

ENGR 112 Notes

Laboratory to Market - Entrepreneurship for Engineers

W 1 T : 4-4-17

- Mark Zuckerberg would have a different perspective of teaching than a small business leader
- Nathan Wilson - did some consulting work and it was hard to sell
- He had to do a ton of work for it and bootstrap it and do it through consulting.
- Terrible idea!
- Worked with a professor in the business school and became the leader of a startup where one client was writing a 1.5 million dollar check from one client with a 50% gross margin
- \$750,000 of free cash flow every year is worth doing, but otherwise, do NOT do it!
- Perspective matters!
- Common thread of entrepreneurship and individual perspectives can color some of the outlook
- Why should I study entrepreneurship as an engineer?

Video:

- Think like a businessperson
- Meet engineers who have been working on their technology for 15 years and it was like this
- What value will you bring to people?

Prelude to Course

- What is “entrepreneurship”?
- Something to sell
- Adding value

Original Definitions of Entrepreneurship?

- Idea of buying at a certain price now and this is what entrepreneurship was in the 17th or 18th century.
- Really hard to extend this definition!
- Is working for a car company entrepreneurially?
- It depends if you are working on a self-driving car for a startup vs working at GM as a manager.
- Entrepreneurship is a personality - series of traits (Richard Bransons of the world)
- There are these different types of personalities and this is clearly wrong because if all we had to do was psychologically profile you, we don't need this class.

Entrepreneurship as a Behavioral Phenomenon*

- Definition of entrepreneurship: Pursuit of opportunity without regard to resources currently controlled.

- Post the course pack very shortly with an article from Professor Stevenson

- Strategic orientation
- Promoter on one side
- Trustee on the resources currently controlled

Blockbuster and Netflix

- Reed Hastings
- Bought more DVDs than anybody!
- When you are Reed Hastings, you cannot go head to head with

Blockbuster

- You can build a business that has \$10 million in revenue but that wasn't enough to challenge a multi-**billion** dollar business like Blockbuster
- Blockbuster would have the best shopping centers all across the country.
- Why is it that Blockbuster is now out of business and Netflix is flourishing?
- The vast majority of movie rentals were still on VHS tapes at the time.
- If you were Reed Hastings and building a brand new business in 1997, think about what is the future of technology
- Being a promoter and having a smaller opportunity can be very powerful!

Six Critical Dimensions of Business Practice

- Strategic Orientation
- Commitment to Opportunity
- Resource commitment process
- What things do you need to commit to that process?
- You can be a very established business that has less incentive to pursue a certain opportunity, so this is a powerful set of frameworks

Why Study Entrepreneurship?

- They didn't have classes like this when Wilson was an engineering major (Virginia Tech)
- Nathan Wilson read a bunch of books and they asked what is the one thing you need to have a business?
- A customer!
- What is the one thing you need before you start a product?
- Is it innate? Is it something we are born with?

Alfred Sloan - built General Motors to what we know it is from 1908 to the 1950s

- Are there things we can draw from this?

It is intimidating to have an initial vision to start entrepreneurship

Nathan Wilson - when he taught this in 2012, there was an article and you had one business school professional talking about the pitfalls and a VC guy saying the best class is real life.

Grimm - there is an in-class lecture portion and some of the frameworks. For the discussion section, you will go into teams and do an entrepreneurial idea and you are in a classroom environment.

Current Entrepreneurship Examples

- Common themes as you look back through history
- Business landscape is always changing and Wilson is dreaming about the first day of class and if you cite an entrepreneurial car company i.e. Tesla
- Tesla just passed Ford for the first time today (4/4/17)!
- They didn't reinvent the concept of what a car was, but interestingly enough, one of the biggest core competencies was that Ford has gasoline combustion engines
- Lots of patents, intellectual property
- Literally billions of dollars of research and I don't care about gasoline at all.
- More difficult for GM or Ford because they are trustees here

California Steers Agenda on Cleaner Cars

- 17.5 M light vehicles sold in 2016
- The small sliver of the pie is electric/plug-in hybrid
- Potential and it is interesting with the dominant part of the market.
- Why haven't GM and Ford jumped on all electric vehicles
- Put things into perspective and Tesla can be an interesting test case
- Outside the box company that Nathan Wilson founded
- 5, 6 years ago and I am going to buy a minor league baseball team and connect people together.
- What do you mean buy a baseball team?
- We are angel investors and VCs, who does that?
- He had an answer for everything though!
- Steve Ballmer (LA Clippers owner)
- Minor League baseball teams are in small towns and this could be tied into fantasy sports
- You can pick the starting pitcher in the lineup and this was

Grimm

- A different take on a problem that has been out for a while, and fill out your TPS reports!

Entrepreneurship - Thinking Outside of the Box

- Put your jello shots in
- Global edible insect market was valued at \$424 million in 2016
- There is actually a company that says Americans should eat more bugs (wtf...)

Video:

- Many Americans don't want to eat bugs (who the fuck wants to do that?)
- Warehouse in Austin where they grow their crickets in mass and a high source of protein
- This is an out of the box idea and growing grasshoppers in a warehouse
- He has never had a serious investor who has told him he was crazy or laugh at him or throw it out of the room
- Crickets are more space efficient

Entrepreneurs Do Three Things Video:

0. Entrepreneurs create new ideas that have never been **innovated** before
 - "Birth the innovation"
0. When new firms are started, they create jobs.
 - New firms create about 3 million jobs a year
0. Entrepreneurs make everyone relatively richer

New Firm Formation*

- About 500,000 new companies formed annually

Job Creation in New Small Firms*

- This is where the net wealth of society comes from and this is where the jobs come from
- There is a kind of big emphasis on small firms
- Why does the government care if I am a successful entrepreneur

Intro to S. Grimm

Education (the formal kind)

- BA & BS, Electrical Engineering
 - Joined Northrop Grumman
 - Did MS at Electrical Engineering Communications
 - MBA, Entrepreneurship
-
- They were doing a new power amplifier for the cellphone and he was doing the design
 - Doing all the specs and pretty much right about there to get the packaging and into Nokia phones
 - Let's talk about the economics of it and they estimated about a \$1
 - They needed it to be \$0.25
 - They had been working on this for multiple years and the market has changed.
 - If it isn't \$0.25, we cannot make any money of it!
 - In order for it to be packaged, they had to kill the project!
 - It dawned on Grimm that the business part of it really matters.
 - If you are 10% better, I may not care if it affects the production costs!
 - These are the things that start coming into play

- Goal is to gauge if you are working for Google or a startup you want to build or a fast-growing startup
 - Do they understand their market and customers who they are trying to target?
 - If you understand the business aspects of it, you can be better informed about what projects you take on and where you see yourself later on

Wilson

- Sometimes, the people who don't care about entrepreneurship is long gone!
- Modern engineering is heavily tied into one of the business issues and you have to sell your product!
 - The ability to work solely as an engineer without any idea of entrepreneurship is slowly dying

Grimm

- Northrop Grumman
- Build B2 stealth bomber, satellites, and military spending
- Velocium
- Commercial facing sales division
- Sold semiconductor chips to these companies
- Worked both on the chips and some of the foundry services they were trying to provide.
 - His role:
 - Identify and develop new products
 - Get requirements to determine what kinds of products you want.
 - Get involved in marketing & sales
 - Entrepreneurship startup company within a large corporation

Startup Consulting at UCLA

- Worked for UCLA's Institute for Technology Advancement
- How do we get technology out to the marketplace?
- What market should they go after?
- Work with them on how to craft their pitches, financial models, presentations, etc.
 - Med devices, mobile apps, clean tech, etc.
 - Grimm was a involved in the NSF Innovation Corps Regional Node (LA Node)
- Educate engineers and scientists on entrepreneurship

ITA Startup Companies

- What kind of funding is right for their type of company
- Pitch to the investors of which company you have the best amount of funding from
 - Make the right introductions rather than taking a ton of cash rather than from anybody who doesn't have a clue about it!

- Great investor that gave me 20% more than the other guy.
- They can make introductions and we harp on finding the right investor.

Current roles (CFO)

- BruinPatch - Long Lasting Pothole Repair Material
- Working on fixing potholes around UCLA
- CrayTex - The Carbon Fiber Replacement
- Involved in startups as well as teaching now

Problem

- Satellites
- Weight == \$\$

Competitive Advantage

- CrayTex
- Stronger than Aluminum but about half the weight
- Better weight ratio than Carbon
- Combines the best of Aluminum and Carbon

Technology

- It fits seamlessly with customer integration

Seamless integration into Carbon Fiber Production

- Doesn't matter if you are 10-20% better, find out how they are doing it!
- If you don't have to do anything differently, then that 10-20% looks a lot more interesting

Market

- US Market:
- We have a beachhead market (U.S. government satellite structures which is about \$70 MM)
- USG Aerospace & Defense is about ~\$170 MM
- US Satellite Structures ~\$360 MM
- Might NOT be a ~\$1 Billion market

Grimm is NOT building satellites; he is merely providing the materials for the structure

Wilson - testing QA equipment

- There is \$793 billion in pharmaceuticals in the U.S.

Q. Why are we considering only the U.S. market?

A. The Department of Defense is the one funding the project

- Look to see what you can reasonably achieve!
- It really depends on the industry you are trying to break into

Wilson: Who is going to be your first customer?

- What is the total size of the market outside of that.
- If you cannot get the first customer signed up, you will be out of business!
- You kind of need both to be interesting.

1st Half

- Create a business model for your team
- Emphasis on high-level

Focus on the 1st Half: Business Model Canvas

- Understand the framework and apply this to your own entrepreneurially venture for this quarter

2nd Half

- Talk about more practical items like IP, securing access rights to it
- More nuts and bolts

Course Discussions Objective: The Best Class is Real Life

- We are expecting you to do customer interviews!
- Emphasizing the experiential nature of entrepreneurship
- Customer and ecosystem interviews

Customer Interviews

- Each team member is expected to conduct 10 interviews
- Try to solve a problem for it!
- Write up your interviews and why you interviewed them.
- Name and occupation of interviewee
- A brief summary of the interview
- **Make sure your idea is technically possible in the near future!**
- Find something of interest to you :)

Discussion 1: 60 Second Pitch

- Create elevator pitch for an original business idea (individual) and present in discussion
- Focus on:
- Succinct summary of the idea
- Potential Customers
- Value of those customers
- GOAL: To attract teammates to you idea!

If you cannot convince someone to be on your team, then you cannot convince anyone to give you money!

- Bring in ideas that you are actively working on, but make sure you agree with your teammates

Grimm: Discussion 1: 60 Second Pitch

- Try to fix potholes
- Huge problem!
- Communicate with the audience
- Appeal to their conscience

Mistakes:

- Professor Grimm didn't introduce himself
- Try to convince people to join you
- Don't be shy because everyone has to pitch!
- You don't have a choice so this is an opportunity to spend some time thinking about

Each week - you will be requested to present (Week 3, 4, 7, 8)

- These are graded and the others allow you to have one absence!

Finish up with some final exam prep and midterm review!

Socially good idea is fine but it still has to have a business plan!

- Capitalist - make your money!
- There will be costs and you have to figure out a way to pay for those costs!
- Competitive matrices and differentiation from other companies

Every team should present at least once in lecture

Exams are based heavily on assigned readings!

- Purchase these.
- Closed book exams
- People over-rely on Google
- We can all do Google searches
- They are NOT going to be impressed if you Google everything

W 1 R Lec 4-6-17

- Be prepared to have a 60 second pitch and have a group of 5-6 people per group.

Example Project: Affinity

- Pitch your idea to the entire group and throughout the quarter, you are going to modify it.

Problem (entrepreneurs)

- Find the right angel investor to invest in your company
- They have a lot of emails and phone calls
- 50 meetings for one deal to go
- Meet 50 angel investors to find that one person you want to talk to

- Inefficient feedback loop and it could take about a year to come back to your response

Problem (angel investor)

- Go to 2-3 pitch competitions per year and it wasn't efficient for them
- Hundreds of emails that range from "I have a great idea that I came up with in the shower"
- Deal management - start looking at how your traction is and you have to spend time seeing what the entrepreneur sends them
- You cannot do this with 20 companies a day!

Solution

- If you are an angel investor, we will help you pinpoint the investor, and this isn't enough yet to give it back to the customer.
- Instead of having every single company do financial statements and marketing, have some sort of template.

Top 3 Investor Criteria and Corresponding Features

- Look at the idea and the team
- What is their personality?
- Are they looking for a job or are they really into their idea?
- Once you see the passion, you look at finances and the traction

Operations

- We have a mobile platform from marketing services and some sort of freemium model

Competitive Assessment

- Match you to the investor and let the entrepreneur give you feedback
- Deal flow management
- Regulatory Filings
- This shows that our idea actually gives more value to our customer than any other competition here

Total Addressable Market

1st Year Target Market

- Target the 5 major cities in California

Marketing & Sales

- We asked entrepreneurs if we would see an ad of an app on Instagram, would you try it out?

Financial Analysis: App Development Costs

- You need a cloud based service with a safety system with 4 Computer Scientists working for us

- Data storage and backups - need a way of storing all that data in case something crashed
- Since we have sensitive information, we needed an extra \$11,000 to wipe a device cache remotely

Revenue Model

- Extra, paid in-app services

Bottom Line

- Investors already have a lot of work, so it is hard to convince them to use our app.

Iterative process - adapt it later on and sell it off.

- These are actually in-person interviews! So you have to talk to them in person!

Pivots are things that pivot big chunks of your business model and you may change your revenue model

- PayPal actually started as a corporate encryption model

It is hard to get people excited about new things

- Only so many companies that are high-growth every year.

Agenda

- Background of Prof. Wilson
- Important to understand the experience of the person teaching it

Let's imagine that what she is going to do is start a service for people to rent furniture

- Imagine it is for on-campus use (dorm furniture)
- Our advisor for the project is now doing a capstone project to work on this business

- What do you mean the cost of customer acquisition?
- Allen had some cost of acquisition to get some person to join.
- Our advisor said this is the main thing to focus on - customer acquisition costs

How much does it cost Tinder for the utility?

- It is good to know the background of the entrepreneur giving the advice

My Entrepreneurial Background

- Econo-crete Construction, Inc. (1968-1981)
- Founded by his dad in 1968 and failed in the recession of 1981
- 1981 was worse than the "Great Recession" and the unemployment rate was high at the time.
- Entrepreneurship has a huge impact on you and your family

Parents' house was adjacent to the shop next to his dad's business

- Bankruptcy sale and the lawnmower was owned by the company
- A friend had an upper limit and got out big
- Nathan Wilson was 8 years old and he had to realize the aspects on the

impact of this

- This is a horrifying story and he doesn't want to see a lawnmower get hauled away by a stranger
- You have a mix and blur of personal life and business

First management conference

- Come in a midstream of this conversation and hear a woman who is talking about entrepreneurs
- "Well, entrepreneurs only identify with their company if it successful."
- **This is bullshit**

Nathan Wilson was working in the accountant office filing papers

- Why don't you NOT come in tomorrow?
- His mom fired him and hired Nathan's replacement
- Luckily, Nathan got his job back

Wilson's Snowcones

- 1984
- Earn money to create arcade games!
- Take an Xbox and put quarters in it!
- Started in grandmother's front yard and there is hand shaved ice (razor blade in metal container and it is literally like snow)

Differentiation

- Snowcones were \$0.25 but Wilson's snow cones were \$0.50
- Use differentiation of product!
- Shaved ice > crushed ice
- Toppings were better
- "Cute kid" factor
- **Charge customers more and they have to pay it!**

You aren't going to die if you buy our product so you can charge a premium of it.

- We were only double, so it wasn't a Hepatitis C factor
- Seafoam is made with brown sugar and a ton of sugar!
- Nathan ate 20 snow cones a night!

1987 Brother Bails - Electric Motor to the Rescue

- Nathan was 13 year old and working every night in the summer
- Money was tight for the parents at this point and he became a one man show and make more than one size.

- Put in a piece of ice and he put in a chunk of ice and 95% of it was as good as hand shaved ice
- Renamed to “Nathan’s Snowcones”

7 Flavors on the stand, so how did we pick these flavors to have at the snow cone stand?

- Interviewed the neighborhood and asked what the flavors of the snow cones are!
- Experimentation in trying some flavors
- Lemon and lemon-lime

Listen to your customer feedback

- Creating a chocolate snow cone
- His mom made up some simple syrup and watered it down with other sugar water to seep through the ice.

Number one selling snow cone was chocolate!

Nathan’s Software

- Software from that paper in 1990 and has one of those home phone numbers with 5 of the most popular software titles in the store.
- There was NO Amazon yet in 1990!
- Amazon took 15 years of making no money!
- Walmart made more in one quarter (3 months) than Amazon had made in the entire existence of the company prior to 2015
- Amazon’s total profits were about \$2.5 billion a year and a half ago
- Jeff Bezos would have said “I could have always made money, I was just creating my business”
- Google made NO money for about 5-6 years

Microsoft

- Within 10 years, they were massively profitable

Amazon

- Complete outlier because they haven’t followed this, but why did Amazon grow so quickly because they were able to sell stuff at-cost and even lose money.
- If Amazon had been profitable at the beginning, they would have been a far smaller company than it is now
- Amazon wins because of convenience and it is cheaper!

Uber

- I like Uber as a service!
- Even if Uber was twice as expensive, it would still be cheaper than a cab.
- To get to DTLA on a Friday or Saturday, that has got to be a \$60-\$80 cab

ride

- Bus took an hour and a half to DTLA for about \$2 and don't pay \$80 to get to DTLA!
- Uber Pool in LA (\$15 flat fee from Santa Monica to DTLA)
- Is Uber building a viable business but you tell me what happens if Uber doubles its prices because they can no longer lose money

Facebook has this graph as well; it is NOT possible to build a big, successful company without this graph unless you are **Amazon!**

B.S. in MechE at Virginia Tech
MS & Ph.D in MechE at Stanford
MBA at UCLA Anderson

Cardiovascular Blood Flow Simulation

- Build a model valid for numerical simulation

Simulating blood flow so the magnitude of the velocity information is simulated for this given patient

- At Stanford, Wilson was interested in studying a company and they were a bunch of engineers who did blood flow simulation

Application Pull

- Pain or gain that is of value to the customer

Technology Push

- Hammer looking for a nail
- How do I start a company from that?
- What are the potential markets I could go after?

From a CT scan, you get anatomy, based on absorption of X-rays and you can see a clot and quantify it from here.

- Beautiful example of the tradeoffs you have to be aware of

CardioVascular Simulation, Inc.

- A lot of expertise here, so they sold software to academics
- Horrible idea!
- Spent a fortune on commercial licenses or libraries and a 12-18 month sales cycle
- The movie that Wilson showed earlier displayed anatomy work!
- Cluster of machines so not that profitable!
- Standard of care was a metal wire into your artery and assess it with computer software to simulate it
- Try to bring in some VC investment but then we found an angel investor
- He turned out to be a Senior VP for Silicon Graphics and a CEO of a publicly traded compiler company back in the day

- **No experience in healthcare though!**

Heartflow, Inc.

- Cardiovascular Simulation, Inc.
- Changes name to **Heartflow**
- Redwood City (SF Bay Area) with (100+ Employees, targeting 200 in the “near term”)
- The week after Thanksgiving, they fired 50 people after one day.
- If you are building a high-flier kind of startup, they were building a company to sell things!
 - It sounds great to raise \$100 million but you have to promise it is a big market to raise \$100 million!
 - Build up a beautiful sales team and results mean you cannot get approval!

Open Source Medical Software Corporation

- Picture of first office in San Francisco
- 3rd and Market St. in San Francisco!

Needs

- Contracted us to build a repository of medical imaging data of the body
- Pulmonary arteries into the lungs and do some small animal work as well
- Subproject on single-ventricle disease

OSMSC August 2013

- Architects focus on the cool

W 1 Dis 4-7-17

Bin Li

bli3@ucla.edu

Contact him through email

Interviewing people shouldn't take too long

Are the readings super relevant for the midterm and final?

- **Yes!**
- It is also lecture based, but the MC is primarily reading and multiple choice

One person bought the course pack

- Don't try to ask college students!
- Only ask some people!
- We can interview the dining hall people or the chef.
- Interview people other than students

W 2 T Lec 4-11-17

- You should be in a team by Friday

Apr. 11 - Introduction to Business Model Canvas; The Value Proposition Canvas; The Environment Map

One Viewpoint on Entrepreneurship

Source of Business Ideas

- Medical doctor or surgeon who has some sort of difficulty
- Use a specially designed tool that will help you save time and make it easier
- This is where you have an idea and can start a business around it
- Some people really want to start a company, but now you want to find something to do!
- Entrepreneurs tend to be more middle-aged (not straight outta college, but not in the 30s)
- You need some experience in the market first but you still need to be relatively fresh!

What Led To Your Business Idea?

- B to C plays if you are an undergraduate because it was targeted to you i.e. Facebook out of Mark Zuckerberg's dorm room

Pharmaceutical industry is a complete outlier!

- It is illegal to sell stuff until you get FDA clearance
- Well-defined with a lot of risk, but realize that if you have a blockbuster drug that works, you are going to have billions of dollars of revenue next to no cost of making it

Snapchat

- Eyeballs and getting millions of people in your network
- Real model for Google as well was zero revenue (didn't have ads to make revenue until right before they IPO'ed)

Q. Around what time do startups disintegrate?

A. Cliche that 80% of startups fail say that they fail quick. Hard to define failure and what a startup is.

Too Much Profit Can Doom Your Company (HBR 6/1/15)

- U.S. can go bankrupt and Microsoft is so versatile that they can pay your obligations
- Exxon Mobil and Microsoft were the two companies that could do this
- Jeff Bezos said "Your magic is my opportunity."
- Amazon will grow forever

Amazon's Long-Term Growth

- Amazon's early years showed little long-term growth

Amazon vs Walmart - Market Cap on July 24, 2015

- The point of that is that you would have trouble finding very many companies that would follow this kind of trajectory
- Amazon is an interesting outlier but NOT a normal, high-growth venture
- Very strong in cloud services!
- Interesting story, but Amazon's story is outside of this class
- Interesting point in small business versus high growth

Tips for the Entrepreneur

- Have an idea that people are interested in and be passionate about it!
- Good deals always gets funded
- Be an expert in all aspects of your business was good
- Your labor is cheap and spend a long time becoming experts

VC Bandwagon

- That's where you are going after an area that is just hot!
- Virtual Reality, drones, driverless cars
- Wearables and watches
- Counterargument: It is important to pay attention to market trends
- Plenty of industries have extremely saturated competition, which makes it hard to break in and nobody can make any money!

1997

- Larry Page and Sergey Brin got involved in Search even though there were already competitors in this market like Yahoo!
- When you start a company, you have a real solution to a real problem to break into the market
- Only then, can you build it!

Definition of a Business Model*

Business Model: Describes the rationale of how an organization creates, delivers, and captures value.

- How am I generating revenues for myself?

Integrated Suite of Tools

- The Environment Map
- Helps you understand the environment you are in
- Bound by regulations, legal issues
- 30k foot view
- The Business Model Canvas
- Business blocks that help you define your business model

- Here are the big, building blocks of your project
- 10k foot view
- The Value Proposition Canvas
- What pain and gain are my customers receiving?
- Court level view

You can have certain industries that are much more competitive and disruptive competition versus cooperative competition

Environment Map

- Those businesses were looking to provide value to customers!

AirBNB - enough people say we want this, we will bend the will of the government
 Uber - was successful in the New York City in bending the will of the city regulations

Youtube - didn't necessarily win the lawsuit, but they changed their company to fit into the law

- The day after they got bought by Google, Viacom filed an \$8 billion lawsuit against Youtube
- Before that, they were a startup with no money

In order to succeed, a great business idea needs a great business model, and **those two are NOT the same thing!**

- Your business model needs to be stable and financially sustainable
- Infrastructure must be able to withstand any pressure points
- Your first work is to find the right business model and try to explore, manage, and plan for it
- What if there was a tool to help you plan for this and stress test?

Low-cost airlines

- Your entire business model should work in concert so that if you try to copy or emulate just a few blocks, it won't work
- United flies out of the major airports with 15 different types of aircraft
- How many different types of aircraft does Southwest Airlines have?
- Just 1 type!
- If you are Southwest, you only have spare parts for Boeing 737s

They flew to these obscure airports like Oakland out in the Midwest or random airports that no one flew into.

- Airports would pay them to bring in flights and pass through the terminal
- All these parts have to work in concert and you cannot expect it to work.
- Southwest eliminated assigned seating and higher frequencies of flights

In the case of a better pharmaceutical, it is the case of one block

Walmart had a better distribution and key partnerships and resources

- Delivering the exact same product but cheaper!
- Everything had to be working in concert

Customer Segments

- Defines the different groups of people or organizations an enterprise aims to reach and serve.
- Niche market
- People who build Ferraris and go from 0 to 60 in two seconds
- Things like Google where users are looking for search and you are selling to advertisers data from search

Value Propositions

- Newness
- Performance
- Personalization
- Price
- Convenience/Usability

Channels

- How am I getting the product to the customer
- Slight deviation - if I am Amazon, the distribution channel is using FedEx or UPS
- Talk about awareness, evaluation, purchase, delivery, and after sales
- You may have very different points like awareness and a physical product

Revenue Streams

- T-Mobile - who has more value to a company?
- The recurring revenue brings you more money!
- Most people don't change providers when they switch
- Companies that have had major success switching to Transaction revenues to Recurring revenues
- Spotify
- Adobe
- **Dollar Shave Club**

Key Resources

- If I have a widget factory, the case of Southwest Airlines would have a few things like the maintenance crews or spare parts for planes.

Value Proposition Canvas & Business Model Canvas

- Value Proposition Canvas
- Customers have jobs to be done
- College students have classes, might be looking for jobs, might be looking for love
- There could be things that cause gains in knowledge i.e. going to class or pains i.e. studying for exams

- Create products and services that solve pains or provide gains to customers
- Look at this as the circle and the square
- **Do NOT change my customers! Rather, observe them and adhere your canvasses after them!**

This is what we are going to be doing on Friday!

- Here is our initial customer segment and here are the pains and gains they have.
- We are going to create gains and solve problems
- You are NOT going to solve all the problems for everyone!

W 2 R Lec 4-13-17

Three Other Common Approaches to Launching a Business

- Bring your baby out to the world and all is well!
- You bring it out and it turns out the project you are trying to build is NOT what the customers actually value.
- You have to iterate, pivot, or change the product now!

Hugh Hefner was a writer in college

- When you get to real entrepreneur's stories, it is always fascinating to see what you create and what is luck!

Decades-Old Formula vs. Lean Startup

- Traditional
- In 2003, Wilson was in a talk at Stanford and they brought in the founder of Friendster (competitor of MySpace)
 - The guy was speaking and someone in the audience said there was a competitor working in **stealth mode** in Menlo Park
 - No one batted an eye and see if people sign up!
 - Lean Startup
 - Bootstrap and Ruby on Rails
 - What did that cost in 1999?
 - Like \$1 million!
 - You would have bought SGI workstations and you needed stable computers
- You would have had to buy server space and software
- Show MVP to the audience

Testing the Circle (Customers)

- Some customers care about what we are doing before we build the product
- Test that I understand my customers and create mockups to see the User Experience (UX)

Testing the Rectangle (Business Model)

- Other elements of your business model need to worry about testing your channels and are you right about your partnerships and key resources?
- Test all the nine building blocks of your business model

Testing Principles

- Business model canvas is intended to be very visual in order to help you see things visibly as part of the process
- Some people do the business model canvas on post-it notes to make it easily adaptable
- Make your testing very visual
- Want the lowest fidelity model and there will be a smokescreen (making a dummy website)
- Friend had an idea for software for day trading to bring tools that are used by investment professionals to the home
- He built the frontend and bought some Google Adwords to see how many people would be enticed

Extract Your Hypotheses

- Creating these for team projects!
- They need to be falsifiable in some way, so how do you disprove something?

Design Your Experiments with the Test Card

- We want to verify and track the intended audience
- Then, we will test it somewhere
- We want to quantify the values we obtain
- Lastly, we can re-evaluate whether or not our business plan is viable

Five Data Traps to Avoid

- There is a false positive trap!
- Let's imagine you are creating a test card, what if you set your goals too low?

Hypothesis-Driven Entrepreneurship / Lean Startup

- Hypothesis-driven entrepreneurship: Helps to maximize feedback about their business model's viability.
- Lean startup: Organizations that follow the principles of hypothesis-driven entrepreneurship.

Customer Development

- When you are a startup like Red Bull 15 years ago, you are trying to search how am I going to get these energy drinks into the market?

Customer Discovery

- You are trying to find the problem-solution fit!

- If you can build a certain product with a certain set of value, people would be interested in it.

Customer validation

- Getting some traction in the market and show that customers are willing to buy your product!
- If you are unsuccessful, you can try to pivot towards customer needs
- The problem is that people are volatile or might not be what they say!

Customer Discovery Goals

- There are tradeoffs and alternatives you must always consider!
- Propose Sales / Marketing Roadmap
- Customer Discovery Phase: You are proposing a sales and marketing demand
- Imagine if I am Dropbox and I am trying to get people to use my product
- Adwords was very unsustainable to Dropbox, and they eventually settled on viral marketing and word of mouth

Lean Startup

- Flow startup
- Prioritizing tests, running tests and learning from them
- **One of the terms *pivot* means to change one or more blocks!**
- If you change 9 out of 9 blocks, this is probably a “perish, start something new” sort of case

Step 2: Translate the Vision into Hypotheses

- A/B Testing: used for your testing hypotheses along the way

Step 3: Specify MVP Tests

- Minimum Viable Product (MVP): You can constrain the product functionality or to constrain the operational capability
- Constraining product functionality: Only putting a certain number of features
- I am developing this new software that is fully automated and put it into a planning software
- Before I input your 1040 tax return, I will make you re-enter the stuff manually
- Doing a subset of the problem

Concerns about MVPs

- Stolen ideas is exposure to Idea Theft
- Ideas are typically worthless unless executed

Step 6: Persevere, Pivot, or Perish

- Perishing

- Is it possible where someone may prove a product market fit and the company still perishes?

Limits to Lean Startup Methods

- Do NOT use the lean startup method here:
- When uncertainty about customer demand is low
- New types of fracking? Cures for cancer? NO! We need these things!

Goal of this class: Problem-Solution Fit!

- You want your product to be either a pain reliever or a gain fulfiller

Three Kinds of Fit

- 1 On Paper (Problem-Solution Fit)
- 2 In the Market (Product-Market Fit)

W 2 Dis 4-14-17

- Customer gain - something that is beneficial to the customer
- Match it one to one with the left side
- One of the triangles is called products and put some features in it
- Pain relievers - how will your product relieve pain for the customer
- Some of the customer jobs will see the annoyance and match it up and see which customer segments you are targeting
- See if your product has targeted customer segments and try to interview them for next week

Target market: someone we can talk to

- UCLA Dining
- Westwood restaurants

W 3 R Lec 4-20-17

- Submit slides for tomorrow
- Starting next week, two teams will be presenting per lecture and about 5-7 minute presentation telling what your idea is and what are the problems with building the product.
- We will give you a template

Snap Inc. revenue

- Five-fold increase is pretty impressive!
- No wonder this company is everyone's darling!
- The only problem Wilson sees with this is when you get down to the income before tax
- They are bleeding money!
- It is impressive if you look at an annualized basis because now you are kind of talking about an operating loss of -\$180 million
- Very few people have actually transferred over to Instagram Stories

Facebook has a ton of information about you, so if you are going to sell targeted ads, then Facebook has way more information than on Snapchat.

Strategy: Frameworks, Theories, and Texts

- Business model canvas for entrepreneurship with frameworks and theories

What is Strategy?

Strategy: The creation of a unique and valuable position, involving a different set of activities.

Spirit Airlines is just trying to make everything cheap and a la carte.

- They don't even provide free water!
- Water in the bathroom is safe to drink, but if you want to drink a bottle, then you have to pay some money (you cheap fuck xD)
- It is important to know who your customers are and who they aren't
- The only people flying on Spirit are ultra-cost conscious

Strategy is NOT really operational effectiveness.

- Doing activities that will make your product or service faster that are easily and can be effectively copied by your rivals.
- All companies work on optimizing their process and eliminating unnecessary costs
- Spirit Airlines is NOT just the cost of the water, it is the airports they fly into and the fact that they charge for every aspect of it.

SWOT Analysis

- What is their change in technology and if my business is selling pot, my business can become legal and that is an opportunity
- Certainly, the threats are going to jail since pot is still illegal!
- The important thing about opportunities and threats is that it comes from the environment you are operating in.

Three Generic Strategies

- Differentiation
- Overall cost leadership
- Focus

This seems like it is a crisis but there probably isn't a leader in UCLA saying that the strategy is to look at this figure and identify things like this.

The Kernel of Good Strategy

- Overall approach and a coherent set of actions
- For startups, your actions work in concert

Blue Ocean Strategy

- Red oceans: represents all industries in existence
- Known market space
- Blue oceans: represents every potential industry NOT in existence

Blue Ocean Strategy (cont.)

- The line about stimulating the demand side is important versus just stealing customers from someone else
- Stimulating the demand side is growing the space

Example: U.S. Wine Industry

- \$20B annually
- Top 8 companies produced 3/4th of the wine, and 1600+ wineries produce the remaining 1/4th

Competitive Factors

- Prestige of a wine's vineyard and the legacy

[yellow tail] Goals

- People chose beer because it was easier to pick!
- Budweiser and standard types of brands
- In the U.S., it was easier for people to enjoy on a daily basis

The Four Actions Framework of Blue Ocean Strategy

- How do I reduce some of the factors below industry standard?
- How will I raise certain things above industry standards?
- How will I eliminate things to take our product above the value curve?

Eliminate-Reduce-Raise-Create Grid [yellow tail]

- Eliminate aging quality
- Use non-traditional and guerrilla marketing techniques

The Strategy Canvas for [yellow tail]

- They are actually doing less marketing than some of the budget wines and then they create ease of selection and ease of drinking
- Fun and adventure idea (Crocodile Dundee swag and Australian themed gear)
- Focus on making it easy to pick
- They sold two types: red and white
- They sold a box with 6 red and 6 white in it that was all about ease of selection

Blue Ocean Strategy: Cirque du Soleil

- Eliminate
- Star Performers that cost money
- Eliminate the animal shows because this saves me a lot of cost

- If I know what it costs to maintain an elephant, I will create more of a theme and refined environment

Disruptive Innovation

Technology Push vs. Demand Pull

- Heartflow was technology push and we wanted to find a market for it!
- Definition of technology push is when you have the engineers advocating for a product
- Demand pull
- An application like curing cancer
- People dying of cancer is a bad thing for society.
- Technology can take on a tremendous amount of forms
- Using the body's own immune system and using it to kill

Diffusion of Innovations (1962)

S-Curve

- Talk about bell shaped adoption and the cumulative adoption that is stacked up
- This is kind of empirical curve and if you look at some real penetration technologies, you can see this S-shaped curve over time.

Crossing the Chasm (Geoffrey A. Moore, 1991)

- Chasm between early visionaries and the pragmatists
- People were getting some adoption here and having trouble transitioning over the chasm to an early majority

The Early Market

- Technology Enthusiasts: Technology is bound to improve their lives later on.

The Mainstream Market

- Pragmatists: Make the majority of all technology infrastructure purchases.
- Conservatives: Pessimistic and only upgrade under duress.
- Skeptics: Ever-present critics who you sell around

Classical Marketing Approach to the Tech Adopt. Life Cycle

- Get the visionaries attention and do whatever it takes to satisfy them.
- Get the bulk of the revenue serving the pragmatists

The Chasm

- Chasm that were initially warmly welcomed by early adopters but then they fell into the chasm.
- Visionaries thinks that pragmatists are pedestrian, and pragmatists think visionaries are dangerous.

Critical Chasm Insight

- What pragmatists really want is 100% solution to their problem - something that works for what they are using it for.
- Technology enthusiasts might be able to get a product with a few bugs and they want to play around with it
- Pragmatists want their lives to get better right away with a complete solution!
- Problem is that there was a lack of focus and they would do polls of potential customers and the 4/5 most likely customer segments
- 80% of the features and a wide focus isn't what people wanted!
- **Build a complete product that works for a niche market!**
- **Be the 100% solution for the given market**

W 4 T Lec 4-25-17

- Midterm material will come from the lecture
- Review session will come on Thursday

Five Common Business Model Patterns

- The Long Tail
- Multi-Sided Platforms
- FREE as a Business Model

The Long Tail

- Imagine selling books like fiction and non-fiction
- Electronic cars - battery powered cars
- What is the main metrics that people use to evaluate an automobile?
- A distance you can travel in a single tank of gas
- Lack of supply of used vehicles in electric cars, so on average, these vehicles tend to be more expensive
- One of the challenges for those with a single vehicle is distance on one tank of fuel
- About 200 miles is a gold number!
- Current demand that is more or less static at 200 miles
- **To sell certain cars that were more expensive, you needed a new value proposition!**
- **Green factor and I don't want to use a car that is bad for the environment**
- They have improved the technology for Tesla
- Once you have reached this point, this is what EV look like

Clayton Christensen gave a talk at USC a while back

- What industries can be disrupted and what cannot?
- Hotel industry - you cannot take the Ritz-Carlton experience with concierge and \$3,000 mattress and high touch service and take it down to a Motel 6
- Those attributes that it is creating inherently have costs

- There are cutaways and sound effects that they are producing, which is way better than what he was doing in real life.

Imagine if someone had the selectivity of UCLA, delivered it online at 1/3 of the cost

- The place we might see this first is online business schools i.e. Harvard Business School online at a cheaper price or the #25 program in person at full price
- You have to adjust to living with other people!
- You can absolutely replicate the filter online by having the exact same criteria

The Long Tail Diagram

- Walmart will focus on selling copies that generate more profit
- They will abandon the rest of the books, and this is where other companies can enter into these niche markets
- Because there is less competition there, they can make potential profit off that even though their market isn't worth as much

Anatomy of the Long Tail

- Look at the number of plays of songs and all this digital media

DVD Retail Economics*

- Walmart is paying \$19 on average for the new release and selling it for \$16.
- How does this make sense?
- Over time, the studios start reducing the price because they are selling fewer volumes of it, but the price didn't change that much when it came out with a new release
- If the price stays about the same and the wholesale cost goes down, then your profit margin goes way up!
- Initially, I am operating at a negative, but by the end, how is it that Walmart is selling at a loss.
- They don't want a bad reputation of having bad movies
- I will sell you a New York Times bestseller under cost, and it would be difficult for Amazon to compete with this

Multi-Sided Platforms

- Only have values to the customers if other groups exist
- Google
- Door Dash
- Lyft

FREE as a Business Model

- Huge for CS people!
- Freemium model for CS people
- Offer a product for free and make some features locked, and some people will pay to have those features

- **Spotify**
- Red Hat does more on the side of support and there are companies like BTK (which is a visualization toolkit) that has specific customizations that are paid for

Q. Is it common for a lot of these newer companies to lose money at first i.e. Amazon or Spotify?

A. Yeah it is! It is absolutely common.

Q. How did Spotify make money in the first place?

A. We have raised billions of dollars to invest and Professor Wilson is skeptical of this idea too.

- The standard model for venture capital investors are home runs.
- Google returned billions of dollars to people who were involved
- The belief is that if get every person in the U.S. in Spotify, we will make money somehow.
- If you get big enough, maybe Spotify becomes the dominant platform.

STP Marketing Model

- **Segment**
- Splitting up a market into smaller groups with similar product needs
- **Target**
- What segment am I going to target
- **Position**
- How am I going to position myself and what are the target market's perception of the product's key benefits

STP Marketing Model: Segments

- Known ways to segment your market
- Demographics: Age, gender, ethnicity, income
- Psychographics: personality and emotions
- Age and gender are very big, so if I am creating a certain age range, we have to be aware of that
- The Girls Next Door (reality show that Hugh Hefner had)

Segment: Customer Types

- End User
- Child could be an end user, but probably not the decision maker
- Influencer
- Recommender
- Decision Maker
- Payer
- Saboteur
- All of these roles are highly dependent on the industry we are looking into

STP Marketing Model: Positioning

- Various kinds of candy bars that vary between low-quality and high-quality and figure out where my position is in the product

STP to BMC

- Customer segments are in the customer's box and we have our value proposition and this relates to our targeting position

Channels: Physical vs Virtual

- We think of this in terms of if the product is virtual or physical
- We could have physical goods stored in a physical store
- This could be stored in a physical store
- We could order it from Amazon fresh and the channel is virtual with customers ordering it

Web Channels

- Platforms like App Stores
- Apple, Android...
- Flash Sales
- Groupon

Physical Channels

- Buying a lot of various end user products and integrating it for a certain customer base.

W 4 R Lec 4-27-17

- Midterm Questions
- Multiple-choice
- Short answer questions
- Next week in discussion will go over a midterm review

Number of Parent Plus loans has grown over time.

- The number of loans in default has grown to over 300,000

Java was a sort of bundled language - I won't have a separate toolkit for my GUI

Types of Channels

- Direct channels: could sell directly to my customers
- Distributors
- Alcohol is generally sold through local distributors
- Licensing
- I might have a series of patents that I have licensing.

Distribution Complexity

- This helps determine what your channel needs to be
- Most people know how to put in their ink toner and there isn't a lot of value in that

- Do this online or through direct sales
- If I am talking about direct solutions such as integrated software or hardware

Balancing CAC/LTV in a SaaS model

- LTV > 3x CAC
- months to recover < 12 months
- Required for capital efficiency

Why Have Partners?

- Problem with startups is that they are significantly smaller than their partners
- Startup partnering with Microsoft might not be bringing enough to the table
- Why have partners?
- Faster time to market

Types of Partners?

- Partners - Strategic Alliances
- This lets you build a whole solution such as crossing the chasm
- Early majority are looking for a whole solution to their problem
- If I am building drones, maybe I can do a hardware component and a software component
- Example

Four Critical Resources

- Am I outsourcing part of the design to others?
- What intellectual property do I need for my company?
- What is critical intellectual property for my company?

The Two Key Questions

- What's my revenue model?
- How do I **price** my product?

Competition as an influence

- How do they react and what is their reaction going to be?
- I want to create this new accounting software, but what if they change their offering
- We should NOT compete based on price alone

“Revenue First” Companies

- Imagine if I am looking at a user first company, and how would you reach to X number of users

W 5 R Lec 5-4-17

- Elon Musk is a god.

- Launched a spy satellite into space privately
- Entrepreneurs came to terms what their skillets were as a person, and you have to do the grind to motivate your team even when you don't feel it.

I'm a greedy 12-year old know it all that doesn't know shit - Krishna

W 6 T Lec 5-9-17

IP Strategy for Startups

- Huge investment in space startups
- Follow the startup scene on TechCrunch and look for disruptive space companies

What is Intellectual Property?

- Related to patents, trade secrets, and copyrights
- Patents are going to be the most valuable way to protect your technical innovation
- Patents are concrete things, where if people use the patent, then they can get in trouble

Intellectual property law is...

- Body of law that relates to creations of the mind

There are some benefits to registration for copyrights and it is very inexpensive

- Source code is a really critical issue for any software startup, and we have to emphasize how you treat source code is the biggest single factor in how much you can sell your company for
- If you use any open source software, you need to be wary of the licenses you are acquiring to actually use this software because it can devalue your project greatly.
- **The key is to know what you are doing and have policies that you can follow!**

Due diligence - when you enter into a transaction, the company that is being acquired gets asked a very extensive set of questions

- If you give untruthful answers, the buyer can try to get their money back after the transaction is closed.
- You must identify every problem your company has in this case!
- "To our knowledge, we don't infringe on other people's open sources licenses, but no guarantees on that!"

Trademarks

- For a lot of technology companies, branding is NOT something that is talked about much
- What is more valuable these days? Google's name and URL or its page rank algorithm?

- NOT everyone knows how their page rank algorithm works, but the brand of consumer facing technology companies is more important than any patents they hold.

- While the patents on the original Page Rank algorithm might be expiring in the near future, the brand name of Google will live on!

- Nothing jumps out as being problematic on this list.

- One of the quickest ways you can fail as a startup is to launch your company using someone else's brand!

- You try to get your kick starter video put together and pay filmmakers money, and you launch a social media campaign

- If a big company tries to run you out of business, it will be difficult to pivot and rebrand.

Patent

- Monopoly you get given by the government

- It doesn't entitle you to do anything

- In most situations, all a patent does is prevent other people from doing something

You have to publish how you encrypt your technique, so you do NOT want to patent this.

- Cryptography might NOT be a good thing to be patented because you don't want people to know

If you had a movie where there was a little bit of detail of how it was done, then a paper showing the science behind the movie was suffice

- If I take one reference (a movie or academic paper), what is missing?

- Are the missing elements taught somewhere else?

- What someone with an ordinary level of technical ability have been able to figure it out

Patent Troll

- Take a patent that is either weak in some way because the patent office

- They might exploit the fact that the system is very expensive

Patent Fundamentals

- Commercial robotic cleaning device

- Roombas are specifically for homes, but they don't do mopping or vacuuming

When talking to VC's, they never sign NDAs and customers don't sign NDAs either

- It is becoming increasingly commonplace

If my patent is ABC, then you have to do everything that is claimed

Anytime you are dealing with user-generated content, you have potential for copyright violations.

- You have to be careful that you insulate yourself, and you should NOT encourage your users to upload copyright-infringement content

U.S. Patent

- Information about the filing date and the priority
- This is actually the benefit of the priority date in March 1997

Hierarchies

- Claims might be a bit extra, and you put these additional claims as a fallback position in the case they are unsuccessful in validating your claim.

W 6 R Lec 5-11-17

A lot of competitors for the EcoATM Pitch

- When you trade out your old phone, you could rather just resell it back to the Apple Store for example

There is a need in this market and this is a technique that some entrepreneurs will use.

- Growing market and this is a quick way to set their expectations to certain degree

Immediate payback - time!

- As an investor, what is the robotic arm telling me?
- Possibly high-production development costs
- Intellectual property (IP)
- Maintenance is something that can be an issue

The Introduction

- Include facts, but remember to tell a story!
- If you are the Uber for X or AirBNB for Y, say that!
- Use similar products and business models

Business Plans

- Usually about 40-50 pages long
- Business Model: describes the rationale of how an organization creates, delivers, and captures value

Traditional Business Plan Outline

- Who are you working with?
- What are the nuts and bolts of your business?

W 7 T Lec 5-16-17

Types of Accounting

0. Financial Accounting: Used for everybody who might be interested in your business

- Audience looking to lend you money for investors
- 0. Managerial Accounting: government wants to see your accounts because of taxes
 - Used for planning
 - Directing
 - Controlling the business
- 0. Tax Accounting: Determines taxes

Creditors vs. Investors

Creditors

Q. What is a creditor going to make for your business?

A. Can you pay the money back? How risky are you?

- What interest rate should you charge?
- If you are a risky proposition, then I would have to go to a loan shark

Investors

- Buy or sell?
- Are you worth holding on to or not?

One set of Financial Accounting statements are used to satisfy both groups

Three Core Financial Statements

- Balance sheet
- Income statement
- Statement of cash flows

Balance Sheet Example - Netflix

- Can you convert cash within a year?
- These are your **current assets**

Apple can convert their iPhones to cash faster than Motorola can with their phones

How many customers do you need to be averaging a year to break even?

- If you are only averaging one a month, then you may need more people in order to break even.

Distributors act as a channel

- If you cannot get the distributors onboard, then you cannot get the product out.
- What about in terms of your cost?
- They may understand the pricing

W 7 R Lec 5-18-17

Financial Implications of Business Model

- Three factors determine financing needs

- Can you sell your product at the end of the day at a high enough price that you are profitable?
 - Asset intensity
 - The amount of things you need to have before you sell
 - Machinery
 - Warehousing
 - Ratio of total assets you need
 - Ways of growth?
 - If you need to grow really fast, you can raise a lot more money and eventually you won't have to raise as much
 - Companies that grow very fast are social media companies (Twitter, Facebook)
 - The reason they raised so much money was to grow very quickly

Bootstrapping

- You can only go so far and so fast and you cannot expand really quickly
- You cannot spend a lot on inventory or going into a big factory
- Focus on paying the bills rather than expanding to different markets

Debt financing

- Most likely getting loans from banks
- You can go bankrupt and they will lose all the money they loaned

Angels

- What are the advantages of knowing an angel investor?
 - Connections
 - Knowledge
 - They will go into more risky ventures

Structure of a Venture Capital Fund

- More apt to put money in if they see a good ROI
- If you have a \$10 million fund and it is a 5 year fund life, which is kind of typical, 2% annual management fee, how much does the VC make out of \$10 million?
 - \$1 million
 - $\text{<Fund life> * <Annual Management Fee>}$

Initial Public Offering (IPO)

- Transition of Private Company to a Public Company
- Help pay back employees and cash out
- What does an investment banker do?
- They perform due diligence and help price the shares accordingly

W 8 T Lec 5-23-17

Stubbs Alderton & Markiles, LLP

- Angel investors will fuel the growth of these companies and that is the kind of work we do from incorporation and mergers and acquisitions

- Skype was an early partner and they ran the sale to eBay
- Also helped sell Beats to Apple Inc!
- Use a person efficiently to keep the costs low!
- Get expert advice from people who have been down the road before.
- Hire those people and build product from there.

Corporation

- Board of directors will appoint an officer
- One person can hold more than one office - you need those offices appointed by the board
- The board can remove those officers and replace them with other people
- They are responsible for day-to-day operations with the company

W 8 R Lec 5-25-17

Q. What does option pool mean?

A. Set aside a bunch of shares to incentivize employees

Anti-Dilution

- Adjustment to the Conversion Ratio of the Preferred Stock into Common Stock applied to “down rounds” **ONLY**
- Series B came in and said I’m going to buy some stock and pay you \$0.50 per share.
- Series A will get diluted to a lower value.

Drag Along Rights

- You can force other stockholders to agree on a sale of the company

W 10 T Lec 6-6-17

- Emphasis on 2nd Half

Wilson Office Hours

6 PM - 8:30 PM

A-403

Allan-Bin Office Hours

1 - 2 PM

- Material from Krishna and guest speakers will be covered