

NATIONAL UNIVERSITY OF SINGAPORE
School of Business
Department of Decision Sciences

DSC4215 Supply Chain Visualization and Actionable Intelligence

Lecturer: Keith B. Carter

Session: Semester II, 2014/2015

Curriculum For Supply Chain Visualization and Actionable Intelligence

Successful supply chain visualization projects require: A business problem, validated data, visualization for initial insights, and statistical analysis for predictive insights.

Students will glean insights from real world data, answer strategic business questions, create an Information Strategy for Supply Chain, Visualize and monetize Big Data.

Real data sets from supply chain, retail, and social media will be placed in cloud technology like Google or Amazon. The students will use state-of-the-art tools to create amazing visualizations including SAP Lumira, Qlikview, Tableau, SVG, NetNode, and others.

Practically, students will also learn about types of data available in a typical corporation, how this data maybe collected, shortcomings, bureaucratic/company's cultural issues.

In this era of entrepreneurship and social responsibility we will also look at how startups/NGOs can visualize supply chain opportunities to attract and serve customers.

To round out the course we will review the ethical and legal considerations of acquiring and using certain types of data.

At the end they will develop the next generation of business analytics using cross-industry data mashups.

The skills learned will be usable in other industries and the core concepts are technology agnostic.

Learning Outcomes:

Building on supply chain and analytics knowledge of prior courses, this course will enable students to:

- Develop a vision and mission for analytics actionable intelligence
- Define strategic business questions
- Visualize multi-department data and end-to-end value-chain
- Acquire data from internal and external sources
- Support the Sales & Operations Planning process with facts
- Innovation techniques to visualize data
- Identify business risks and opportunities found through visualization
- Storytelling to provide insights on actions to be taken

Assessment Methods

Individual Assignments	50%
Midterm	20%
Final Group Project	30%

Course Schedule & Contents

Session	Lecture Topics	Readings and Assignments
1	Overview of Supply Chain Visualization and Actionable Intelligence - Vision of Actionable intelligence for Supply Chain: What does "good" look like	Homework(HW): Introduction Slide Initial Visualization Review Read: Actionable Intelligence Chapter 1
2	Strategic Business Question - Discovery of the Business Situation: Understanding the business needs first and prioritizing analysis with limited resources of time and people.	HW: Start visualization software Online Training Book: Assigned in class
3	Where Are We Today? - Benchmarking - Creating a Foundation of Data: Acquiring data, verifying accuracy, organizing it, sharing it safely - Visualization: The right chart to tell a clear, concise, impactful story	HW: Benchmark selected industry Book: Assigned in class
4	How To Win? - Delivering Business Results: - Embedding Intelligence into the business process Seizing opportunities and avoiding risks	HW: Book: Assigned in class
5	Bringing Concepts Together	No assignment, prepare for mid-term

	<ul style="list-style-type: none"> - Linking Supply Chain improvements with Financial results - Calculating the benefit of Actionable Intelligence <p>Mid-term Preparation</p>	
6	In-class midterm	HW: Book: Assigned in class
7	Continuous Improvement <ul style="list-style-type: none"> - Actionable Intelligence Case 1 	Individual assignment: - Case work
8	Dashboards and Monetizing Results <ul style="list-style-type: none"> - Review Actionable Intelligence Case 1 - Actionable Intelligence Case 2 	Individual assignment: - Case work
9	Social Media and Geo-tagging <ul style="list-style-type: none"> - Review Actionable Intelligence Case 2 - Final Project Start 	Individual assignment: - Case work
10	Startups/NGOs and Actionable Intelligence <ul style="list-style-type: none"> - Gaining benefits fast and cheap from the start 	Group assignment: Final project work
11	Understanding the transaction systems behind the data	Group assignment: Complete Final Project documents
12	Final Case Reviews and in-class presentations	
13	Final Case Reviews and in-class presentations continued	

Experiences Students Will Be Exposed To:

Examples of data visualizations that may be covered include:

- Supply chain supply and demand to identify opportunities to place stock in the right locations

- Retail store performance to optimize floor space usage
- Product complexity analysis
- Geo-tagging and geo-fencing analysis to track inventory

Examples of intelligence strategy implementation:

- Align intelligence strategy with the corporate strategy of an FMCG or finance company
- P&G and Walmart's data lab
- Deloitte, KPMG, Accenture best practices