Healthcare Ventures
15.S07
Fall 2013
H1 H2

Class sessions: Thursdays 5:30 – 8:00, Room 56-154

Recitations with Staff & TA: Thursday from 4-5PM, Stata Cafe

Course Staff (see Bios document for more information)
Course Directors
Martha Gray
Zen Chu

Other Course Faculty
Arthur Hiller
Mike Dempsey

Teaching Assistant
Andrea Ippolito

Class Description
Healthcare ventures is an opportunity for teams of those who seek careers in the domains of business, engineering, technology, science, policy, and/or medicine to make their mark on the life sciences (BioMedical) sector by starting a new venture. In the first few weeks of the class, students will take a patient-centric approach to exploring different needs and ideas that might ultimately form the basis for a new venture. By the 4th week of the course, the final set of venture ideas will be decided and students will form teams through a process that involves students selecting the venture idea that is most compelling. Throughout the remainder of the semester, each team will work together to create a new business and write an impact plan for that venture. Through that process the teams will learn to define the critical issues that will need to be addressed to establish a successful venture, and where possible, will take steps to de-risk the venture.

Class Philosophy
This class is application only. Students are expected to come ready to actively engage and to work independently. Having an impact is not a spectator sport. During these interactive sessions, students will pitch and present their current progress on their ventures and the diverse team of faculty will offer critical advice aiming to accelerate the pace and enhance the quality of work to be done between sessions.

To a large extent, the course is intended to provide a supportive environment during which individuals and teams are expected to function like independent professionals. Accordingly, a major objective is for students to have a near real world experience of preparing to launch a new venture.

Grading
Grades will be based on class participation, measured primarily through written and oral presentations.

Attendance
With the exception of Sloan students during SIP week, please contact the TA if you need to miss more than one class.

Assignments
Assignments should be submitted both in hard copy during class and electronically by stellar or dropbox (this will be outlined in each assignment). All assignments will build towards the final submission of a completed impact plan. Interim assignments should be submitted as if it were the final version of the impact plan given the work to date, but teams should flag gaps in their current understanding and include action plans to address them. Sections of the written documents will be graded on a check, check-plus, check-minus basis.
based on the team’s progress, the current content, and the action plan. Oral presentations will be graded on
the same basis, based on the quality of presentation and the arguments made.

**Notes on preparing to create a high-impact venture**

**Working definitions:**
Need = patient-centric articulation of a problem (including the context and scope of the problem)
Idea = plausible approach to address the need
Opportunity = Need + Idea
Venture = Opportunity + Plan
Viable Venture = Venture with adequate value

**Type of impact**
1. Advance on current paradigms
2. New platform/approach
3. Paradigm shift

**Additional notes:**
- Needs and ideas are obvious after the fact, not before.
- Most ideas have been done and/or have failed – don’t be discouraged
- Even if something has been tried before, you (and your team) may bring a unique perspective
- It takes time and lots of iteration – don’t despair
- You have become experts in at least one field already
  - You can become expert in another; it is ok to change fields
  - By learning about other topics, you are not wasting your previous knowledge
- Reading, listening, observing, and discussing – practice these daily
- Regarding reading the literature (or talking to experts)
  - Just because it is published doesn’t mean it is correct
  - Just because it is dogma doesn’t mean it is correct
  - Statistics are often misused (ask wrong question; wrong test applied)
- Statistical significance is not a surrogate for importance, relevance, or impact
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<tr>
<th>Date</th>
<th>Topic</th>
<th>Readings</th>
<th>Deliverable for next class</th>
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<tbody>
<tr>
<td>9/5/13</td>
<td>Who is your customer?</td>
<td>Healthcare Landscape, HCV Process Overview &amp; Themes, Pitch as Central Vehicle for feedback &amp; testing, and Individual Intros.</td>
<td>Personal &amp; Problem Pitches in 2 min, no slides</td>
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<td>Students will learn about the various entities in healthcare including payors, insurance, providers (including new models such as ACOs, minute clinics, etc), consumers, etc, including a high level overview of their incentives. The goal is to help the student appreciate the solutions that different entities would be willing to pay for.</td>
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<tr>
<td>9/12/13</td>
<td>Who is your customer (continued), break early for t=0</td>
<td>Disciplined Entrepreneurship: Step 3 - 5 (pp 49-81)</td>
<td>Document identifying the users and stakeholders that apply to the student's project and describing the associated incentives.</td>
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<td>Problem Pitches, Themes, break early for t=0 (professor talks, compressed hackathon and brainstorming session)</td>
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<td>9/19/13</td>
<td>Value Propositions</td>
<td>Disciplined Entrepreneurship: Step 6 - 9 (pp 83-119)</td>
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<td>How is Healthcare different than other industries? Following the money &amp; cutting through the complexities of specialties, regulation, reimbursement. Examples of scalable medical products &amp; services.</td>
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<td>9/26/13</td>
<td>Business Models</td>
<td>Disciplined Entrepreneurship: Step 11 - 16 (pp 131-180)</td>
<td>Students must deliver a Business Model Canvas tying the product descriptions identified in Week 3 to a specific business model. Include who pays, a hypothesis on how much, and a visual diagram about how the product will be sold / distributed to the users and customers.</td>
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<td>Healthcare Business Model Design - Who will pay for this solution? How much? How will you sell/distribute the product to them? Students will be asked to apply lessons they learned in 15.390 to rapidly identify potential business models and execution plans. Discuss the Business Model Canvas &amp; worksheets, Healthcare Specifics</td>
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<td>10/3/13</td>
<td>Design Thinking</td>
<td>Disciplined Entrepreneurship: Step 10 (pp 121-129)</td>
<td>Students must interview the key users and identify their specific needs. This document must point to a high level product description that addresses the users needs.</td>
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<td>Design Thinking - Identifying emotional needs and adoption drivers: Following the methods of product design firms like IDEO, students will learn how to identify key emotional needs. What are the deep seated emotional needs of a user? How does the big problem from week 1 impact and effect each of the users involved?</td>
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Who are the decision makers in the various health entities who are the gatekeepers to push your solution forward or hold it back? This will be mapped onto healthcare where the adoption drivers are often complex and opaque. The students will learn how to identify these drivers and decision makers across the various health entities (payers, providers, etc).

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<tr>
<td>10/10/13</td>
<td>Design &amp; Build</td>
<td>Validation: Hypothesis design / testing. Discuss having the students iterate through the lean canvas (or a similar tool) to clearly articulate their assumptions and validate those assumptions.</td>
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<td>10/17/13</td>
<td>Testable Products</td>
<td>For the rest of the semester students will be required to give an elevator pitch each week forcing them to learn to articulate their ideas succinctly as well as to articulate how their idea has evolved over time.</td>
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<td>SIP week –no class 10/24</td>
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<td>Students must identify and execute a series experiments to validate the assumptions that their business is based on. Students will be evaluated on their ability to design experiments with the highest learning/cost ratio as well as their ability to actually execute these experiments.</td>
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<td>10/31/13</td>
<td>Validating Solutions</td>
<td>Validating Solutions: Lean Experimental Design - what experiments can we run that prove this is a buildable solution that solves the problem and a valid business model? Using the methodologies discussed in 15.S16, students will learn to identify easy to execute experiments that can help to validate that the customer will actually pay for the solution (i.e. will the dog eat the dog food?), that the solution is buildable, and that the identified channels of sales and distribution are accessible to a young startup.</td>
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<td>11/7/13</td>
<td>Iteration</td>
<td>Iteration: Students will learn how to take the results from their experiments in weeks 5 and 6, iterate upon their product solutions, business models, and execution plans in order to redesign them.</td>
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<td>11/14/13</td>
<td>Healthcare and pilot strategies</td>
<td>Students must identify and execute a series experiments to validate the assumptions that their business is based on. Students will be evaluated on their ability to design experiments with the highest learning/cost ratio as well as their ability to actually execute these experiments.</td>
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<td>11/21/13 – Thanksgiving – no class</td>
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<td>One Page Summary: Experiments, Data, Learnings, Pivot, Expertise Needs, Next Steps</td>
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<td>11/28/13</td>
<td>Funding Strategy and Scaling</td>
<td>Disciplined Entrepreneurship: Funding Strategy for business and Final</td>
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Fundraising Strategy and Scale: Students will learn the various entities to fundraise from. This will build on ideas in 15.390 and 15.391. They will discuss the pros and cons of different fundraising strategies. In addition, students will learn strategies for scaling through solutions - whether through the healthcare payer, provider, or vendor ecosystem.

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<th>Date</th>
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<td>12/5/13</td>
<td>Final Deliverable presentations</td>
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<td>Final Deliverable at the End of Semester: A presentation designed to articulate the business plan. Students will be allowed to choose the audience (investors, early stage employees, or early customers).</td>
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Getting started:
Resources and approaches that will help you find a need

1. Epidemiology
   (WHO, CDC SEER, M&M Weekly, ECDC, UICC; specialty foundations)
   1. Morbidity
      1. Chronic disease
      2. Intervention specific
   2. Mortality
   3. Burden of disease

2. Challenges in Diagnosis
   1. Delayed/Early diagnoses
   2. Incorrect diagnosis
   3. Unknown etiopathology

3. Important Topics – what are others talking about?
   1. Journals (NEJM, JAMA, ANNALS)
   2. Investment (Venture Source, etc.)
   3. Grand challenge/RFP (NIH, FP7, etc.)
   4. Lay press (health columns – NYT, WSJ)

4. Observational –
   1. Clinical experience – seeing medicine in action
   2. Personal experience

5. Medical Errors

6. Disparities in delivery and quality (AHRQ)

7. Limited Personnel
   1. Resource Limited – not enough people to fill the positions
      (Bureau of Labor statistics, Google search for hot careers, etc.)
   2. Require long periods of training

8. Excluded for current treatments
   1. Pediatrics vs adults
   2. Co-morbidities
   3. Other

As you read consider the following types of questions:

1. Compare and Contrast:
   2002 vs. 2012; regional differences; young vs. old; similarities and differences in what is talked about (e.g. in sources of important topics); are there contrasting viewpoints?

2. Why:
   ...did the publisher include this topic? ...is this medical error common? ...is <job name> hard to fill?
   ...did the author choose this problem/approach? ...is mortality dropping?

See file: Resources web links.xlsx for links to some of these references

Entrepreneurship.mit.edu