

NATIONAL UNIVERSITY OF SINGAPORE

School of Business

Department of Decision Sciences

**DSC4215 Supply Chain Visualization and Actionable Intelligence**

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**Session:** Semester II, 2015/2016

**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 a state-of-the-art Business Intelligence Software, Qlikview, to create amazing supply chain visualization. In the process, students will learn about the critical elements how to make visualization succeeds in telling a convincing story. Practically, students will also learn about types of data available in a typical corporation, how this data may be collected, shortcomings, bureaucratic/company's cultural issues.

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

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

## **Final Group Project**

Each project team is required to design a visibility of end to end value chain using Qlikview that providing business insights and answer strategic business questions for their own designated users. The topic should be relevant to supply chain, retails and social media. Examples would include supply and demand planning, inventory analysis, pricing strategy, plant locating, production scheduling, and throughput analysis. Project will be up to the creativity of project team, but must be able to allow users to get a clear picture of the current state they are in and what they should do to move forward. A good way to think of this would be:

- What is the current situation? (Where We Are Today?)
- What needs to be changed? (How to Win Tomorrow?)
- What are the recommendations?
- What are the monetize opportunities?
- What are supply chain opportunities?

Each team is recommended to source a business problem and obtain validated data for the project. Bonus marks will be provided for receiving data from external business partners/companies. For the project, students are required to deliver the following:

- Lean Canvas
- Qlikview Tool
- Storyboard/Infographic
- Presentation

## **Experiences Students Will Be Exposed To:**

Examples of data visualizations that may be covered include:

- Supply and demand to identify opportunities to place stock in the right locations
- Retail store performance to optimize floor space usage
- Product complexity analysis

Examples of intelligence strategy implementation:

- Aligning intelligence strategy with the corporate strategy of an FMCG or finance company

## **Required Text**

Actionable intelligence: a guide to delivering business results with big data fast!

**Author: Carter, Keith B.**

## **Course Outline**

**Week 1:** 11 Jan 2016 – 15 Jan 2016

**Lecture Topic: Overview of Supply Chain Visualization and Actionable Intelligence**

- Vision of Actionable intelligence for Supply Chain: What does “good” look like.
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**Week 2:** 18 Jan 2016 – 22 Jan 2016

**Lecture Topic: Strategic Business Question**

- Discovery of the Business Situation: Understanding the business needs first and prioritizing analysis with limited resources of time and people.
- Qlikview Introduction
- Final Project Introduction

**Read**

- Actionable Intelligence Chapter 1 & 2

**To do**

- Set up Qlikview on laptops

**Individual Assignment Due (Introduction slide & Initial Qlikview Review)**

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**Week 3:** 25 Jan 2016 – 29 Jan 2016

**Lecture Topic: Where Are We Today?**

- 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
- Design Thinking and Infographic

**Read**

- Chapter 3
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**Week 4:** 1 Feb 2016 – 5 Feb 2016

**Lecture Topic: How to Win?**

- Delivering Business Results
- Embedding Intelligence into the business process
- ROI Model
- Using Qlikview to create visualization
- Seizing opportunities and avoiding risks

**Read**

- Chapter 4

**To do**

**Individual assignment due (Article Summary OR Infographic)**

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**Week 5:** 8 Feb 2016 – 12 Feb 2016

**Lecture Topic: Bringing Concepts Together**

- Linking Supply Chain improvements with Financial results
- Calculating the benefit of Actionable Intelligence
- Talk by Google (Guest Speaker)

**Read**

- Chapter 5 & 6

**To do**

**Group Project Proposal Due**

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**Week 6:** 15 Feb 2016 – 19 Feb 2016

**Lecture Topic: Continuous Improvement and Governance**

- Actionable Intelligence Case 1
- Lean Business Canvas

**Read**

- Chapter 7 & 8

**To do**

**Individual Assignment Due (Create Actionable intelligence Tool)**

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**Recess Week: 20 Feb 2016 – 28 Feb 2016**

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**Week 7:** 29 Feb 2016 – 4 Mar 2016

**Lecture Topic: Tying It All Together**

- Recap Concepts Learned

**Read**

- Chapter 9
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**Week 8:** 7 Mar 2016 – 11 Mar 2016

**In-Class Midterm**

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**Week 9:** 14 Mar 2016 – 18 Mar 2016

**Lecture Topic: Next Frontiers: Social Media and Map**

**Read**

- Chapter 10
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**Week 10:** 21 Mar 2016 – 25 Mar 2016

**Lecture Topic: Startups/NGOs and Actionable Intelligence**

- Gaining benefits fast and cheap from the start

**Read**

- Chapter 11
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**Week 11:** 28 Mar 2016 – 1 Apr 2016

**Wrap-up, Clean-up, and Review**

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**Week 12:** 4 Apr 2016 – 8 Apr 2016

**Final Project Reviews and Presentations**

**Final Project Due**

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**Week 13:** 11 Apr 2016 – 15 Apr 2016

**Final Project Reviews and Presentations (Continued)**

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