# TIM 125/225 MOT II: Homework 5

**Cycle and Safety Inventory**

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**TIM-125/225 Course website:** <https://tim125-winter17-01.courses.soe.ucsc.edu/>

**Reading**: SCM, 4th Edition: Chapter 11 (Managing Uncertainty…); Chapter 12 (Product Availability), Sections 1-3; Chapter 4, Chapter 5 (Facilities)

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**Problems (due Thursday, 23 February, 2017)**

**Qualitative Problems (from Chapters 11, Safety Inventory):**

1. D11.1, 11.2
2. D11.6, D11.7

**Quantitative Problems (from Chapter 11, Safety Inventory):**

1. Exercise 10.3
2. Exercise 11.1
3. **Walmart:** Estimate Walmart’s daily, weekly, monthly, and annual cycle inventory for toilet paper. (This is an open-ended problem for which you have to develop a **creative** method, starting with appropriate assumptions, for determining the estimate.)

**Case Study**

1. **(Plantronics):** Please use the Plantronics presentations on the TIM125 websites:

Fall 2010 (Tom Gill), Week 3

Winter 2009 (Kai Hypko), Week 4

In addition, do some internet-based research on Plantronics as necessary. It is highly recommended that you discuss/work on this problem with your project group, but **you must turn in your own solution** as part of your homework.

1. What is Plantronics core product line? What is Plantronics competitive strategy?
2. Explain Plantronics’ traditional approach to supply-chain management (“the past”)? Explain Plantronics’ current global supply-chain management (“the present”)? Describe Plantronics’ “dream” SCM scenario for the future? Is this “dream” realizable?
3. Explain the role of software and information technology in the management of Plantronics global product development effort and its global supply chain network.
4. Summarize 5-10 key lessons learned from studying Kai Hypko’s 2009 “SCM” presentation.
5. **(TIM-225 only):** (required) Exercise 10.4; (optional) Exercise 10.5

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**Project Phase 3 (due Tuesday 02/28/17):**

* Make sure that you complete all the tasks that we agreed upon during our Phases I, II project meetings. “**Benchmark”** (calibrate/compare/contrast) your SCM approach and implementation against Plantronics (see **Problem 9** above).
* In addition to cycle and safety inventory, two important new elements of your project will be designing/implementing the **Transportation Network** and the **Facilities**. Be sure to pro-actively plan for these elements.
* Work on implementing the software (**Information**) framework for your project using Excel and Visual Basic. For example, develop the demand forecasting module and the product safety **inventory** module.
* **Simulate** your product’s supply chain and examine various **scenarios** using your integrated software.
* Align and integrate your high-level strategies with the detailed implementations of each driver.
* Develop the proper SC management guidelines for your firm’s products, as well as a **user’s manual** for your software module.