Carnegie Mellon University, Heinz College
Lean Entrepreneurship

Course number: 94-840 Section A1
Meets: Monday 6:00 – 8:50pm
Location: HBH 1002

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Office Hours: by appointment
Email: seanammirati@gmail.com

COURSE DESCRIPTION

Technology startups are not just smaller versions of large corporations. Instead they are unique adventures requiring their own agile approach to grow. This class will cover best practices for developing a startup with a primary focus on high growth technology startups. These are a particularly interesting segment because of the rapid development of social & cloud platforms often allow scalable traction from a small seed round or even bootstrapping.

While that is the focus, many principals are also applicable for large companies looking to grow by entering new markets. Also because most technology startups don't fail because of technology limitations but from lack of market demand many of the principals are universally applicable to iterative customer focused development.

Each week the class will be a combination of 3 things:

1. A lecture emphasizing a specific best practice. These will focus on both the general fundamental principals as well as specific tools that can be used to implement them in your job / startup.
2. A student group led analysis of a high growth technology company (can be publicly traded or private) and patterns that can be learned
3. An interactive discussion with the class on a whether they would invest in the company presented or not.
COURSE OBJECTIVES

At the end of the class, students will exhibit ability to:

- Generate growth in technology startups and new product introductions in the enterprise by understand best practices at each stage of development
- Develop an aptitude around leveraging social and cloud computing platforms to scale
- Enhance skills for managing software development projects
- Differentiate between different digital business models and understand the processes to efficiently validate the appropriate approach for a given startup
- Exhibit ability to clearly communicate the phases of development a high growth technology startup goes through and approaches to finance the business at each phase
- Build and lead an effective team at each stage of development
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1 See below for more information on each best practice.
BEST PRACTICES COVERED

Customer Discovery
- C-P-S technique
- Interviews with prospective customers
- Understanding the difference between customer needs and product features

Digital Business Models
- The business model canvas paradigm
- Financial Modeling
- Common High Growth Technology Business Model Patterns

Developing a Replicable Online Sales & Marketing Plan
- Understanding difference between innovators / early adopter customers those ‘across the chasm’
- Sales Process
- Tools & Techniques to automate continuous measurement and scale

Recruiting Team Members
- Culture
- Generalist vs Specialist
- What do technologists really want?

Agile & Continuous Software Development
- “Minimally Awesome Products” (MAPs)
- SCRUM vs Continuous Deployment
- Leveraging Platforms

Raising Capital for Your Startup
- VC Fundamentals
- Emergence of Accelerators for High Growth Tech Startups
Required & Supplemental Reading

Each week, you will be required to spend approximately an hour watching video lectures or reading content to prepare for that week’s class material. In addition, I’ve listed supplemental material that you can at your discretion read in advance of class or later if you want to study more on a given subject. To be clear, you don’t ever need to cover the supplemental material – but the required material is **required** and should be done in advance of that week’s class.

**Customer Discovery – Class Week 2**

*Required:*

*Steve Blank’s Customer Development Manifesto*


*Supplemental:*

*The Entrepreneur’s Guide to Customer Development: A cheat sheet to The Four Steps to the Epiphany [Paperback]*

Digital Business Models – Class Week 3

Required:
Tools for Business Model Generation:
http://www.youtube.com/watch?v=8GlbcG8NpBw&feature=relmfu

Supplemental:
Business Model Toolbox:
http://www.businessmodelgeneration.com/toolbox

Developing a Replicable Online Sales & Marketing plan – Class Week 4

Required:
http://www.youtube.com/watch?v=7RiHoUtyJQc
Slides to follow videos: http://www.slideshare.net/rstrad1/berkeley-digital-media-conference

Supplemental:
Crossing the Chasm

SPIN Selling
Recruiting Team Members – Class Week 5

**Required:**

Best Hiring Practices:

Whom Should You Hire? (Attitude Over Aptitude)
https://techcrunch.com/2011/03/17/whom-to-hire-at-a-startup-attitude-over-aptitude/

Tony Hsieh Big Think Interview

**Supplemental:**

*Leading Change*
http://www.amazon.com/Leading-Change-John-P-Kotter/dp/0875847471/ref=pd_sim_b_3

*Delivering Happiness: A Path to Profits, Passion, and Purpose*

Agile & Continuous Product Development – Class Week 6

**Required:**

Scrum Et Al (Google Tech Talk – Ken Schwaber)
http://www.youtube.com/watch?v=IyNPeTn8fpo

Minimally Awesome Products
http://birchmerelabs.com/post/2012/04/minimally-awesome-products/

**Supplemental:**

Agile Software Development with Scrum
Raising Capital for Your Startup – Class Week 7

Required:

Select Posts from Fred Wilson’s Financing Series:

http://www.avc.com/a_vc/2011/06/financing-options-contestsprizesaccelerator-programs.html

Supplemental:

Venture Deals: Be Smarter Than Your Lawyer and Venture Capitalist
Application Exercises

Both development application exercises are intended to help put into practice the best practices you are learning in the class. If you are working on or exploring launching a startup, you should target the exercises on your startup. If not, you can partner with a local startup or just do the exercises on a fictitious startup.

For your grade, I am more concerned with the process and work you do. Therefore, the quality of the idea you are exploring won’t impact it. However, I’d always encourage you to maximize the value of your personal time by investing in ideas you actually are interested in. Each exercise should be delivered as a SINGLE PDF FILE and uploaded to blackboard.

Exercise #1
The deliverable should include (in whatever layout you find most clear & concise) four things:

1. Use Business Model Canvas to clearly articulate your concept
2. A set of hypothesis you set out to test about your customer’s problems and needs (use C-P-S as at least part of this)
3. The customer interviews you conducted to test these hypothesis (remember the facts reside outside the building) – you should do at least 5 interviews
4. Validated (or invalidated) learning about your customers’ problems & needs

Exercise #2
This deliverable should explain (in whatever layout you find most clear & concise) five things:

1. A specification for your Minimally Awesome Product (or MAP) based on Exercise 1
2. What you would validate / invalidate with your MAP
3. A product backlog of the work required to build your MAP
4. How you’d size of the opportunity
5. How you would generate momentum (sales / marketing techniques)
EVALUATION

The semester grade will be based on the following:
- Student Group Presentation (30%)
- 2 Unscheduled Quizzes (10%)
- Class Attendance & Participation (10%)
- Two Application Exercises (25% each – 50% total)

**Student Group Presentation** – key elements that you will be evaluated on:
- Clarity of overall presentation (10 out of 30%)
- Metrics & benchmarks identified (5 out of 30%)
- Lessons learned / keys to growth triggers identified (5 out of 30%)
- Good analysis of current valuation (10 out of 30%)

**2 Unscheduled Quizzes**
- Each quiz will be given at the beginning of the class (unscheduled) and worth 5% of the total grade.
- If you don’t attend class that night and have not been excused in advance, you will get a 0 out of 5% for that grade.

**Attendance & Participation** – key elements that you will be evaluated on:
- Contribution to the discussion by raising thoughtful questions and analyzing relevant issues. Builds on others’ ideas listen! (5 out of 10%)
- Expands the class’ perspective and appropriately challenging assumptions and perspectives (5 out of 10%)

**Application Exercises** – key elements that you will be evaluated on:
- Clarity of overall presentation (5 out of 20%)
- Process and work conducted to create the deliverable (please show the work completed to land on the deliverable) (10 out of 20%)
- Quality and thoughtfulness of the analysis conducted (10 out of 20%)
Academic Integrity and Citation Practices

The short version of this section is "don't use unauthorized resources (e.g., Googling something during a pop quiz); don't fabricate anything (e.g., making up facts to support your point); and don't plagiarize (e.g., claiming the work of another to be your own)."

In this class, you'll be expected to complete group work as a team and individual work by yourself (though you can discuss the application exercises with others, your work must be your own). You'll likely be incorporating information, data, and material from both your own work and from other sources, and it's important to be accurate and clear about what is yours and what came from somewhere else.

If you're using something directly from another source, cite it clearly and specifically. For example, in written work, quotations should be marked as such (e.g., using quotation marks) and cited with a footnote or in-line citation (just putting the source in the references section is not enough). In a slide, use footnotes (in a large enough font for people to read) to identify where you got quotes and charts (or the information that went into a chart of your own construction--you can distinguish "image source" from "data source"). If you got information or ideas from a source but have put it into your own words or graphics, a citation is still appropriate (though quotation marks around text would not be required).

If you don't cite something, that means you're claiming it as your own work (so make sure it IS your own work!). Following these citation practices will not only prevent you from cheating, it can also enhance the transparency and credibility of your work.

Unfortunately, in very rare cases, students do attempt to use unauthorized materials or claim the work of others as their own. If a student is caught cheating, such an action will result in: (1) an immediate zero for the assignment, (2) the reduction of the student's final grade by a full letter, and (3) a report of the incident to the dean of the student's program. Especially egregious (or repeated) offenses may result in immediate failure of the course.

Some tips:

When in doubt, CITE!

Manage your time well, and don't put off one of the assignments assuming it will be easy or quick. One of the most common reasons given for cheating is lack of time, and the assignments in this class take a little thought and work to do properly.

If you don't understand something, ask! Professors and TAs would MUCH rather
have a chat about course material or course policy than a conversation about an academic integrity violation.

Only take this class if you WANT to do the work. It's a hands-on elective class, and a lot of the learning comes from doing the application exercises, reading the brief weekly assignments, and preparing the presentations. The most valuable thing you have is your time, so if you think that in a moment of stress you'd want to copy and paste your way out of doing some of the work for this course, that's probably a sign that you should drop the class and find a more valuable and fulfilling use of your academic opportunities.

**Late Submission of Work**

Late submission of the application exercises will be accepted at a penalty of 10 percentage points per day late (e.g., if turned in within 24 hours of the deadline, the maximum score will be 90%, within 48 hours the maximum score will be 80%, etc.). Technology being what it is, there will be a short grace period to allow for technical difficulties. If there are extenuating circumstances, please contact the Professor and TA as soon as possible to see if an extension can be granted (for example, if you're in the hospital, your time would be better spent healing than wrestling with Blackboard and a weak WiFi signal).