I-Corps™ for Learning
Sustaining and Scaling STEM Education Innovations for Impact

ASEE/IEEE Frontiers in Education Conference – October 13, 2016 – T2B – 1:30 pm – 3:00 pm

Facilitated By

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American Society for
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University of Minnesota

Agenda

Introduction of Session and Facilitators	**5 min**

Brief introduction to the I-Corps™ for Learning Program **10 min**
- History
- Goals
- Current Initiatives

Lean Start-Up Approach **25 min**
- Business Model Canvas
- Customer Discovery Process
- Agile Engineering – Iterate & Increment

Customer Segments (CS) and Value Proposition (VP) Exercise **30 min**
- Identify an education innovation that you would like to see sustained and scaled
- Within that innovation identify one Value Proposition (VP) that you think is aligned with one Customer Segment (CS)

Summary and Feedback **10 min**

7-week Program

Educational Innovation

Customer Discovery

Kick-off Workshop	5 Online Sessions	Lessons Learned Workshop

100 Interviews

Readiness for Sustaining & Scaling?

Product Market

Fit

I-Corps™ for Learning History

June 2013   June 2014   June 2015   June 2016

3 Cohorts + Pilot
73 Teams
234 Participants
18 Instructors
3 Evaluation Partners

Pilot: Jan-Feb 2014

Cohort 1: Jan-Feb 2014

Cohort 2: Jul-Aug 2015

Cohort 3: Jul-Aug 2016

Key Features of I-Corps™ for Learning

- **Curriculum**
  - Business Model Canvas
  - Customer Discovery
  - Agile Engineering
- **Course Specific Outcomes**
- **Assessment Instruments**
- **Syllabus Iterations**
- **Balanced Teaching Team**
- **Diverse Participant Segments**
- **Teams Composition**

Participant/Alumni Segments

Current Profession Leaning (36%)

Entrepreneur Leaning (20%)

Both (44%)

TAKING YOU FROM AN IDEA TO A BUSINESS (SUSTAINABLE SCALABILITY)
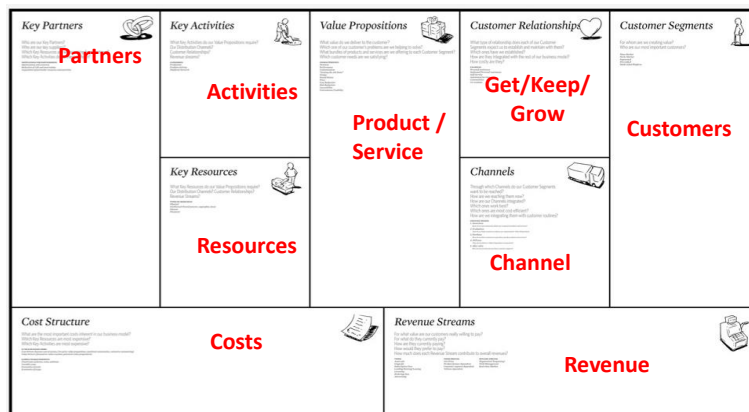
The Lean Startup In Three Steps

1. Frame Hypotheses

□ Frame Hypotheses ➜

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1. Frame Hypotheses

□ Frame Hypotheses ➜ **Business Model Canvas**

2. Test Hypotheses

☐ Frame Hypotheses   ➔   Business Model Canvas

☐ Test Hypotheses   ➔

2. Test Hypotheses

☐ Frame Hypotheses   ➔   Business Model Canvas

☐ Test Hypotheses   ➔   Customer Discovery
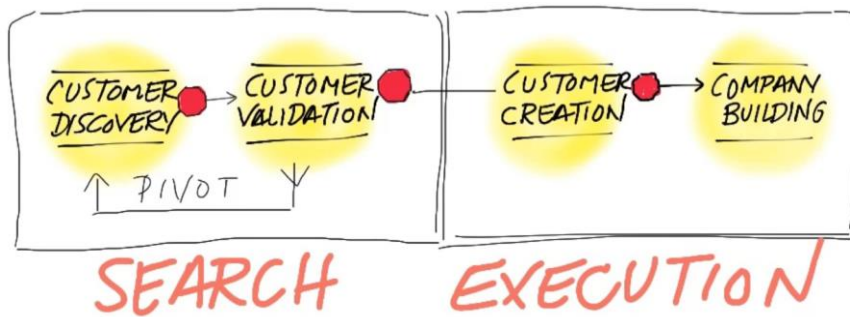
3. Build Incrementally & Iteratively

☐ Frame Hypotheses	➜ Business Model
☐ Test Hypotheses	➜ Customer Development
☐ Build the product incrementally & Iteratively	➜ Agile Engineering

Activity: Choosing an Educational Innovation

- ◻ Individually,
    - ◻ Identify an educational innovation you would like to see scaled
    - ◻ Write 1-2 sentence(s) describing the innovation
- ◻ In small groups (2-3 people),
    - ◻ Share the innovations you identified and select one for the group
    - ◻ If needed, re-write 1-2 sentence(s) describing the innovation

Examples

Product Realization 2.0 — TEAM 66

UNIVERSITY of WISCONSIN
UWMILWAUKEE

Nathaniel Stern — *Entrepreneurial Lead*
Ilya Avdeev — *Academic Lead*
Brian Thompson — *Mentor*

INTERVIEWS

	New	Total
(person)	7	78
(chat)	-	10
(phone)	1	13
	8	**101** ✓

We help engineering companies identify talent, and students get their first internship, through a sponsored experiential interview that demonstrates targeted skills

The Ecosystem

- Academic Leadership (7)
- Career Services, Corp. Relations (6)
- Instructors (10)
- Engineering Students (2)
- External Recruiter (4)
- Corp. Leadership (6)
- Pgm. Officer (5)
- HR (25)
- Engr. Mngr./ Dir. (16)
- Engineers (13)
- Interns (7)

University → Product Realization 2.0 → Industry

(Total Interviews by type)
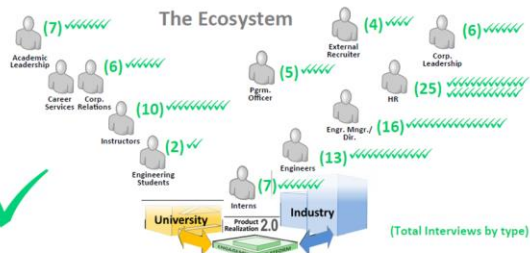
Team 61

JUR Press

JUR is a journal for undergraduates, by undergraduates that engages students throughout the publication process, providing a place to publish their work as well as a single source for finding internships and research opportunities

Jessica Egner — *Entrepreneurial Lead*
Mark Brown — *Principal Investigator*
Mark Combes — *Mentor*
Melissa Edwards — *Mentor*

Interview Count	(person)	(chat)	(phone)
101	99	1	1

The Lean Startup

Lean Startup isn't explicitly about starting a company…

It's really about how to *maximize the number of people you help and impact* (i.e. the business model)

Scaling and Value

Scaling

100 students ➡ 100,000 students ➡ 1,000,000+ students

Who will pay for you to provide value to those 100,000 or 1,000,000+ students?

Examples

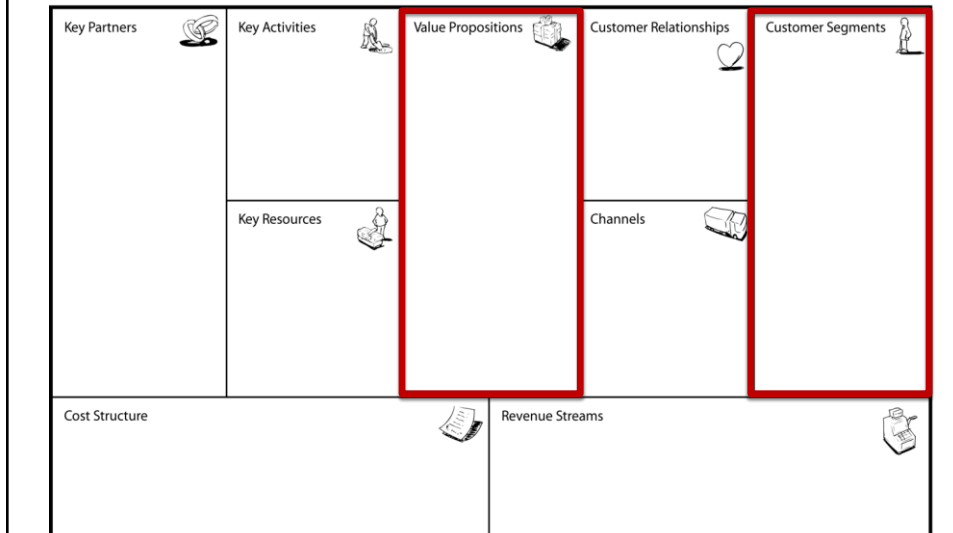**2012 Overall Expenses:** *$7.3M*
- $5.1M just in salary expense

2012 Total Revenue: $15M
- Almost all from donations
- $500,000 fees for services

KHANACADEMY

BILL&MELINDA
GATES *foundation*

- **Non-profit doesn't mean you shouldn't charge for the value you deliver!**
- In fact, it's imperative that you do figure out **what you can charge for** and **who will pay** (other than students & teachers).

That's why we start with *these*

Key Partners	Key Activities	Value Propositions	Customer Relationships	Customer Segments
	Key Resources		Channels	
Cost Structure		Revenue Streams		

Customer Segments
(Does Anyone Care?)

Key Partners	Key Activities	Value Propositions	Customer Relationships	Customer Segments
				Who are your most important customers? **What job do they want to get done?**
	Key Resources		Channels	
Cost Structure			Revenue Streams	

Value *Propositions*
(Why Do They Care?)

Key Partners	Key Activities	Value Propositions	Customer Relationships	Customer Segments
		What *customer problems* are you helping to solve ? **What *customer needs* are you satisfying?**		
	Key Resources		Channels	
Cost Structure			Revenue Streams	

Mistake #1

Building Something Nobody Wants!

TOP 10 ---------------------
---------- **STARTUP MISTAKES**

#1 Building something nobody wants
Score: 300
36% of Tot.

#2 Hiring Poorly
Score: 153
18% of Tot.

#3 Lack of Focus
Score: 112
13% of Tot.

Score: 98
12% of Tot.
#4 Fail to execute Sales & Marketing

#5

#6

#7

#8

#9

#10

100 First Hits
www.100FirstHits.com

8. Spending Too Much Money **18** (2,1%)
9. Failing To Ask For Help **12** (1,4%)
10. Ignoring Social Media **6** (0,7%)

5. Not Having The Right Co-Founders **66** (7,9%)
6. Chasing Investors, Not Customers **45** (5,4%)
7. Not Making Sure You Have Enough Money **28** (3,3%)

Value *Propositions*
(Why Do They Care?)

Key Partners	Key Activities	Value Propositions	Customer Relationships	Customer Segments
	Key Resources		Channels	
Cost Structure		Revenue Streams		

The Value Proposition

A **value proposition** is a promise of value to be delivered. It is a clear statement that:

- explains how your innovation solves customers' problems or improves their situation (**relevant**),
- delivers specific benefits (**descriptive, measurable**),
- tells the user or buyer why they should use it or buy from you and not from the competition (**unique**).

http://conversionxl.com/value-proposition-examples-how-to-create/#.

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Features vs. Value Propositions

Features	Weak Value Propositions	Strong Value Propositions
Fun & Engaging	Faster, Cheaper, Better	Relevant, Significant & Testable Product Benefits
Field-specific skill building	Getting students involved with an undergraduate publication	Increase number of good applicants for graduate schools

Customer Segments
(Does Anyone Care?)

Key Partners	Key Activities	Value Propositions	Customer Relationships	Customer Segments
	Key Resources		Channels	

Cost Structure		Revenue Streams	
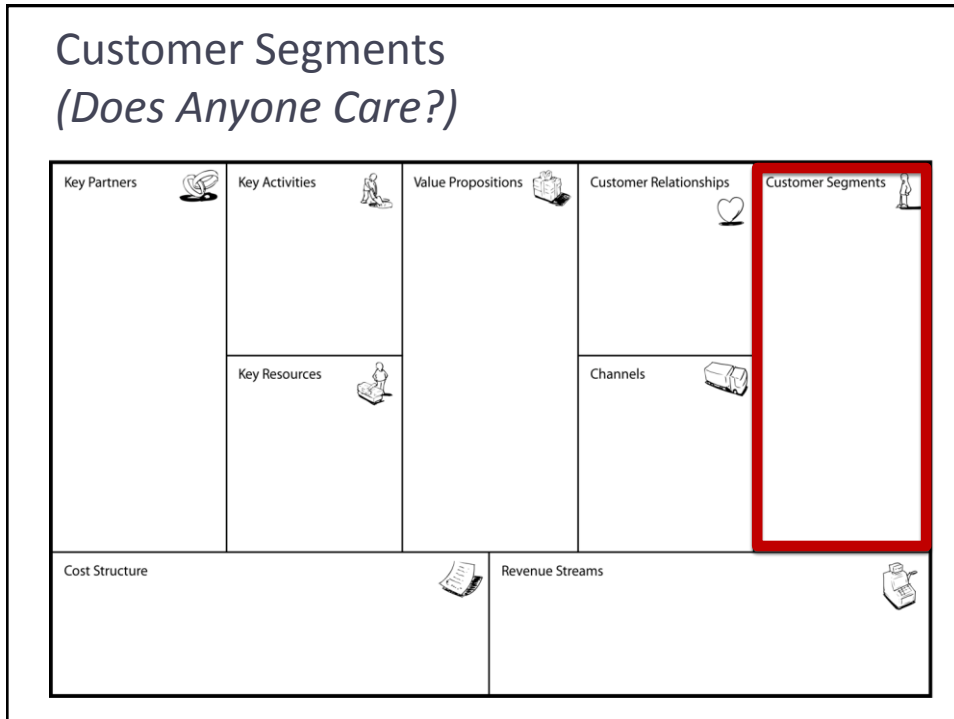
Customer Segments

Not Customer Segments	Vague Customer Segments	Clear Customer Segments
Buildings, Organizations	Broad Groups of People	Very Specific Job Titles, Very Specific Archetypes/Personas
Colleges	Faculty	Newly Hired, Tenure-track Engineering Faculty

Customer Segments (CS) and Value Propositions (VP) Alignment

What makes for a compelling value proposition?

- o What problem are you solving/need are you serving?
- o How?
- o For whom?

Customer Profile

Customer Jobs: What do they have to do and how do they do it now?

Jobs
- Functional
- Social
- Emotional
- Supporting

Job's contexts
Job's importance

Strategyzer
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The makers of Business Model Generation and Strategyzer

Customer Profile

Pains
- Undesired outcomes
- Obstacles
- Risks
- Difficulties

Severity

Customer Pains: What annoys your customers?

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Customer Profile

Customer Gains: What do they want?

Gains
- Functional
- Social
- Emotional
- Resourceful

Relevance
- Required
- Desired
- Expected
- Unexpected

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The Value Map

Products & Services: What are you offering?

Products & Services
- Physical, tangible
- Intangible

Relevance

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Gain Creators: How do you provide positive results and benefits?

The Value Map

Gains Creators
- Expectations
- Desires
- Utility
- Unexpected

Relevance

Strategyzer *Copyright Business Model Foundry AG
The makers of Business Model Generation and Strategyzer*

The Value Map

Pain Relievers
- Undesired outcomes
- Obstacles
- Risks
- Difficulties

Relevance

Pain Relievers: How do you alleviate customer pains?

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The makers of Business Model Generation and Strategyzer*

Value Proposition Customer Segment Ad Lib

CS
_____
Customer Segment: Which people? Be specific!

would "pay" to _____
Value Proposition: Solve this problem

VP in a way that

_____
Verb (reduces, increases, etc.)

_____
a specific Customer Pain or Gain

(unlike _____)
Extra Credit: How is it different than the competition?

61: JUR Press

The Value Proposition Canvas

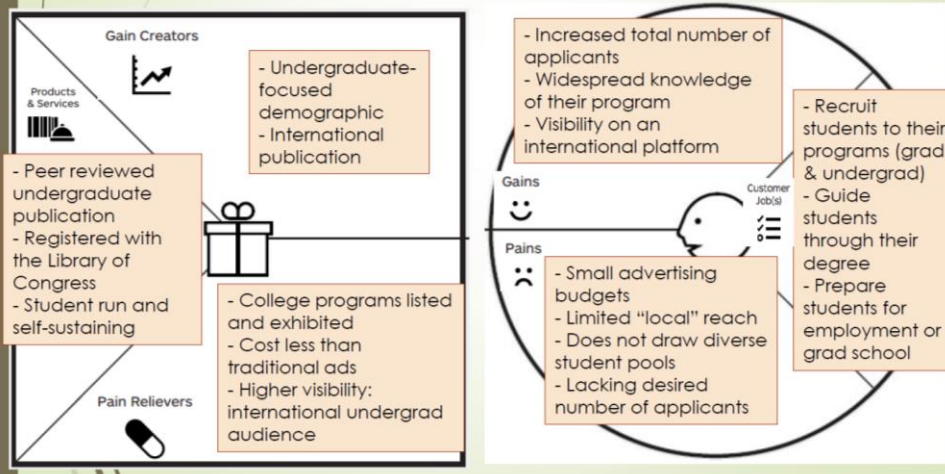**VP:** Increase number of good applicants for graduate/professional schools

CS: University Department Chairs/Directors (Admissions)

Customer Segment and Value Proposition Alignment

Kick-off – Class 1

STEM-Packs

Introducing modular, standards-based, PreK-8 STEM learning into public library Summer Reading Club by connecting literature with STEM activities

Value Propositi	Customer Segn
Library survival/growth	PreK-8 SRC Children's
School Districts - continuous STEM	Library Directors
★ STEM-Pack (all parts)	★ Educators
	★ Family Members

124 Interviews

Wrap-up – Class 10

Story Time STEM Packs

Integrating science, math, and engineering activities with children's literature

Value Propositi	Customer Segn
Increase SRC & other library	Library Directors
Increase comfort level with	Librarians without
Assure standards-based	Librarians with Educators/STEM
Decrease activity	Part-time and small libraries
Increase entry into STEM-	Library Donors/Decision

STORyTIME STEM-PACKS

Value Propositions	Customer Segme
Decrease activity preparation time to 20 minutes or less	Part-time and small library staff

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Customer Segments (CS) and Value Propositions (VP) Exercise (~30 min)

- **Participants work individually on:**
  - Describing their innovation in 1-2 sentences (from previous example)
  - Identifying one VP that is aligned with one CS using the Value Proposition Canvas

- **Participants work in pairs to provide feedback and revise their work**

- **Pairs share their work with the group**

The Growing Network of I-Corps™ L

New Courses

Awareness Sessions	Introduction to I-Corps™ L	National Cohort
1-3 hours	2 weeks	7 weeks
Face-to-Face Online	Online Hybrid	Hybrid
• Introduction to core features of the Lean Startup Process • Focus on the importance of sustainable scalability at the early stages of concept development	• Opportunity to develop 'proof-of-concept' evidence towards sustaining and scaling • Focus on Value Proposition + Customer Segment 'fit'	• Opportunity to determine innovation readiness for sustainable scalability • Immersion in the Lean Startup Process
Frontiers in Education (FIE) October 12-15, Erie, PA	***ASEE Annual Conference** June 25-28, Columbus, OH	**?** (traditionally Jul-Aug)

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I-Corps™ for Learning

https://www.asee.org/i-corps-l/

Thank you!

An e-copy of this presentation will be posted to:
www.asee.org/i-corps-l

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