# TIM 125/225 MOT II: Homework 5

**Cycle and Safety Inventory**

**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, 21 February, 2019)**

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

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

**Quantitative Problems (from Chapter 10, Cycle Inventory; and Chapter 11, Safety Inventory):**

1. Exercise 10.3 (Cycle Inventory)
2. Exercise 11.1 (Safety Inventory)
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 and implement a **creative** process, starting with appropriate assumptions, for determining the estimate.)

**Case Study**

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

Tom Gill (from TIM 101, Fall 2010)

Kai Hypko (from TIM 101, Winter 2009)

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).** Cycle Inventory problems: Exercise 10.4 (required); Exercise 10.5 (optional).

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**Project Phase 3 (due Tuesday 02/19/19):**

Perform as many of the following tasks/deliverables as possible.

* Backlog: make sure that you complete the backlog of tasks from Phases I and II.
* Cycle Inventory: develop and implement the necessary processes (qualitative and quantitative) for cycle inventory management for your product.
* Software Automation: 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 cycle **inventory** module.
* Simulation: attempt a preliminary **simulation of** your product’s supply chain by integrating the demand forecasting and cycle inventory software modules.
* “**Benchmark”** (calibrate/compare/contrast) your SCM approach and implementation against Plantronics (see HW # 5, **Problem 6**, above).
* Place all your work, including updates, in a binder; and bring the binder to the Phase 3 project review meeting.
* (On the next phase you will be addressing three more drivers of the supply chain: safety inventory, facilities, and transportation. You may want to plan ahead for how the team will address these tasks, e.g., assigning roles and responsibilities to team members.)