TIM802C Lecture 10 (5/1/14)

Agenda

1) Roadmap for the Course
2) Financial Strategy
3) Project Phase II
4) Homework 3
5) Midterm Review
Roadmap for the Course

Course 4 main parts:

- Product Strategy
- Market Strategy
- Business (Competitive) Strategy
- Financial Strategy

Remaining 5 weeks:

Financial Strategy : 2-3 weeks
Integration : 1 week
Project Presentation : 1 week
Guest Speaker : 1 class

End Product : Complete business plan for your start-up

- Create a "real" version of the start-up
- Sell it
- Bring to job interview to show skill-set (portfolio)
- UCSC Entrepreneurship Showcase
  (Send me an email if you interested)
2) **Financial Strategy**

The **Financial Strategy** for a Start-up has 2 main parts:

1) **Cash Flow Analysis** of the Company for 3-5 years

2) **Funding Strategy** to obtain the cash ($) for all costs (negative cash flows, facilities, people, product development, manufacturing, marketing, etc.)

**Separation Principle**

1) Do the **Cash flow analysis** (Part 1) first, without addressing funding (Part 2)

2) **Funding Strategy** for the cash flow analysis

**Rationale:** We do not want the funding (or the lack of funding) to influence our cash flow estimation.
3 Project Phase II

Each project group must meet with the Instructor (Tyler) on Tuesday (9/6/14) during office hours (E2 553 4-7pm) to discuss the work on Phase II.

Two options for turning in Phase II

1) In class today (5/1/14)

2) At the project meeting on Tuesday (9/6/14)

Make sure your Phase II project binder includes:

- All past work (Proposal, Phase I, etc)

- Description of the contributions for each group member

All group members who can not make it to the project review on Tuesdays need to touch base with either Instructor or TA during office hours.
Homework 3

Create a start-up for a mobile cleaning robot (Roomba)

- Product Strategy: design the robot (function + form)
- Market Strategy: identify the customers (target market segments) for the robot and how to sell the robot to them (Marketing Mix)
- Business Strategy: how will the start-up compete with other companies in the Industry/Market for cleaning robots?

Use Structured Problem Solving
- Problem Definition (see above)
- Process for solving the problem
- Execute the process
- Checking work
- Conclusions

Use lecture notes

Good practice for the midterm
Midterm Review

HW 3: Problem 1

Conceptual Design Process:

Step 1: State the Overall or the Objective of the new product

Step 2: Dissect existing products that are similar to the desired product

Step 3: Create a Function Structure for the new product

Step 4: Create a Morphological Matrix of the possible solution principles for realizing the Function Structure

Step 5: Use the Morphological Matrix to generate several (2-5) possible design concepts for the new product

Step 6: Create a set of selection criteria and apply them to select a design concept
Execute:

Step 1: Overall purpose (Primary Function)
An inexpensive robot for cleaning floors in the home

Step 2: Product Dissection
Dissect similar products (FAST):
- Roomba
- Vacuum Cleaner

Step 3: Function Structure

- Remove Dirt from floors autonomously

- Provide Movement
- Provide Power
- Provide Cleaning
- Provide Control

- Receive Energy
- Store Energy
- Loosen dirt
- Remove Dirt
- Store Dirt

- Sense Environment
- Plan Route
Step 4: Morphological Matrix

<table>
<thead>
<tr>
<th>Sub Function</th>
<th>SP1</th>
<th>SP2</th>
<th>...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide</td>
<td>wheels</td>
<td>feet</td>
<td>hover</td>
</tr>
<tr>
<td>Movement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Receive</td>
<td>Solar</td>
<td>120V</td>
<td>nuclear power</td>
</tr>
<tr>
<td>Energy</td>
<td>battery</td>
<td>fuel</td>
<td>flywheel</td>
</tr>
<tr>
<td>Store Energy</td>
<td>cell</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrolyte</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loosen</td>
<td>scrub</td>
<td>laser</td>
<td>steam</td>
</tr>
<tr>
<td>Dirt</td>
<td>(Brush)</td>
<td></td>
<td>clean</td>
</tr>
<tr>
<td>Remove Dirt</td>
<td>suction</td>
<td>evaporation</td>
<td></td>
</tr>
</tbody>
</table>

Step 5: Design Concepts

Step 6: Selection Criteria

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Concept 1</th>
<th>Concept 2</th>
<th>Concept 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price (Customer)</td>
<td>4</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Performance (Cleaning)</td>
<td>3</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Feasibility</td>
<td>5</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Commercialization</td>
<td>4</td>
<td>3.5</td>
<td>3</td>
</tr>
</tbody>
</table>
HW 3: Problem 2

Market Strategy Process:

Step 1: Identify the Industry/Market.

Step 2: Determine the total size and growth rate of the market.

Step 3: Create Revenue Map

- Customer Segmentation
- Product Segmentation

Step 4: Decide which cell(s) of the revenue map to target.

Step 5: Create a Marketing Mix for the target cell(s).
HW 3: Problem 3

Business (competitive) Strategy Process:

Step 1: Create a map of the Industry/Market landscape
-competitors
- new entrants
- substitute products
- buyers
- suppliers

Step 2: Perform a Porter's Five Forces Analysis of the Industry/Market
- rivalry between competitors
- threat of new entrants
- threat of substitute products
- buyer power
- supplier power

Step 3: Place competitors on a 2x2 competitive strategy matrix

Step 4: Define a competitive strategy
- differentiates
- cost leadership
- focus