THE ENTREPRENEURIAL

BUSINESS OF SOFTWARE

Fall 2006

Course Syllabus

MBA 290T.2; ENG 298A P02 / CCN: 27873
I School 290-10/ SIMS CCN: 42859
Units of Credit: 3

Tuesday/Thursday, 4:00 PM - 5:30 PM
F320 Haas

Instructor

Professor Kurt Keutzer
www.eecs.berkeley.edu/~keutzer/
(see my professional interests)

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Office hour: Thursday 3-4PM
566 Cory Hall

Course Objectives

Software has a relatively low cost of development, manufacture, and distribution. At the same time the ability of software to embody complex algorithms and processes gives software-based companies the capability to create sustainable barriers to competition. As a result software is an ideal medium for entrepreneurs.

When I taught this class in the fall of 2003 a team of two MBA students, two EECS students, and a student from the I School, created an outstanding class project. The computer-science researchers on the team were aware of a recently published technology that could find critical bugs in software, particularly possible security violations. To further realize the potential of the technology, a seed-stage company of four individuals had already been formed. Members of the class project initiated contact with the founders. The project team studied this seed-stage company, evaluated the opportunity, and developed a business plan around it. Today that seed-stage company has grown into a high-growth and *profitable* start-up named Coverity (www.coverity.com).

Retrospectively I would consider this project a model for the class. The engineers identified a technology at a stage that was far below the radar of the business world. The business students helped the team to articulate the market potential. That the technology itself was *not* developed at Berkeley but at a university a bit to the south may seem like a flaw or even a sham. On the contrary it drives home an important business lesson: In the business world the ability to recognize value is at least as important as the ability to create it.

My goal for the class is very simple. I'd like project teams of about five individuals representing a mixture of backgrounds to create high quality and actionable business plans focused on software-based business opportunities. I'd like those plans to win competitions (we'll be coordinating with the business plan competition), to get funded, but most of all to lead to successful software companies. I am very confident that Berkeley students have the right set of skills to make this happen. I will do my best to mentor those skills and I have enlisted a group of successful entrepreneurs and venture capitalists to serve as mentors for the class as well.

Deliverables

Weekly assignments

A typical week will consist of a lecture on Tuesday with a related reading assignment and questions discussed on Thursday. These assignments will on issues that must be addressed in your business plan. The homework can be done in collaboration with your project team. Make sure it's clear who is on the team when the homework is turned in. The answers should be delivered via email to Prof. Keutzer (keutzer at eecs dot berkeley dot edu *and* kurt dot keutzer at gmail.com) and are due by **8am Thursday**.

Project

The project will be to develop a viable business plan. The business plan can be an entirely new venture or can be based on existing enterprise in its very early stages. In the latter case the business plan should embody a significant infusion of new ideas.
The business plan will be presented in person and on paper.

- a class presentation of the business plan (~30 minutes)
- business plan (<3000 words, not including appendices)

Grading (reflects the emphasis above)

Questions: 10 assignments x 2 points each:	20 points
Class project (checkpoints, presentations, and final report)	60 points
Class participation	20 points
TOTAL	**100 points**

Mentors

A number of venture capitalists, executives-in-residence, and angel investors have agreed to be mentors for projects in this class. These mentors all have interest in academic-based seed-stage ventures. Note that mentorship is *not* guaranteed. A project will have to earn the attention of these entrepreneurs. Here is the current list. A number of invitations are outstanding:

- Forest Baskett, General Partner, New Enterprise Associates (www.nea.com)
- Brian Connors, General Partner, Formative Ventures (www.formativeventures.com)
- Leo de Luna, Associate, Saints Venture Capital (www.saintsvc.com) (alumnus of the 2003 class)
- Beth Devin, former Executive VP at Charles Schwab and now CTO and SVP at Blackhawk Network
- Martin Lefebvre, CEO of CommandCAD, founder of Cadabra, private investor, and member of Band of Angels, (www.bandangels.com/team/member.php?bio=martin)
- Faysal Sohail, Managing Director, CMEA Ventures (www.cmeaventures.com)
- Mohr-Davidow and Hummer-Winblad have committed mentors and they are currently being identified.

Class Guests

Mentors and other entrepreneurs will be joining our class for discussions. Current participants include Seth Hallem, founder of Coverity, and Ann Winblad, co-founding partner of Hummer Winblad.

Class Schedule

Date	Topic(s)	Assignments to be read and questions completed before class	Milestones at Start of Class
August 29	Course Overview Key elements of a software start-up	Cusumano: Ch. 5 **Case:** *How VCs Evaluate Potential Venture Opportunities*	
August 31	Profiles and trajectories of successful software start-ups.	Analyze a start-up or business plan using our checklist of attributes.	
September 5	Finding the right SW start-up idea:	**Case:** *Motive Communications*	
September 7	Discussion on identifying market opportunities.	Identify a new and promising market and a particular customer pain-point in that market.	**Teams formed**
September 12	Scoping your project: Is this a technology, product, or market maker?	Cusumano: Ch 2 **Case:** *Documentum, Inc*.	
September 14	Discussion on defining your product or service and its market.	Define your potential products or services. Size potential markets.	**Business mission**
September 19	Packaging and distribution alternatives.	**Case**: *Kana Communications*	
September 21	Discussion of packaging and distribution strategies.	Identify alternative product distribution strategies.	**Elevator pitch**
September 26	Defining your business model.	**Case:** *Icarian, Evaluating a New Business Model*	
September 27	Discussion of distribution issues.	Segment your markets and size them.	**Executive summary**
October 3	Creating and choosing platforms.	**Cases**: *Palm computing*	**Mentor id**
October 5	Discussion on platforms and software.	Define your platform strategy.	
October 10	Analyzing the competition	**Case**: *Oracle vs. Salesforce*	
October 12	Discussion of responding to competition	Perform SWOT on your competitors.	
October 17	Using IP to build competitive barriers.	**Case:** Cadence vs. Avant!, **Case:** Priceline.com v. Microsoft	
October 19	Discussion on building competitive barriers.	Identify your IP strategy and barriers to competition.	
October 24	Sources: Open and Out	**Case**: Black Duck Software	
October 26	Open sourcing and outsourcing discussion.	Will your project outsource? Open source?	**First Cut Plan**
October 31	Software development	Cusumano: Ch 4	
November 2	Discussion of software development practices.	Define your software development approach and timeline.	
November 7	Funding strategies - bootstrap, angel funding, VC funding.	**Case:** *Walnut Venture Associates (A)* **Case:** *Angel Investors*	
November 9	Discussion of funding strategies.	Define your target funding source	
November 14	Exit strategies - cash cow, M&A, IPOs.	**Case:** *Rightnow Technologies*	
November 16	Discussion of exit strategies	Define your preferred exit strategy	
November 21	Review of the business plan.		
November 23	**NO CLASS - Thanksgiving**		
November 28	Project presentations		**Business Plan in Powerpoint**
November 30	Project presentations		
December 5	Project Post-mortems		
December 7	Class wrap up, Feedback		**Business Plan in Word**

Course Summary

Never in history has a single individual been able to accomplish so much with so little as today's software developer. This not only makes software the most interesting industry of our time - this makes software the most interesting industry of ALL time. This course is aimed at teaching entrepreneurial individuals how to exploit the perennial opportunities in software through:

- Identifying key software industry trends
- Identifying attractive software market opportunities
- Identifying the customer's pain and defining the product that will relieve it

The course will address how to create a successful software company by:

- Identifying, creating, and managing successful management and development teams
- Matching the funding options (bootstrap, angel, VC, corporate) to your opportunity
- Matching the exit option (IPO, acquisition target, cash cow) to the opportunity

The course will consider ways to address the perennial challenges of the software industry:

- Turning value into revenue - getting customers to pay for something that is intangible
- Changing buying behaviors and business models in an existing market segment
- Making the distinction between a technology, a product, and a market-maker
- Finding the right business model and mix of tools and services
- Finding the right distribution channel for your software product
- Learning how to minimize and manage software development and support costs
- Creating barriers of entry for your competition through an IP strategy and patent portfolio
- Considering trade-offs in open sourcing and outsourcing

This course is not for armchair entrepreneurs. Last time this course was taught one project identified a new start-up opportunity in its seed stage. In three years that same company has matured into a high-growth and profitable company (www.coverity.com). You can do it too!

Required Reading:

Texts

Class reading assignments will be drawn from:

- Michael A. Cusamano, *The Business of Software*, Free Press, 2004.

Cases

There will be a number of required cases discussed in class. These cases will not be analyzed in great detail, but rather they will be used to illustrate particular issues. In other words, the point of reading the *Documentum* case is not to rethink how Documentum identified their target market. The point is to better understand a methodology for you to identify your project's target market.

Optional Background Cases

The following cases are useful to read in order to understand software business models and different phases in the evolution of a software company. It is particularly suggested that the engineering students read these cases for background:

HBS Case 9-806-105 Google
HBS Case 8-804-158 Akamai
SBS Case SM-117 BEA Systems
HBS Case 9-804-076 Symbian
HBS Case 9-606-021 Wipro
SBS Case OIT-21 BroadVision
HBS Case 9-802-110 Profitlogic
SBS Case E-145 Salesforce.com
HBS Case 9-600-009 Red Hat

About the Instructor

Professor Keutzer joined the Department of Electrical Engineering and Computer Science at Berkeley in 1998 as a Full Professor after fifteen years in industry. As a researcher Kurt has co-authored five books and over one hundred refereed publications including four best-paper award winners. Kurt's last position in industry was CTO and Senior Vice-President of Research at Synopsys. During Kurt's time at Synopsys the company grew from a start-up to a public company surpassing a billion-dollar-per-year revenue mark. While at Synopsys Kurt played an active role in developing the corporation's technical and business strategies, held the responsibility of ensuring the corporation's technology leadership in its twenty-five products, and as a line manager he oversaw the management of thirty-five Ph.D's and the development of two successful products. Since joining Berkeley's faculty Kurt has been an active investor and advisor to a number of start-up companies. Of Kurt's ten start-up investments four have been acquired on profitable terms and the remaining six are all going concerns. Kurt has been an advisor to a number of other major software companies including Simplex and Cadence. Kurt routinely performs due diligence for venture capital firms and has served as a consultant on intellectual property matters to a number of corporations and legal firms.

Class Etiquette [courtesy (no pun intended) of Drew Isaacs]

- Be on time. I will begin class at 4:10 PM. If you arrive after 4:10, you will not be admitted to class that day.
- Come to class prepared, and expect cold calling.
- Please use your name card throughout the semester.
- Beverages are permitted in class, but food is not.
- If you cannot make a class meeting, or if you will be late for class, send me an e-mail advising me of this in advance.
- Laptops, PDAs, cell phones and similar electronic devices will be turned off during class and left in your backpack or briefcase.