Carnegie Mellon University, Heinz College
Lean Entrepreneurship

Course number: 94-840 Section A1
Meets: Monday 6:00 – 8:50pm
Location: HBH 1000

Professor: Sean Ammirati
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
## SCHEDULE OF CLASSES & ASSIGNMENTS

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<td>Customer Discovery &amp; Development</td>
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<td>Developing a Replicable Online Sales &amp; Marketing Plan</td>
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<td><em>(no class meeting – just second AE due)</em></td>
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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)
http://techcrunch.com/2011/03/17/whom-to-hire-at-a-startup-attitude-over-aptitude/

Building a Great Startup Culture
http://www.cnbc.com/id/48764119/Building_a_Great_Start_Up_Culture

Tony Hsieh Big Think Interview
http://bigthink.com/ideas/20671

**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=lyNPetn8fpo

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 be explain (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) – should do at least 5
4. Validated (or invalidated) learning’s about your customer’s problems & needs

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

1. A specification for your Minimally Awesome Product (or MVP) based on Exercise 1
2. What you would validate / invalidate with your M.A.P.
3. A product backlog of the work required to build your M.A.P.
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 (10 out of 30%)
- Good analysis of current valuation (5 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 be 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%)
- Note: If you are disruptive or not attentive on the night of our guest lecture, I reserve the right to reduce your attendance and participation grade.

**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%)