CSCI 400 – Digital Entrepreneurship

Instructors:
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Office: Monday 1-2pm.

Class times: MWF 3-3:50
SS 362

Prerequisites:
None

Learning Outcomes:
This course teaches how to successfully launch a high-tech startup. At the conclusion of this course, students will be able to:
1. Research and develop a product idea using customer discovery.
2. Adapt coding skills to the unique challenges of a startup environment.
3. Design and implement a minimal viable product.
4. Mitigate the risks of a startup environment.
5. Enumerate how non-technical challenges impact technical outcomes, including financing, intellectual property, group dynamics, and equity effect successful product development.
6. Find, train, and employ co-founders and employees in a startup environment.

Format
This course is meant to be as practical as possible, which is challenging given the breadth of the content. To this end, where possible students will be asked to read and think about materials prior to lecture, where time will be used to discuss what actions can be taken as a result of what was learned.

In addition to seminar activities, students will spend considerable time in a semester long group project applying what is learned in class by either creating a startup or simulating the actions required to do so. Each milestone in this process will be presented for a group and individual grade.

Tentative Schedule

<table>
<thead>
<tr>
<th>WEEK</th>
<th>TOPIC</th>
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<tbody>
<tr>
<td>1</td>
<td>What is a startup? Challenges and opportunities.</td>
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<tr>
<td>2</td>
<td>Finding an idea and customer discovery.</td>
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Graduate Increment:
In addition to the undergraduate assignments, graduate students will choose one of the following individual projects:
1 – Write a ten page commercialization plan that explains the market research, product pitch, team, competition, and revenue plan for their group project. (Rubric below)
2 – Create and present a solo startup project, consisting of the same type of customer research, requirements specification, and MVP as the group project.
3 – Create and present a significant additional relevant, instructor-approved contribution to the group project. (NOTE: High barrier to be approved.)

Attendance:
No make ups will be allowed. Your attendance at lectures is highly recommended. Makeups for exams and quizzes will only be allowed in extraordinary situations (e.g. death of an immediate family member or medical emergency) on a case-by-case basis.

Grading:
Undergraduates:
Book report 1 – 20%
Book report 2 – 20%
Group project milestones:
MVP customer research (10%)
Idea pitch #1 (5%)
Idea pitch #2 (5%)
MVP requirements spec (5%)
MVP demo #1 (10%)
MVP demo #2 (10%)
Final MVP demo (15%)

Graduates:
Book report 1 – 15%
Book report 2 – 15%
Group project milestones:
  MVP customer research (10%)
  Idea pitch #1 (5%)
  Idea pitch #2 (5%)
  MVP requirements spec (5%)
  MVP demo #1 (10%)
  MVP demo #2 (10%)
  Final MVP demo (15%)
Graduate project (10%)

Text Book:
There is no required textbook for this course.

Book Report:

Book 1: Zero To One by Peter Thiel
Book 2: The Lean Startup by Eric Ries

Using the book as your resource, build a slide deck that is meant to teach others what you learned from the book. Make slides as sufficient to that end as possible (as in, assume all they will have is what they read). Concentrate on high impact, actionable information.

DETAILS: Your slide show must contain exactly 20 slides. Optimize your space for the greatest actionable impact. Diagrams you made yourself are ok, but don’t use anything someone else made or any images. Use default fonts, black text on white background, standard bullet list slides + (optional) diagrams. You are being graded on content, not aesthetics. Citations are not important.

Submit via email as a ppt, pptx, or keynote file.

Cheating:
Any form of collusion or dishonesty will be prosecuted to the full extent allowable by University standards and may result in an automatic failing grade in the course.
Incompletes and Late Drops:
The university empowers instructors with discretion to approve incompletes or late drops (dropping the course after 45 days). I will not approve either as a means of avoiding a low grade or as a means of protesting course policies. Valid reasons include family emergencies, work complications, or registration issues, but I reserve the right of approval on a case-by-case basis.

Disabilities:
This course is accessible to and usable by otherwise qualified students with disabilities. To request reasonable program modifications, please consult with the instructor. Disability Services for Students will assist the instructor and student in the modification process. For more information, visit the Disability Services website at http://life.umt.edu/dss/.

Commercialization Plan:
The plan must concisely convey:
• The business opportunity enabled by the innovation
• The compelling value proposition for your intended customer
• The key points of a plan appropriate for your company’s stage of development
• The status of the effort to date and map out a strategy for your enterprise moving forward
• The current as well as the anticipated commercial landscape and the resources required to address the opportunity enabled by your innovation
• Your vision for the enterprise and how the proposed innovation fits into the future market.

The outline below describes the points that should be covered in a well-developed commercialization plan. There are four sections required: Market Opportunity, Company/Team, Product/Technology and Competition, Finance and Revenue Model. Each section should be developed with careful analysis of your company’s position within the industry and the market opportunity that is enabled by the proposed innovation. The key points required for each section are also shown below.

Market Opportunity
• Describe succinctly what product or service you are planning to deliver based on your innovation.
• Describe what customer needs will be addressed with your product or service.
• Describe who your target customer is, providing generally-known examples may be helpful.
• How does the target customer currently meet that need that you are addressing or convincingly describe how there is a significant problem that is not yet being addressed?
• What is the business model you plan to adopt to generate revenue from your innovation?
• How do you plan to “exit” the investment?
• Is the target market domestic, international or both?
• Describe the channels you would employ to reach the targeted customer.
• What is the current size of the broad market you plan to enter and the “niche” market opportunity you are addressing?
• What are the growth trends for the market and the key trends in the industry that you are planning to target?
• What are the barriers to enter this market?
• Describe the technology/development objectives and critical milestones that must be met to address the market opportunity.
• If there are potential societal, educational or scientific benefits beyond commercial considerations they should be included here and explained in sufficient detail to convey the significance of the effort.

Company/Team
• Provide a short description of the origins of the company.
• What type of corporate structure is in place?
• What is the current capitalization?
• What is the current employee count?
• What is the revenue history for the past three years?
• What are the sources of operating capital or revenue: product sales, consulting/services, license revenues, R&D grants/contracts and others?
• Give a brief description of the experience and credentials of the personnel responsible for taking the innovation to market.
• What specific experience does the team lack and how will this be addressed during this effort and beyond?
• How does the background and experience of the team enhance the credibility of the commercialization plan; have they previously taken similar products/services to market?
• From what additional resources do you have commitment? (e.g., Board of Directors, Board of Advisors, Technical Advisors, Legal Counsel). Provide details on the names, affiliations and expertise of these resources.

Product/Technology and Competition
• What are the critical needs ("pain points") that your product or service is fulfilling for your customer?
• What features of your technology will allow you to provide a compelling value proposition? How have you validated the significance of these features?
• What is your customer willing to pay for your product or service? How have you validated this assumption?
• What are your costs to produce the product or service? What are the assumptions that underlie your cost model(s)?
• How does your technology/innovation allow your team to compete and win in the marketplace?
• How does your product or service match up to that of the competition?
• What do you anticipate the competitive landscape to look like when you get to market?
• Describe the intellectual property landscape.
• Do you have "freedom to operate?’’
• How do you plan to protect the intellectual property associated with your technology?
• What other sources of intellectual property will you need to access in order to address the market opportunity described above?

Finance and Revenue Model
• Describe an appropriate staged finance plan given the market opportunity described above; enumerate the level of funding required for each stage along the path to commercialization.
• How will you access the appropriate funds? Provide specific contacts, leads, previous relationships and agreements already in place.
• What commitments do you have for follow-on funding?
• Describe the revenue streams (licensing, product sales or other) associated with your commercialization plan. What are the adoption rates?
• When do you anticipate “first revenues” from each stream?
• When do you expect to reach “break even”? 
• Provide annual pro formas for the next five years. Income Statements are required. Cash Flow and Balance Sheets may be included if they are considered critical for your strategy.
• What are the assumptions made when developing your models? How have you validated these assumptions?