

Homework #3: A mobile-robot startup

Homework is due on Tuesday, 22 August 2017 (also see “incentive” note below)

Midterm Exam: Thursday, 8/17/17

Reading: (1) “Five Forces/competitive strategy” handout (class website); (2) Start-up Process (class website); (2) Kaplan, “Startup”, Chapters 4-6.

Incentive: If you turn in a properly structured and executed homework set on **Thursday, 17 August** at the time of the Midterm, you can earn **up to 10** bonus points on the midterm.

Problems:

- 1. Industry/Market Analysis of the Digital Camera Market (continued from HW#2, Problem 2):**
 - Describe the business landscape for digital cameras using Porter’s five-forces framework.
 - Show the competitive strategy (or position) of each major competitor using the grid of “target market” and “source of competitive advantage”. Briefly justify your assessment of each competitor’s strategy.
- 2. Conceptual Product Design for a robotic vacuum cleaner (estimated time: 2 hours)**
 - Describe a step-wise (i.e., Step 1.....; Step2.....; etc.) procedure for designing a product concept starting from customer needs all the way to a feasible concept.
 - Apply this approach to develop 1-2 feasible concepts for an indoor mobile robot that could be used for cleaning/vacuuming floors and carpets.
 - Draw specific conclusions regarding your robotic vacuum cleaner product concepts, as well as general conclusions about what you personally learned from performing this problem.
- 3. Market Strategy for the robotic cleaner (estimated time: 2 hours)**
 - Describe a step-wise approach for (a) sizing the market for any product (in the USA in 2015), i.e., estimating the total market size (units sold and revenue), the % growth of the market, (b) segmenting the market to create a revenue map; and (c) determining the market share (revenue and %) of the major players.
 - Apply this approach to the conventional vacuum cleaner market and to the robotic vacuum cleaner market. Your solution should include the segmentation of the vacuum cleaner market using an appropriate matrix? Estimate the revenue and growth in each segment (or element) of the market. If you are a new company (startup), which of these segments would you target, and why?
 - How would you design the “marketing mix” for the new robotic vacuum cleaner designed in Problem 1: **product** (a clear definition of the customer needs that the specific product will satisfy as well as how the product is differentiated from other products), **placement** (how you plan to distribute/sell the product), **promotion** (advertising, PR, sales promotion, etc.), and **price**.
- 4. Business/Competitive Strategy for the mobile robot. (estimated time: 1 hour)**

Follow the same process as in Problems 1 and 2 to develop a business strategy for the robotic cleaner product concept developed in Problem 1: first describe (step-wise) the general approach for developing the business strategy for a generic product, then apply this approach to the robot cleaner, and then draw conclusions.
- 5. Kaplan, Start- up:** Complete reading Chapters 4-6 of Kaplan, “Startup”. For each chapter, **extract** and **write down** 3 key lessons you learned from your reading. Each key lesson must be **supported** with evidence (facts) from the text. To the extent possible, attempt to relate these lessons to your own “start-up”.

Project Phase II: Final Product Conceptual Design; and Preliminary Product, Market, and Business Strategy

(Due Tuesday, 15 August 2017)

Reading: Jerry Kaplan, *Startup*, Chapters 4-6

Project Tasks:

1. Create a project binder with properly separated sections or slots for each Phase.
2. Place the Preliminary Project Proposal, and Phase I reports in the binder. Include all your work, from the beginning.
3. Develop 1-2 feasible conceptual designs for your product or service using the process developed in class. (Note: you have already performed some of the steps in the conceptual design process in Phase I. Revisit and refine your design concepts from Phase I, including the dissection of existing products related to your product idea).
4. Create a Vision and Mission statement for your company.
5. What are the business goals of your start-up? (Provide the appropriate “rationale” and “evidence” to support your goals.)
6. Develop preliminary product, market, and business strategies for your start-up as follows:
 - Develop a preliminary product strategy in order to develop your concept into an actual product or service for your customer, i.e., address issues such as resources, timing, etc.
 - Develop a plan (or process or approach) for obtaining the relevant market segmentation/market size information, and then implement this plan to obtain the necessary market information, etc.
 - Develop a map of the appropriate industry/market business landscape(s) for startup plan using the Five Forces model. Be sure to identify the competitive strategies (positions) of your key competitors, and to define your startup’s competitive strategy in this landscape. Provide the appropriate rationale and evidence to support your results.
7. Create a Phase II project report with the following components:
 - (A meaningful) Executive Summary (2-3 paragraphs), which summarizes work done in this phase, including concrete findings and results
 - Conceptual Design for your product or service (see item 3 above)
 - Mission, Vision, and Business Goals (see items 4 and 5 above)
 - Preliminary Product Strategy, Preliminary Market Strategy (including citations of your sources of information), Preliminary Business Strategy (item 6 above)
 - Updated Project Plan for the next few weeks
 - A table **detailing** the contributions of each team member
 - Appendices (containing details, supporting evidence, with proper citations)
8. **Checklist:** Be sure to turn in all of the items below (in-class) **in your project binder** on Tuesday, 15 August, 2017:
 - [] Preliminary Proposal
 - [] Phase I report
 - [] Phase II report (new item: see item 8 above for details)
9. Meet with and obtain feedback on your work from the instructor on Wednesday 8/16/17.