

Building the High Tech Startup

ITP 499x (4 Units)

Objective The purpose of this class is cover basic technologies and processes involved in the building web and mobile startups. Students will be introduced to the different aspects of building a web startup including online business models, product management, agile development processes, technology platforms and operations, customer development and online marketing.

Concepts This course will expose students to the core technologies, ideas and processes to convert an idea into a web or mobile startup.

In this class students will:

- Understand the lifecycle of building a web/mobile startup
- Understand the emerging web and mobile ecosystem.
- Learn about business models on the web
- Learn about the fundamentals of Agile development
- Learn how to study consumer behavior on the web
- Develop a well thought out product plan and roadmap.
- Learn about the technologies (hardware and software) behind Web startups
- Create a technology implementation and operations strategy.
- Learn about hosting and operating a web startup in the Cloud
- Learn how to create information architectures and wireframes
- Learn about the basics of customer development and online marketing

Students will also get an opportunity to hear and learn from prominent internet entrepreneurs from the industry.

Prerequisite Basic web publishing

Lecture 2 hrs/week

Lab 2 hrs/week

Instructor Ashish Soni, asoni@usc.edu

Textbook *Required Texts:*

1. Instructor assigned readings and class notes.

Optional:

1. Web 2.0: A Managers Guide, 1st Edition
Amy Shuen, Oreilly Press
ISBN: 0596529961
2. Information Architecture, 2nd edition
New Riders Press
ISBN: 0321600800

Grading The following point-structure will be used in determining the grade for the course. Final grade will be based upon the total points received, the highest total in the class, and the average of the class.

Final Project	85%
Assignments	10%
Class participation	5%

Statement for Students with Disabilities

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me (or to TA) as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m.–5:00 p.m., Monday through Friday. The phone number for DSP is (213) 740-0776.

Statement on Academic Integrity

USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own. All students are expected to understand and abide by these principles. *Scampus*, the Student Guidebook, contains the Student Conduct Code in Section 11.00, while the recommended sanctions are located in Appendix A: <http://www.usc.edu/dept/publications/SCAMPUS/gov/>. Students will be referred to the Office of Student Judicial Affairs and Community Standards for further review, should there be any suspicion of academic dishonesty. The Review process can be found at: <http://www.usc.edu/student-affairs/SJACS/>.

- Policies**
- Make-up policy for exams: In order to make up for a missed exam, the student must provide a satisfactory reason along with proper documentation. Usually make-ups are allowed only under extraordinary circumstances.
 - Projects: It is YOUR responsibility to turn in your lab projects on, or before, the deadlines as set by the instructor. IT IS NOT THE RESPONSIBILITY OF THE LAB TA!
 - Late Projects: Late submission of projects will lead to loss on point, so please turn in your projects on time! No projects will be accepted after 2 weeks beyond the project's original due date. Everything regarding a project should be settled within 2 weeks of the project's due date.

- Though working together is encouraged, the projects must be your own effort. "Duplicate" projects will all receive zero points and possible referral to the Office for Student Conduct.
- All students should read, understand and abide by the University Student Conduct Code
<http://www.usc.edu/dept/publications/SCAMPUS/governance/gov03.html>

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Course Outline (Tentative)

Week 1 – Introduction to Web 2.0 and Internet Startups

- Evolution of the web
- Emerging Web and Mobile Ecosystem
- User participation and socialization of the web
- How to start a web startup?
- Profiles in successful web start-ups: flickr, slidshare.net etc

Reading:

- What is Web 2.0
<http://oreilly.com/web2/archive/what-is-web-20.html>
- Web Squared: Web 2.0 Five Years
http://assets.en.oreilly.com/1/event/28/web2009_websquared-whitepaper.pdf
- How to start a startup?
<http://www.paulgraham.com/start.html>
- Why Mobile is the next big thing
<http://gigaom.com/2010/04/12/mary-meeker-mobile-internet-will-soon-overtake-fixed-internet/>

Deliverable:

- Setup Teams

Assignment 1:

- Ideation for class concept

Week 2 – Web Startups and Business Models

- Content Management System: Drupal
- Online Community: Facebook,
- Mobile Apps: Tap Tap revolution,
- Search: Google, Blekko
- eCommerce: Shoedazzle, Zappos
- Online Marketing: Rubicon Project
- Blogging/Widgets: Tumblr, Wordpress
- Where's the money? : Revenue Models on the Web

Reading:

- 10 Business Models that rocked 2010
<http://www.scribd.com/doc/46210195/10-Business-Models-that-rocked-2010>
- Business Model Canvas
<http://www.businessmodelgeneration.com/downloads.php>

- What's a startup: First Principles
<http://steveblank.com/2010/01/25/whats-a-startup-first-principles/>
- 13 ways to get to \$10 Million
<http://techcrunch.com/2010/10/10/teardown-13-ways-10-million-revenues/>

Assignment 2: Concept Overview report due to teaching team.

Week 3 – What's the big idea?

- What's your product or service?
- Value Proposition and differentiation
- Minimum feature set
- Business and Revenue Model
- How, where and why is a B-Plan different for a web startup

Reading Assignment:

- Writing a Business Plan
http://www.hcp.com/writing_business_plans
- Elements of a great B-Plan
<http://www.sequoiacap.com/ideas>
- YCombinator version of a B-Plan
- Blue Ocean Strategy, HBR

Assignment 3: Brief B-Plan and B-Model (15 slides)

Week 4 – Process: The Lean Startup Model

- Lean startup model
- Understanding customer needs and customer development
- Understanding the principles of Agile Development
- Documenting hypothesis: Channel, Customer and Problem
- Minimum Viable Product

Reading Assignment:

- The Lean Startup:
<http://www.slideshare.net/venturehacks/the-lean-startup-2>
- What is Lean about a lean startup:
<http://www.startuplessonslearned.com/2009/12/what-is-lean-about-lean-startup.html>
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Assignment 4: Document CPS hypothesis that will be tested

Week 5 – Customer Development

- How do you create end user demand?
- Who's the customer/user/payer? How can you reach them?
- How do you identify real customer needs?
- Design Thinking and IDEO Method Cards

Reading:

- Instructor Notes
- Customer Development for my web startup, I and II
<http://www.ashmaurya.com/2010/02/customer-development-checklist-for-my-web-startup-part-1/>
<http://www.ashmaurya.com/2010/02/customer-development-checklist-for-my-web-startup-part-2/>

Assignment 5:

Test each hypothesis online/offline and document findings

Week 6 – High Tech Product Management

- Crafting a product vision
- Developing a product roadmap
- Developing a product feature list for a web/mobile startup: functional, social and technical
- Minimal Viable Product

Reading Assignment:

- Defining Product:
<http://www.svproduct.com/defining-product/>
- Product Discovery Plan
<http://www.svproduct.com/the-product-discovery-plan/>
- Assessing Product Opportunities
<http://www.svproduct.com/assessing-product-opportunities/>

Assignment 6: Product vision and roadmap, Web 2.0 Product Planning Questionnaire

Week 7 – Product Details and Information Architecture

- Building Personas
- Sitemap and wire frames
- User Interaction Design

Reading Assignment:

- Persona's for Product Management
<http://www.svproduct.com/personas-for-product-management-2/>
- Forrester guide on crafting personas

Assignment 7: Develop client persona, Develop product sitemap, Identify Minimal Viable Product

Week 8 – Product Design and User Experience

- Importance of User Experience Design
- User experience design framework
- Importance of the landing page
- Testing User Experience

Reading Assignment:

- Elements of User Experience
<http://www.jjg.net/elements/pdf/elements.pdf>
- User Experience Design Overview
<http://www.smashingmagazine.com/2010/10/05/what-is-user-experience-design-overview-tools-and-resources/>
- Principles for web app design
<http://thinkvitamin.com/web-apps/fred-wilsons-10-golden-principles-of-successful-web-apps/>
- FOW: Chapter 16,17

Assignment 8: Develop site wireframes for minimal viable product

Week 9 – Choosing a Technology Platform- I

- AJAX (what is it?)
- Server side web Programming technologies: PHP, ASP, JSP, .NET, Ruby, Flash, Flex
- Client side programming technologies: HTML and JavaScript
- Open source vs commercial
- Databases: mysql, postgres, sql server, oracle, db2
- Case studies

Reading Assignment:

- Instructor Notes

Week 10 – Choosing a Technology Platform- II

- Databases: mysql, postgres, sql server, oracle, db2
- Web Services: using Amazon Web Service, Google API etc
- Web Application Frameworks - Codeignitor, Ruby on Rails
- Client side frameworks: jQuery
- Content Management Systems – Drupal, Joomla
- Case studies

Reading Assignment: Instructor Notes

Assignment 9: Create high-level technology strategy for proposed concept.

Week 11 – Site Operations, API's and the Cloud

- Hosting your startup in the Cloud
- Leveraging existing API's to implement non-core functionality
- Integration with other Web Services
- Web Operations and Domain Names

Reading:

- Instructor Notes
- Startup Tools:
- <http://steveblank.com/tools-and-blogs-for-entrepreneurs/>

Week 12 – Startup Metrics

- Analytics 101
- Categories of Metrics for Startups
- Startup Dashboard: Keeping track of key performance indicators
- Tools and Platforms

Reading Assignment:

- Startup metrics:
<http://www.slideshare.net/caquino23/startup-metrics-4-pirates>
- Actionable Metrics
<http://www.fourhourworkweek.com/blog/2009/05/19/vanity-metrics-vs-actionable-metrics/>

Assignment 10: Identify and document core metrics for your startup

Week 13 – Driving Traffic to your Startup

- Online Marketing 101
- Different channels for marketing: SEO, SEM, Email
- Social media marketing
- Inbound marketing
- Marketing funnel analysis

Readings:

- A startup marketing framework
<http://www.rocketwatcher.com/blog/2011/01/a-startup-marketing-framework-version-2.html>
- Diffusion of Innovation:
http://en.wikipedia.org/wiki/Diffusion_of_innovations

Optional: Crossing the Chasm, Geoffrey More

Assignment 11: Develop a high level (3 pages) online marketing plan that includes, channels, messaging and expenses.

Week 14 – Team, Expenses and PM

- How to form the right team?
- Cost of building a web/mobile startup: 5 case studies
- Project Management in a startup

Reading: Instructor Notes

Assignment 12: Develop a high level budget for the concept.

Week 15 – Legal issues and fund raising

- Incorporation
- Founders Equity
- Raising capital
- Guest Speaker: Lawyer and Venture Capitalist

Reading Assignment:

Fundraising Survival guide

<http://www.paulgraham.com/fundraising.html>

How to pitch VC's

<http://www.businessinsider.com/henry-blodget-how-not-to-make-a-fool-of-yourself-when-you-pitch-vcs-like-me-2009-6>

