
<tr>
<td>2</td>
<td>1-5%</td>
</tr>
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<td>3</td>
<td>5-10%</td>
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<td>4</td>
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</tr>
<tr>
<td>5</td>
<td>above 20%</td>
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</table>

### SOCIETY

<table>
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<tr>
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<td>2.5</td>
<td>3</td>
</tr>
<tr>
<td>Chronic diseases become widespread in the developed world</td>
<td>4</td>
<td>3.5</td>
</tr>
<tr>
<td>US liability costs increase at 4x the rate of GDP growth, and spread rapidly to Europe and Asia. Capacity for global insurance is reduced, undermining investment and growth</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

### TECHNOLOGY

<table>
<thead>
<tr>
<th></th>
<th>LIKELIHOOD</th>
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<td>2</td>
<td>2-2.5</td>
</tr>
</tbody>
</table>
### ENVIRONMENT

<table>
<thead>
<tr>
<th>Likelihood</th>
<th>Severity (LS$^4$)</th>
<th>Score 1</th>
<th>Score 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>below 1%</td>
<td>2-10 billion</td>
<td>3.5</td>
</tr>
<tr>
<td>2</td>
<td>1-5%</td>
<td>10-50 billion</td>
<td>3.5</td>
</tr>
<tr>
<td>3</td>
<td>5-10%</td>
<td>50-250 billion</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>10-20%</td>
<td>250 billion-1 trillion</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>above 20%</td>
<td>&gt;1 trillion</td>
<td>2</td>
</tr>
</tbody>
</table>

- Extreme weather events linked to climate change will impact businesses and society at large (e.g. multiple tropical cyclones make landfall along the Gulf Coast, India, Bangladesh or China over a 10 year period)
- More frequent and severe heatwaves and droughts have harsh impacts on agricultural yields around the world
- Declining quality and quantity of water in several major watersheds leads to water shortages and increased prevalence of water-borne disease.
- Natural catastrophe: Category 5 tropical cyclone hits an economic centre such as Tokyo or southern Florida
- Natural catastrophe: A strong earthquake hits an economic centre such as Tokyo, Los Angeles or San Francisco
- Natural catastrophe: Extreme inland flooding of the Mississippi, Yangtze, Thames or Rhine rivers causes direct economic and human losses and serious disruption downstream
GHG Emissions for Select Countries, 2005

USA 7.2  China 7.0  Indonesia 3.1  Brazil 2.4  Russia 2.1  India 1.8  Japan 1.3  Germany 1.0  Canada 0.8  Mexico 0.7

The Greenhouse Gases

- Water vapour
- Carbon dioxide (CO₂)
- Methane (CH₄)
- Nitrous oxide (N₂O)
- Ozone (O₃)
- Sulphur Hexafluoride (SF₆)
Direct and Indirect GHG Emissions

http://www.ghgprotocol.org/
### Economics

<table>
<thead>
<tr>
<th>Event</th>
<th>Likelihood</th>
<th>Severity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rising and volatile prices create significant shortages for poor people globally (those whose consumption basket is more than 50% food)</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td><strong>Oil or gas prices rise steeply due to a major supply disruption (decreased global supply of 10% for several months)</strong></td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>An abrupt, major fall in the value of the US dollar over time with impacts throughout the financial system</td>
<td>3.5</td>
<td>3</td>
</tr>
<tr>
<td>Domestic social/political issues combine to slow Chinese growth to 6% or less (sustained over time)</td>
<td>3.5</td>
<td>4</td>
</tr>
<tr>
<td>Declining fiscal positions force multiple governments of wealthy countries to raise taxes, leading to economic stagnation</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>House and other asset prices collapse in the US, United Kingdom and continental Europe, reducing consumer spending and creating a recession</td>
<td>4.5</td>
<td>5</td>
</tr>
</tbody>
</table>
The Olduvai Theory of Industrial Civilization

http://lifeaftertheoilcrash.net/

The 26 Core Global Risks:
Likelihood and Severity ($)

- Pandemic
- Oil and gas price spike
- Asset price collapse
- Retrenchment from globalization (developed)
- Slowing Chinese economy (6%)
- Middle East instability
- Heatwaves & droughts
- Major fall in US$
- Refrenchent from globalization (emerging)
- Insecurity
- Extreme climate change related weather
- Failed & failing states
- Impaired basic infrastructure
- International terrorism
- Loss of freshwater
- Collapse of NPT
- Chronic disease, developed world
- Liability regimes
- Food
- Fiscal crises in advanced economies
- Interstate & civil wars
- Emergence of nanotechnology risks
- Extreme inland flooding
- NatCat: Earthquake
- NatCat: Cyclone
- Transnational crime, OIL breakdown
- Infectious disease, developing world
Why the interest in cleaner supply chains?

- Desire to cut energy costs
- Concern about regulation
- Competition for green customers
- Desire to boost productivity

Eight Steps to a Greener Supply Chain

1. Begin with a business model; look at the economics

2. Transportation as “low-hanging fruit”

3. LEED-certified buildings; energy-reducing initiatives

4. Packaging Reduction

Eight Steps to a Greener Supply Chain

5. Education and training
6. Carbon credits
7. Waste reduction
8. Recycling

Innovative Freight Practices

• Trip scheduling – reduce vehicles used and distance traveled

• Load matching – consolidate freight; reduce empty backhauls

• Idling reduction – reduce emissions and fuel consumption

• Vehicle operation and maintenance

• Driver training and awareness

Source: University of Manitoba Transport Institute (UMTI)
4C’s Approach

• Consolidation (When and where are there opportunities to consolidate movement and storage?)

• Cost optimization (What is our “total cost?”)

• Collaboration (How can we work together?)

• Compliance (What are the rules? What should the rules be?)

Source: University of Manitoba Transport Institute (UMTI)
Comprehensive Sustainability

Environment

Economy

Society

Sustainable practices

Community livability

Socio-economic equity

Source: Centre for Sustainable Transportation, Definition and Vision of Sustainable Transportation, October 2002.
little s; BIG S

• little s
  - economic
  - environmental

• Doing things right
  - e.g. idling reduction

• BIG S
  - Social
  - Economic
  - Environmental
  - Spiritual

• Doing right things

“In every deliberation we must consider the impact on the seventh generation ... even if it requires having skin as thick as the bark of a pine.”
- Great Law of the Iroquois
“Teach your children what we have taught our children; that the earth is our mother. Whatever befalls the earth befalls the sons of the earth. We are a part of the earth and it is part of us. This we know. The earth does not belong to us. We belong to the earth.”

“Only a radical reversal of our attitudes towards nature can help us. While it is comforting to see the nations of the world meet and begin to deal with our environmental catastrophe, we may even now be too late to change the conditions we have created.”

“Civilization as we know it is coming to an end soon. This is not the wacky proclamation of a doomsday cult, apocalypse bible prophecy sect, or conspiracy theory society. Rather, it is the scientific conclusion of the best paid, most widely-respected geologists, physicists, bankers, and investors in the world. These are rational, professional, conservative individuals who are absolutely terrified by a phenomenon known as global *Peak Oil*.”

http://lifeaftertheoilcrash.net/
The Color of Risk

Presentation for the 4th Annual Supply Chain Connections Conference

Planes, Trains & Hurricanes

May 13, 2008

Ian Seunarine, Logistics Manager
The Duha Group
Our Company...
Our Company…

Leaders in Color Sampling

*Products used by…*

- Retail Paint Industry
- Paint Manufacturers
- Automotive Paint Industry
- Other various color or texture specific industries
Our Company…

Product Samples

Take Home Chips
Color swatches for Color display racks
Our Company...

Fandecks

Color swatch tools for the retailer
Our Company…

Architectural Sets

Color swatches sets for professional designers and large sample requirements
Our Company...

Color Cards
Our Company...

Color Albums
Our Company...

Color Displays
Our Company...

The Duha Group of Companies

Full Ownership
- Canada 1949
- USA 1992
- Australia 1992

Joint Ventures
- Singapore 1994
- Mexico 1997
- China 2005

Partners
- France 2000
Our Company...

MARKETS SERVED 2007
950 Customers in over 100 Countries
Everyone Wants to Paint...A Good News Story?

Consumer Trends

1) Demand Is Up
2) Rebranding and New Selection for Consumers
3) Competitive Pricing for Product Lines
4) Easy Availability
5) Economical Way to Improve Immediate Environment
Everyone Wants to Paint... The Real Story

Industry Trends

- Mergers/ Acquisitions of Paint Companies
- Existing Competitors
- Big Box Store and DIY Impact
- Rising Cost of Raw Materials
- Beyond Value Added...
Our Future...

Secure Supply Chain to Mitigate Business Risk
Our Future...Supply Chain

Examples

European Accounts

Global Supply
Our Future...Supply Chain

Creative Ways to Drive Down Costs

Better Inventory Management

Single Source
Our Future...Supply Chain

What's Next...

Raise the Bar to Reduce the Risk

Introducing a New Factor in Supply Chain Management
Introducing…

Green
Eco-Friendly
Environmental
Sustainable
Why?

Save our Planet?

Future Generations?

Combat Climate Change?

Save Endangered Species?

Social Responsibility?

New Trend?
Why?

RISK!
Sustainable Risk...

Legislation
Market Share
Cost Control
Competition
Quality
Full Circle…

Our Market

Consumers
Industry

Dependency on a Strong Supply Chain

Future Strategy

Supply Chain to Next Level

Sustainability as Risk
Full Circle…

The Color of Risk

Thanks!
SUPPLY CHAINS IN A NOT-FOR-PROFIT, STABLE ENVIRONMENT

Presentation for
“Trains, Planes and Hurricanes”
University of Manitoba Transport Institute
Supply Chain Conference
May 14, 2008
INTRODUCTION

Purpose:
- To examine “Quadrant 3” supply chains
- To determine the effect of “Quadrant 3” conditions on supply chain configuration or operation
INTRODUCTION

I will:

- Show why the western grain system fits Quadrant 3
- Trace the effects of Quadrant 3 conditions on the supply chain
- Introduce Jane Jacobs
- Tie the threads together: What does this examination show us?
TOPIC #1

THE GRAIN INDUSTRY AS A “NON-COMMERCIAL” BUSINESS
1. THE GRAIN INDUSTRY AS A “NON-COMMERCIAL” INDUSTRY

I will argue that:

- the grain business is NOT “not-for-profit:
- it is “non-commercial”
- it was dominated by “non-commercial” organizations from the 1920s to the 1990s
- the Canadian Wheat Board is the most non-commercial of them all
1. THE GRAIN INDUSTRY AS A “NON-COMMERCIAL” INDUSTRY

How is the CWB “non-commercial”?

✦ it can’t lose money (govt. covers losses)
✦ it can’t fail or go out of business
✦ has a monopoly on its product
✦ govt. interest rates cover operating costs
✦ govt. pays bad debts
✦ govt. appoints 5 out of 15 directors
✦ govt. appoints CEO
1. THE GRAIN INDUSTRY AS A “NON-COMMERCIAL” INDUSTRY

IN ESSENCE: THE CWB IS “NON-COMMERCIAL” BECAUSE IT DOES NOT FACE THE DISCIPLINES OF THE MARKETPLACE
1. THE GRAIN INDUSTRY AS A “NON-COMMERCIAL” INDUSTRY

Why is the CWB “non-commercial”? 

CWB website:

“The CWB is modelled on … farmer owned cooperatives … This structure helps western Canadian farmers counter the market power of large international grain trading companies”
Why were the Pools “non-commercial”?

Murray Fulton:

“Cooperatives … have their own peculiar strengths, one of the most important being that they have supplied something that takes its logic from outside the market [that offers] social benefits to members.”
1. THE GRAIN INDUSTRY AS A “NON-COMMERCIAL” INDUSTRY

There is a deep ideological divide between “not-for-profit”/non-commercial and “for-profit”/commercial entities

Should markets prevail, or is intervention better?

Are market returns fair, or do the spoils go to the strong?

Do market bring innovation and efficiency, or injustice and exploitation?
1. THE GRAIN INDUSTRY AS A “NON-COMMERCIAL” INDUSTRY

The western grain industry saw a long and bitter debate between these positions, and the winners (the Pools and the CWB) placed social goals above economic ones.
H'YAR FOLKS! NO OTHER SHOW LIKE THIS ON EARTH. FOLKS BIN COMIN' FOR YEARS PLAY OUR GAME—FORTUNES MADE EVERY DAY. GIVE YOUR MONEY TO US.

MAIN ENTRANCE

THE LAST OF THE WILD WEST SHOWS
Exhibit VIII - 2
A Study of Business Regulation by Natural Causes.
1. THE GRAIN INDUSTRY AS A “NON-COMMERCIAL” INDUSTRY


Farm opinion “rested on a belief – diametrically opposed to the free enterprise tenets underlying the national policy – that the open or competitive market ought not to govern the marketing of grain.”
1. THE GRAIN INDUSTRY AS A “NON-COMMERCIAL” INDUSTRY

Justice Willard Estey (1999):

“Long standing policies and regulation contemplate” that the CWB perform two roles: a commercial role for “the sale of Board grain” and a social role concerned with “the welfare, financial and otherwise, of producers [involving] the administration of sociological support accorded the farmer through federal assistance programs.”
1. THE GRAIN INDUSTRY AS A “NON-COMMERCIAL” INDUSTRY

The pursuit of social goals affected policy:

🌟 The Crow’s Nest Pass rates, frozen from 1899 – 1984
🌟 Pools’ successful opposition to branch line abandonment, 1950s to 1980s
🌟 Price pooling shielding farmers from price fluctuations each year, 1940s – 2000s
🌟 Delivery quotas and contracts for equalizing market shares
1. THE GRAIN INDUSTRY AS A “NON-COMMERCIAL” INDUSTRY

... and influenced operational decisions:

🌟 During the 1950s and 1960s, the CWB taking unneeded grain into store to provide farmers with cash flow

🌟 Continuously moving unneeded grain into country elevators or to terminal positions to equalize delivery quotas or contract calls

🌟 The Pools keeping uneconomic elevators open, and cross-subsidizing losses
1. THE GRAIN INDUSTRY AS A “NON-COMMERCIAL” INDUSTRY

ALL THESE POLICIES AND OPERATIONAL PROCEDURES WERE DESIGNED TO THWART MARKET FORCES, AND TO IMPLEMENT SOCIAL GOALS
TOPIC #2

THE EFFECT OF A “NON-COMMERCIAL” ENVIRONMENT ON THE SUPPLY CHAIN AND ITS OPERATION
2. THE EFFECT OF THE “NON-COMMERCIAL ENVIRONMENT"

There are two negative effects of the non-commercial nature of the grain industry:

1. It creates inefficiencies
2. It impair effectiveness

In the case of the grain industry, these effects were massive
2. THE EFFECT OF THE “NON-COMMERCIAL ENVIRONMENT

Massive levels of inefficiency:

📅 1970: 30 years out of date, with most country elevators built in the 1920s and 1930s

📅 Hopper cars do not replace box cars until the 1970s and then only because the government buys them
2. THE EFFECT OF THE “NON-COMMERCIAL ENVIRONMENT”

Massive levels of inefficiency (continued):

🌟 1990: system moved from 1930s technology to 1960s technology
🌟 Rail car turnaround time the same as 1960s
🌟 Rail cars still originated 7 to 10 cars at a time (multiple car shipments still almost nil)
2. THE EFFECT OF THE “NON-COMMERCIAL ENVIRONMENT”

Massive levels of inefficiency (continued):

1990s: We finally get the bulk handling system that should have emerged in the 1960s and 1970s
2. THE EFFECT OF THE “NON-COMMERCIAL ENVIRONMENT”

Ineffective:

McKinsey consulting company, study for the three prairie provinces (1998):

“The Canadian logistics system for Board grains is not consistently able to get ‘the right product to the right place at the right time’, [with stocks in store in Vancouver being sufficient] “to satisfy, on average, [only] 67 percent of the requirements of customer vessels.”
2. THE EFFECT OF THE “NON-COMMERCIAL ENVIRONMENT”

Ineffective (continued):

Arthur Kroeger refers to ongoing monitoring by the Grain Transportation Agency (2000):

The GTA reports “document inefficiencies and logistics failures at all stages of the System from farm to vessel (the wrong grain, in the wrong place, at the wrong time), with no clear chain of accountability.”
2. THE EFFECT OF THE “NON-COMMERCIAL ENVIRONMENT.

THE INESCAPABLE CONCLUSION:

60 YEARS OF EXCESSIVE EMPHASIS ON “LOGIC FROM OUTSIDE THE MARKET” (FULTON) AND “SOCIOLOGICAL SUPPORT ACCORDED [TO] THE FARMER” (ESTEY) LED TO MASSIVE INEFFECTIVENESS AND POOR PERFORMANCE.
TOPIC #3

JANE JACOBS
2. THE EFFECT OF THE “NON-COMMERCIAL ENVIRONMENT”

What Systems of Survival is all about:

“This book explores the morals and values that underpin ... working life. Like other animals, we [take] what we can use, and appropriate territories. But ... we also produce for trade. Because [of] these two radically different ways of dealing with our needs, we also have two radically different systems of morals and values – both ... valid and necessary.”
3. JANE JACOBS

Key points from *Systems of Survival*:

- Human occupations fall into two categories: (1) commercial; (2) guardian
- Each operates by a different set of values
- Each value set is appropriate to the roles each category has to fulfil
- Neither is “wrong” and a healthy society needs both occupational set with their respective values
3. JANE JACOBS

While government is the largest “guardian” organization, any entity that is concerned with social values is also “guardian” in nature:

- Governments guard territories
- Environmental groups guard environment
- Churches guard right beliefs
- Unions guard workers
- The Pools and CWB guard farmers
3. JANE JACOBS

A different supply chain example:

❖ Two conflicting values:
  ◆ Commercial: Be thrifty
  ◆ Guardian: Be ostentatious

❖ IATA position to NTAR panel: “we need adequate airports, not Taj Mahals”

❖ Beijing’s new airport (in common with most) is very ostentatious.
3. JANE JACOBS

Key commercial and guardian values that explain the disputes in the grain industry and the behaviour of the Pools and the CWB:

🌟 Commercial: “Be efficient”
🌟 Guardian: “Dispense largesse”
3. JANE JACOBS

How these play out:

- Wal Mart, a commercial enterprise, values efficiency above all else
- The Pools and CWB, which serve social goals, do things like:
  - keep losing elevators open to preserve local communities and provide service;
  - take unneeded grain into storage to equalize delivery opportunity.
3. JANE JACOBS

The point:

🌟 For a commercial enterprise in a competitive setting, efficiency must be paramount, otherwise you jeopardize your competitive position

🌟 For an organization with social goals, efficiency comes at a cost which can be too high to pay
TOPIC #4

TYING THE THREADS TOGETHER
4. TYING UP THE THREADS

The obvious conclusion:

⭐️ The CWB and the Pools put social goals ahead of economic goals and messed up the grain supply chain “big time.”

⭐️ This is the conclusion that most critics of the western Canadian grain industry come to.

⭐️ It is an ideologically conditioned view and far too simple.
4. TYING UP THE THREADS

Transport has always had associated social goals:

- The CPR and the development of Canada
- The air industry develops with govt. support (still needs it for new aircraft)
- Ports and national security (remember the Dubai port management company flap)
- Roads: rural and urban
- Ocean transport in a post 9/11 world
4. TYING UP THE THREADS

Efficiency is not everything and social goals have their place:

Edward Luttwak, historian and writer on military strategy:

“I believe that one ought to have only as much market efficiency as one needs, because everything we value in human life is within the realm of inefficiency – love, family, attachment, community, culture, old habits, comfortable old shoes.”
4. TYING UP THE THREADS

From Luttwak’s and Jacobs’s points of view, one has a more charitable view of the CWB and the Pools:

🌟 The social and “non-commercial” goals of these organizations are as valid as the railways’, the commercial grain companies’ and the Western Canadian Wheat Growers’ goal of efficiency.

🌟 (The way of implementing them is another issue.)
4. TYING UP THE THREADS

So what can we conclude?

That the major risks associated with operations in this quadrant are inefficiency and lack of effectiveness.

That, despite the downsides, the social goals that are embodied by not-for-profit organizations are valid and worthy.

That the incredible challenge is to find the operational balance that meets both goals.
Agenda

• Canadian Wheat Board (CWB)
• Global Competition
• CWB Supply Chain
• Supply Chain Management
Canadian Wheat Board (CWB)
CWB Overview

• Maximize returns to Western Canadian wheat, durum, and barley farmers.

• CWB represents 75,000 farmers in Western Canada.

• Governance: 15 directors (10 elected farmers).

• Headquarters in Winnipeg, Manitoba
  - offices in Beijing, Tokyo, Vancouver, Airdrie (Alberta), Saskatoon

• Farmers pay for CWB operations
CWB Overview

• Global Reach: product marketed to 70 countries around the world.

• Sales revenue in excess of 7 billion dollars.

• Supply chain spend of 950 million dollars.
Global Competition
Growing Region Distance from Water
(kms from center of growing region to port)

- W. Canada: 1,450
- USA: 650 - 1,450
- Argentina: 350
- France: 320
- Russia: 675
- Ukraine: 340
- Australia: 160-280
CWB Supply Chain
CWB Supply Chain

75,000 Farmers
17.5 MMT

337 Grain Terminals

CWB Market Development, Branding, and After Sales Service

190,000 Railcars
CP and CN
460 Vessels
70 Countries

Prairie strong, worldwide
Supply Chain Management
Shrinking Pipeline
(Prince Rupert Example)

Farmer Storage
9,000,000 MT

Country Elevator Storage (CN only)
151 Elevators
2 305,980 MT

Prince Rupert Storage
160 000 MT

Pull
CN Mountain Sub
CP Mountain Sub
Opportunities/Challenges

• Proactive Approach
  – Capacity Risk
  – Stock Risk
  – Demand Management
  – Performance Management

• Reactive Approach
  – Timing of event
  – Magnitude of event
Supply Chain: Challenges and Opportunities

Questions?
Not-for-profit, Interrupted - the case of humanitarian logistics

Gyöngyi Kovács
Email: kovacs@hanken.fi
Why humanitarian logistics?

• Disaster relief operations consist to 80% of logistical efforts (van Wassenhove, 2006; IFRC, 2006)
• Impact
  - Saving lives, alleviating suffering
  - The speed of humanitarian aid after a disaster depends “on the ability of logisticians to procure, transport and receive supplies at the site of a humanitarian relief effort”
• Learning from the most resilient supply chain
  - Managing disruptions is at the core of humanitarian logistics
  - Flexibility: activation of resources
• Aid is an industry
• Disruptions affect your supply chain
The Aid Industry

Source: OECD - DAC.
Definitions

• Disaster =
  - “a disruption that physically affects a system as a whole and threatens its priorities and goals” (van Wassenhove, 2006, p.476).

• Disaster relief =
  - “design the transportation of first aid material, food, equipment, and rescue personnel from supply points to a large number of destination nodes geographically scattered over the disaster region and the evacuation and transfer of people affected by the disaster to the health care centers safely and very rapidly” (Barbarosoğlu et al., 2002, p.118).

• Humanitarian logistics =
  - "the process of planning, implementing and controlling the efficient, cost-effective flow and storage of goods and materials, as well as related information, from point of origin to point of consumption for the purpose of meeting the end beneficiary's requirements" (Thomas, 2005, p.60).
Challenges depend on
- Type of disaster
- Probability and regularity of the disaster
- Type of organisation (national / international)
- Region-specific factors

van Wassenhove (2006)
## Disasters: case Ghana

<table>
<thead>
<tr>
<th></th>
<th>Natural</th>
<th>Man-made</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sudden-onset</td>
<td>Earthquake</td>
<td>Flood</td>
</tr>
<tr>
<td></td>
<td>Landslide</td>
<td>Bush fire</td>
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<td></td>
<td></td>
<td>Industrial fire</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Water pollution</td>
</tr>
<tr>
<td>Slow-onset</td>
<td>Pests/Insects</td>
<td>Drought</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Soil erosion</td>
</tr>
<tr>
<td></td>
<td>Coastal erosion</td>
<td>Influx of refugees</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Returnees</td>
</tr>
</tbody>
</table>
Disaster management cycle

<table>
<thead>
<tr>
<th>Characteristics of HL</th>
<th>Relief supply chains</th>
</tr>
</thead>
<tbody>
<tr>
<td>The main aim</td>
<td>Alleviating the suffering of vulnerable people</td>
</tr>
<tr>
<td>Actor structure</td>
<td>Stakeholder focus with no clear links to each other, dominance of NGOs and governmental actors</td>
</tr>
<tr>
<td>3-phase setup</td>
<td>Preparation, immediate response, reconstruction.</td>
</tr>
<tr>
<td>Basic features</td>
<td>Variability in supplies and suppliers, large-scale activities, irregular demand, and unusual constraints in large-scale emergencies.</td>
</tr>
<tr>
<td>Supply chain philosophy</td>
<td>Supplies are “pushed” to the disaster location in the immediate response phase. Pull philosophy applied in reconstruction phase</td>
</tr>
<tr>
<td>Transportation and infrastructure</td>
<td>Infrastructure destabilised and lack of possibilities to assure quality of food and medical supplies</td>
</tr>
<tr>
<td>Time effects</td>
<td>Time delays may result in loss of lives</td>
</tr>
<tr>
<td>Bounded knowledge actions</td>
<td>The nature of most disasters demands an immediate response, hence supply chains need to be designed and deployed at once even though the knowledge of the situation is very limited</td>
</tr>
<tr>
<td>Supplier structure</td>
<td>Choice limited, sometimes even unwanted suppliers</td>
</tr>
<tr>
<td>Control aspects</td>
<td>Lack of control over operations due to emergency situation</td>
</tr>
</tbody>
</table>
Actors in HL

- Questions
  - Who is the customer?
  - Who are the suppliers?
  - How are material / information / financial flows interlinked and co-ordinated?
Suppliers and customers

• The “customer”
  - Beneficiary / group of beneficiaries / society at large
  - Donor
  - Government

• The “supplier” / humanitarian
  - Governmental organisations (GOs)
  - Inter-governmental organisations (IGOs) and supra-governmental organisations
    • E.g. UN agencies, EU-funded organisations
  - Non-governmental organisations (NGOs)
    • E.g. “BINGOs” (IFRC, ICRC, Care, MSF, Save the Children, World Vision, CRS, IOM, OXFAM, ADRA, …)
Flows and processes

• Material flows
  - Push versus pull philosophies (needs assessment)
  - Efficient versus responsive supply chains
  - Question of co-ordination of actors in the supply chain, and among humanitarians

• Information flows
  - Co-ordinators as information disseminators
  - Maps, scenario planning, simulations

• Financial flows
  - Special aspects: financial supplier is not the end customer
  - Conditioned and project/disaster-based (ear-marked donations)
  - Non-financial donations (in-kind donations; incl. unsolicited supplies)
Case: Donation to Zambia

- **Giving hands**: Purchase
- **Alliance of Children Everywhere**: Donation I
- **Food supplier Basel (CH)**: Material flow (baby formulae)
- **House of Moses Lusaka (Zambia)**: Donation II
- **Beneficiaries**
- **Other recipients**
Challenges of in-kind donations

- Case food relief to Zambia
  - Basel to Lusaka
- Routing
  - Transport infrastructure
  - Political situation impacting on routing
- Transportation costs (>50%)
- Customers clearance (time)
- Dietary and health requirements
- Impact on local economy
Funding and logistics

- Disaster-bound funding affects total logistics costs
  ⇒ Purchasing costs (no preparation, speculative purchases)
  ⇒ Modal choice (no possibility to build infrastructure => air lifts)
- Ear-marked funding (cannot be used for other purposes) affects
  ⇒ Prioritisation of beneficiaries (and projects, disasters)
    ⇒ Incl. inventory turnover, capital binding of inventory
  ⇒ Capacity utilisation of vehicles (fill rate), personnel
  ⇒ Economies of scale
- In-kind donations affect
  ⇒ Possibility of needs-based relief (push vs. pull supply chains)
  ⇒ Stock-keeping units (e.g. unsolicited supplies)
  ⇒ Local economies
- Branding of items affect
  ⇒ Postponement strategies
  ⇒ Cross-utilisation of items
  ⇒ Prioritisation of beneficiaries
Co-ordination

• Inter-agency co-ordination
  - Communities of practice: ReliefWeb, UN Logistics Cluster, UNJLC
  - Capacity-sharing (transportation, warehouses, purchasing consortia)
  - Co-ordination /prioritisation of deliveries
  - Information sharing – of needs assessments, maps…

• Inter-governmental co-ordination
  - Customs clearance

• Supply chain co-ordination
  - Framework contracts
  - Prepositioning of stock
  - TPL partnerships

• Limits
  - Question of neutrality (e.g. w/defence)
  - Competition / diversification

• Levels: Co-ordination, integration, collaboration
Diversification in the Logistics Cluster

Within UN: e.g. WFP, WHO, UNHCR

<table>
<thead>
<tr>
<th>Area of Activity</th>
<th>Cluster Lead</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service provision:</td>
<td></td>
</tr>
<tr>
<td>• Logistics:</td>
<td>WFP</td>
</tr>
<tr>
<td>• Emergency</td>
<td>OCHA (Process Owner), UNICEF (Common Data Services) WFP (Common Security Telecommunications Services)</td>
</tr>
<tr>
<td>• Telecommunications:</td>
<td></td>
</tr>
<tr>
<td>Relief and assistance to beneficiaries:</td>
<td></td>
</tr>
<tr>
<td>• Emergency Shelter:</td>
<td>UNHCR (for conflict-generated IDPs) IFRC (Convener for Emergency Shelter Cluster in natural disasters)</td>
</tr>
<tr>
<td>• Health:</td>
<td>WHO</td>
</tr>
<tr>
<td>• Nutrition:</td>
<td>UNICEF</td>
</tr>
<tr>
<td>• Water, Hygiene and Sanitation</td>
<td>UNICEF</td>
</tr>
<tr>
<td>Cross cutting concerns:</td>
<td></td>
</tr>
<tr>
<td>• Early Recovery:</td>
<td>UNDP</td>
</tr>
<tr>
<td>• Protection:</td>
<td>UNHCR (for conflict-generated IDPs), UNHCR, UNICEF and OHCHR (for natural disasters)</td>
</tr>
<tr>
<td>• Camp Coordination and Camp Management</td>
<td>UNHCR (for conflict-generated IDPs), IOM (for natural disaster)</td>
</tr>
</tbody>
</table>
**HUMLOG Group**

- International research network in humanitarian logistics ([www.humloggroup.org](http://www.humloggroup.org))
- **HUMLOG Group:**
  - Finland: Hanken*, National Defence University
  - Ghana: Kwame Nkrumah University of Science and Technology
  - Norway: Norwegian School of Management, Norwegian Staff and Command Defence College,
  - Sweden: Jönköping International Business School
  - UK: Cardiff University, Cranfield University
  - United Nations Joint Logistics Centre (UNJLC)
  - National and international NGOs

- *Project secretariat at the HumLog Institute (Humanitarian Logistics and Supply Chain Research Institute) at HANKEN*
HUMLOG Group aim:
To research the area of humanitarian logistics in disaster preparedness, response and recovery with the intention of influencing future activities in a way that will provide measurable benefit to persons requiring assistance.

Core research areas
- Funding (relation between financial and material flows)
- Co-ordination (among humanitarian actors, and in humanitarian supply chains)
- Assessment (needs assessment: from push to pull systems)
- Measurement (performance of humanitarian supply chains)

Examples of ongoing subprojects:
- Collaboration with 3PLs and philanthropists (with the UN Logistics Cluster)
- Organisational change at the IFRC
- Sea-basing in humanitarian logistics
- Gender awareness in humanitarian logistics (with WISE)
HUMLOG activities

• Research
  - Journal special issues (IJRAM, IJSTM, MRN…), journal scopes (IJPDLM)

• Teaching
  - MSc modules, 2 PhD courses during 2007/8
    - *next joint MSc course Apr 2009, joint PhD course Aug 2009*

• Practitioner workshops
    - *next Assessment (Uni Cardiff, Oct 2008), Sustainability (Oslo Oct 2008)*
Contacts

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Humanitarian Logistics
The Art and Science of the Impossible

Winnipeg, May 13, 2008
Don Shropshire, Cdn. Red Cross
Presentation Outline

• Setting the context
  – Red Cross
  – Domestic & International Operations

• Opportunities to serve

• Discussion
Our Mission

To improve the lives of vulnerable people by mobilizing the power of humanity in Canada and around the world.
Fundamental Principles of the International Red Cross & Red Crescent Movement

- Impartiality
- Independence
- Neutrality
- Voluntary Service
- Humanity
- Universality
- Unity
5000 responses a year

Emergency
lodging

Emergency
clothing

Emergency
feeding

Families
reunited

Coordination
of $, HR &
information

Personal
services
More ‘natural’ disasters – less deadly

- Disasters nearly triple since 1970s
- Numbers affected more than triple
- Deaths drop 70% since 1970s

Source: Centre for Research on the Epidemiology of Disasters, Belgium (CRED)
TRIGGERING LINKS OF EARLY WARNING, ALERT, AND MOBILIZATION

- National Society
- Early Warning
- Mobilization
- Required Support
- Regional Logistics
- Federation

Triggering links flow from National Society to Early Warning, then to Mobilization in a cascading manner, eventually leading to Required Support and Regional Logistics. The Federation acts as an upper-level coordination point.
1. Bridge between disaster preparedness and response, between procurement and distribution, and between HQ and field.

2. Crucial to the effectiveness and speed of response for major humanitarian programs, such as health, food, shelter, water and sanitation.

3. Repository of data that can be analyzed to provide post-event learning.

(Fritz Institute)
CRC delivered medical kits and food parcels to quarantined families;
• CRC worked with St. John Ambulance;
• 7,600 volunteer hours;
• 3,800 home visits to 10,000 quarantined people
B.C. Forest Fires 2003

Provide for basic needs
• Registering evacuees
• Reconnect evacuees
• Coordinated volunteers
• Personal & Community Recovery Assistance
Ontario Power Blackout 2003

- Cooling centres
- Accommodations for grounded airline passengers
- Distributed food & vouchers
Peterborough Floods –
July 14, 2004

- 200 people evacuated
- Red Cross shelters
- Assessed damages
- Distribute over 4000 clean-up kits
- Raised over $600,000
Kashechewan Evacuations
October 2005

• 1900 people, boil water advisory for weeks

• Evacuate half of the residents to several northern communities

• Reception and inquiry services, shelter and clothing
Hurricane Katrina

- The scale of this disaster was unprecedented but they had exercised for a situation similar to this event. It was not enough.

- 20 times larger than any previous Red Cross mission. It did not have the logistics capacity sophisticated enough to deal with a catastrophe of Katrina’s size.
Katrina August 2005

• Not prepared

• Massive communication failure

• Coordination lacking

• Lack of law enforcement and lack of effective public communications led to civil unrest and further delayed relief.
During a heat alert:
- Distribute water to the homeless population;
- Home visits to elderly & vulnerable clients.

During an extreme heat alert:
- Operated 3 cooling centres.
Flood damage to cost millions

Nearly 1,000 NBers have applied to province for disaster relief

Damage from the flooded St. John River is expected to cost tens of millions of dollars.

As river water continues to recede in the province, officials say it has become apparent there is more damage than originally predicted.

"Patience is required on the part of those anxious to get back home," said Dick Isabelle of the Department of Public Safety.

Isabelle said more than 800 people had applied to the provincial government for disaster relief by yesterday afternoon. That number was expected to top 1,000 last night.

"It's extremely difficult to guess how much the total damage will cost," Isabelle said. "However, there was about $3 million in damages in the 2005 flood and the amplitude of this flood is much greater."

As of yesterday, the inspection teams had responded to a total of 150 houses in northwestern parts of the province. They've been inspecting homes since Sunday.

Isabelle said the process is taking longer than expected because of the extent of the damage.
This chart represents a small fraction of NGO’s/implementing partners and will change with each disaster
*Slide adapted from USAID/ Office of Foreign Disaster Assistance
Humanitarian Logistics Supply Chain

- Emergency Stocks
- Suppliers
- International Suppliers
- International Emergency Stocks

- DND Air Transport
- Freight Forwarder/ Charter
- Donated Air Freight

- Relief Operations
- Disaster Victims
(1) Preparedness
- Capacity to deploy
- Emergency Stocks
- Personnel Roster
- Emergency Contacts
- Supplier Database
- Training

(2) Response
- Rapid coordination
- Authorizations
- Rapid Deployment
- Movement tracking
- Situation Reports

(3) Project Recovery
- Re-Stocking
- Reporting
- Expense recovery
- Debriefing
- Review Lessons
Mass distribution
– flexible distribution channels
Remote access
## Logistics Coordinator, Job Description

### Profile
- Experience in staff management, project follow up, **security management (land mines knowledge)**
- Well organized and rigorous
- Team spirit, good communication qualities & high sense of diplomacy
- Good general knowledge in IT, mechanic, radio & satellite communications
- 18 months of logistic field experience on 2 missions.
- English and Spanish

### Objectives
- Coordination of logistics at national level
- Implementation and definition of the logistic processes at mission level
- Validation of the logistic needs (HHRR, material, financial means)
- Analysis, planning, follow up and evaluation of the logistics in the mission
- Human resources management
- Ensure the viability of the propose measures
- Coordinates with other member of coordination team
- Emergency response - Representation for in-kind donations with donor agencies such as WFP, Unicef
- Rehabilitation and maintenance
Potential Collaboration with SCL Community

- Supply chain management expertise
- Logistics networks
- Personnel (RWTC)
Final Thoughts

- We can’t stop all disasters but ....
  - Preparedness & Mitigation is within our control

- We can only succeed if we partner:
  - Governments;
  - Relief agencies;
  - Corporate sectors;
  - Affected community
Myanmar cyclone toll climbs to nearly 22,500

BANGKOK: The death toll in a powerful cyclone that struck Myanmar three days ago rose to 22,500 Tuesday and foreign governments and aid organizations began mobilizing for a major relief operation.

The death toll is the latest in a steadily escalating official count since the Cyclone Nargis struck early Saturday, devastating much of the fertile Irrawaddy River delta and the nation's major city, Yangon.

At a news conference in Yangon, the minister for relief and resettlement, Maung Maung Swe, said 41,000 people were still missing in the cyclone, which triggered a surge of water inland from the sea.

"More deaths were caused by the tidal wave than the storm itself," he said, in the first official description of the destruction. "The wave was up to 12 feet (3.5 meters) high and it swept away and inundated half the houses in low-lying villages. They did not have anywhere to flee."
Human-caused disasters

- Halifax Wrecked
- Polytechnique Montreal
- Disaster sites
- Airplane crash
Health emergencies

- Pandemics
- SARS
 Sept. 11, 2001

U.S.-bound aircraft diverted to Halifax
Canadian Red Cross
Croix-Rouge canadienne

Risks rising globally

Myanmar cyclone toll climbs

BANGKOK: The death toll in a powerful cyclone that struck Myanmar three days ago rose to 22,500 Tuesday and foreign governments and aid organizations began mobilizing for a major relief operation.

The death toll is the latest in a steadily escalating official
Disaster frequency

In Canada

Number of Disasters

1900-1909: 11
1910-1919: 21
1920-1929: 24
1930-1939: 22
1940-1949: 26
1950-1959: 38
1960-1969: 59
1980-1989: 129
1990-1999: 156

10 Year Period
More ‘natural’ disasters – less deadly

- Disasters nearly triple since 1970s
- Numbers affected more than triple
- Deaths drop 70% since 1970s

Source: Centre for Research on the Epidemiology of Disasters, Belgium (CRED)
Emerging risks

• Geo-political, security
• Health emergencies
• Climate change-severe weather
• Geological disasters
Risks to security

Virginia Tech death toll set at 33
BLACKSBURG, VA.
In the deadliest campus shooting in U.S. history, 33 people lost their lives on the Virginia Tech campus Monday.

Seung-hui Cho, a 23-year-old student and gunman, bloodied the air with a hail of bullets during a shooting spree and two hours later, inside an academic building, killing 33 people.

The brutal scene ended when police stormed the building, although the gruesome afternoon went on for hours.

In addition to the 33 deaths, eight students were wounded in the shooting.

Canadians fifth on al-Qaeda hit list

Canadians are in the top five on the list of preferred targets found in an al-Qaeda terrorist manual. The 11-page manual, titled Targeting the Cities, specifies which people to attack in specific nations, as well as setting out a general hit list.

Overall, Canadians are ranked fifth on the list of people to kill, which is topped by Americans and Britons, followed by Spaniards and Australians.

The list also ranks people according to their occupations, putting businessmen, bankers and economists at the top. Diplomats, politicians and scholars are more important than soldiers, the list says. Tourists are ranked last.
Health emergencies

Is SARS spreading through Canada, and particularly Toronto, where some have not traveled in Asia? The Canadian Red Cross is warning travelers to stay safe and calm.

Is SARS an agent of bioterrorism? An outbreak of SARS is the result.

Making Sense of SARS

The virus, still rampant in Asia, now threatens Canada. How to stay safe — and calm — in the meantime.

Island goose had avian flu

West Prince bird that died sent to federal agency to see if H5 avian flu was the cause of death.

By the Canadian Press and The Guardian

A domestic goose that died in western Prince Edward Island earlier this week tested positive for an H5 avian flu virus, the Canadian Food Inspection Agency confirmed Friday.

Samples are being sent to CFIA’s National Centre for Foreign Animal Diseases in Winnipeg so that confirmatory tests can be run and the information shared with provincial and federal wildlife officials.

H5 avian flu causes poultry to become ill, but it’s not always fatal. The bird deaths are not unusual.

Health authorities are urging farmers to have their birds tested regularly for the virus. They said there’s no evidence it has spread to people.

Canadian farmers and processors have been asked to hold off on shipping certain products until the situation is resolved.

MAD COW DISEASE

Mad cow disease found in Alberta

A case of mad cow disease in Alberta has prompted the Agriculture Department to impose a temporary ban on Canadian beef imports.

MAD COW DISEASE

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West Nile Virus

The disease is spreading across the United States and Canada.

Canadian beef supports 135,000 jobs and $5 billion annually. Canada is the world’s largest beef exporter.

About 4 million cattle, or 5%, are in Alberta.
Preparedness & Business Continuity Management
The solution

- Mobilize the power of humanity, in Canada and around the world.
Final Thoughts

We can’t stop all disasters but ….
  – Preparedness & Mitigation is within our control

• We can only succeed if we partner:
  – Governments;
  – Relief agencies;
  – Corporate sectors;
  – Affected community
# Potential Collaboration with SCL

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If you would like more information please contact us

don.shropshire@redcross.ca

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