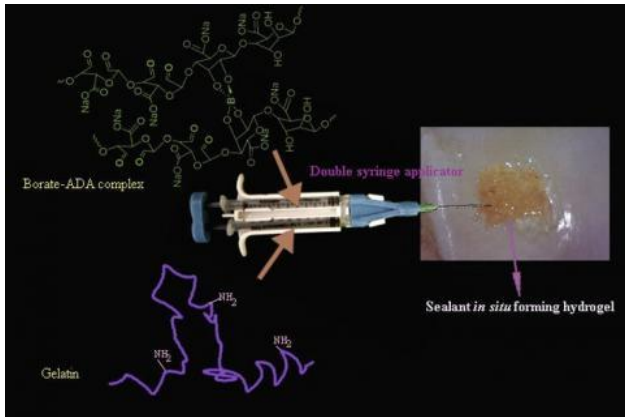
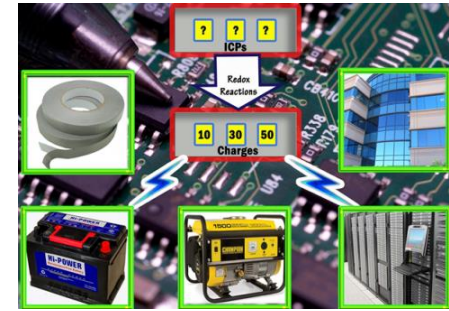
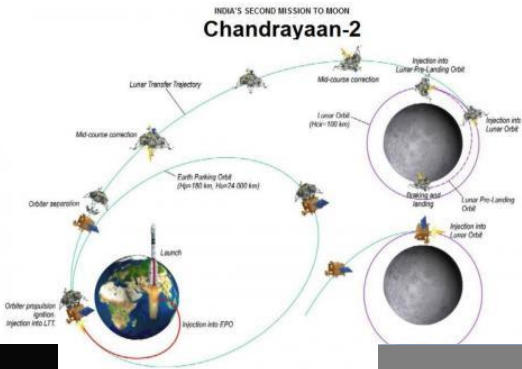
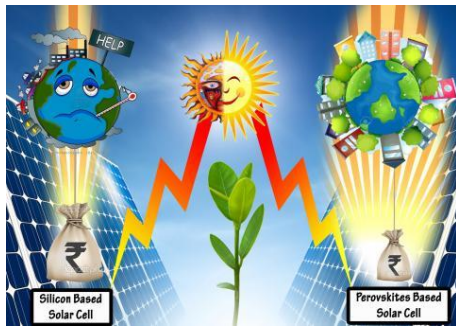


Centre for Entrepreneurship

From Idea

to

New Venture



Innovative Solutions
Providing innovative solution to solve challenging problems in Healthcare

Technology Development, Innovation and Nurturing Entrepreneurship

IIT Bombay



Desai Sethi Centre for
Entrepreneurship
Indian Institute of Technology Bombay



e-cell
iit bombay



Objectives of the Centre

- To train and develop entrepreneurs to have a positive impact on society
- Establish facilities, provide educational programs and offer micro-grants to nurture new ideas in advanced technologies
 - Create, redefine and build cutting-edge products and services
- Provide support [**Content, Context and Contacts**] to all the students and faculty in their entrepreneurial initiatives

Current Status

- Established in June 2014 as an Inter-Disciplinary Program Centre (IDPC)
- Launched two courses in AY 2014-15:
 - **ENT 201: Introduction to Entrepreneurship**
 - **ENT 202: Business Skills for Entrepreneurs**
- Launched two new courses in AY 2015-16:
 - **ENT 203: Identifying and Exploiting Opportunities**
 - **ENT 204: Developing a Proof of Concept**
- **250+** students have joined these courses
- Extensive networking with alumni and Venture Capitalists for courses and mentoring

Courses and Programs

- Introduction to Entrepreneurship
- Business Skills for Entrepreneurs
- Identifying and Exploiting Opportunities
- Developing Proof of Concept
- Entrepreneurial Marketing
- Innovation and Creativity
- Technology Venture Creation
- Introduction to Design
- Managing Intellectual Property
- Innovations in Material and Medical Devices

New Programs:

B. Tech. (Minor) in Entrepreneurship

Entrepreneurship for Research Scholars

Entrepreneurship in Key Technologies [Biotech, Nanotech, Materials, Green Economy etc.]

Proof of Concept Course Plan

- The Centre has introduced **ENT 204** Proof of Concept-Basic in the Autumn Semester
- The POC activity is organized in a project-mode coursework over two semesters
- Accordingly, Proof Of Concept-Advanced **ENT 206** is now offered in the Spring Semester [January-April 2016]
- **ENT 204** has **28 students [11 teams]** who have completed the initial development

Proof Of Concept: Course Content

Basic [ENT 204]

- Understanding the new product development process
- Learning to integrate the needs of the end-user into the process
- Using the new product development process to conceive own new product or service

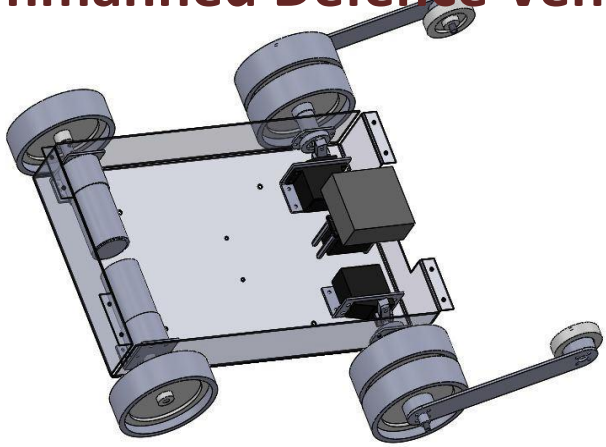
Advanced [ENT 206]

- Enhance/improve/extend features of product developed in previous semester
- Acquiring the skill to apply the concepts and tools of the prototyping process
- Customer feedback and validation
- Commercializing the technology idea

POCs under Implementation

Sr. No	Names, Roll Nos. Dept.	Proposal Title	Key Product/Service Development Planned
1.	Ashray Malhotra, Chhatoi Pritam Bansal	SoundSurround	Mobile Phones into networked audio speakers
2.	Vikash Challa	Leaf Scanner	App Development for small shops to facilitate cashless transactions Detection and classification of plant disease
3.	Sai Hemanth	Unmanned Vehicle	Develop unmanned defence vehicle
4.	Lokesh Dhundhara	Customized Low Cost Laptops	Generating electricity for rural areas by harvesting power from anything that moves
5.	Sanidhya Gupta	Intelligence Surveillance Systems	Technology development for monitoring recordings of surveillance cameras in traffic, and other areas for speeding vehicles
6.	Deepak Miglani	Tripie	App development for guiding tourists about sightseeing, distances, food outlets etc.
7.	Snehal Sawatkar	Alternative Energy	Door closing; treadmill to be used to generate energy
8.	Anuraag Meena	mStetho	Stethoscope to facilitate early detection of pneumonia through non-invasive method
9.	Kamal Kumawat	App - Dealwithus	App development for startup operating in affiliate marketing segment
10.	Shubham Chauhan	Bubble	Human Sentiment Analysis through digital media
11.	K. Teja Sai	Smart Lock	Smart lock for remote security support

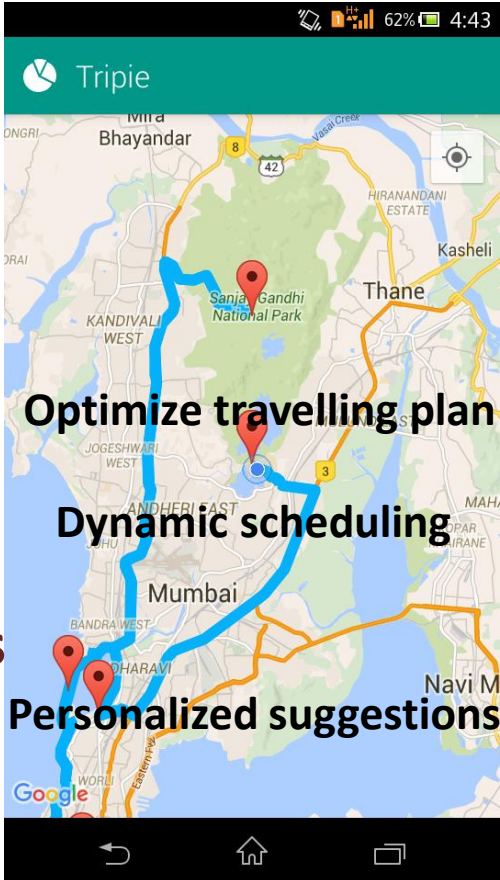
Unmanned Defence Vehicle



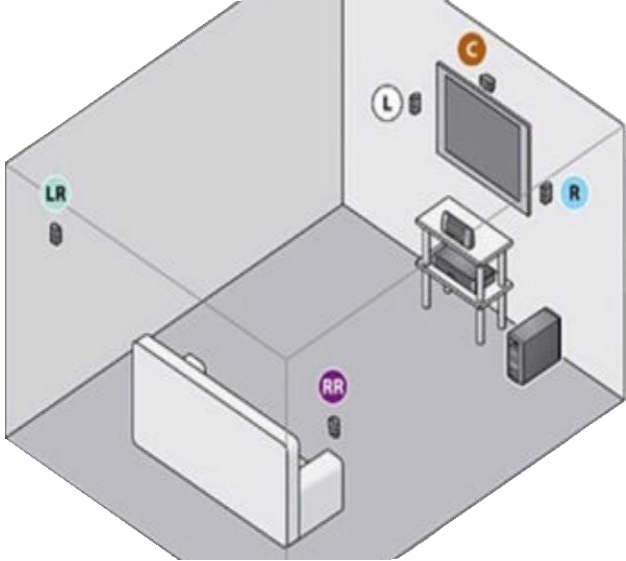
mStetho
Ver 1.0



Tripie



Customized Laptops



SurroundSound

Scope, Stakeholders and Students

- Experience sharing of early-stage entrepreneurs seeking initial investment, including: **Team Building, Opportunity Assessment, Customer Development, Product Development Planning, Financial Modelling, Go-to-Market Strategy and Intellectual Property**
- Teaching team comprises mentors and guides including entrepreneurs, venture capitalists and domain experts in key technology segments
- Final pitch is delivered to a panel of partners at top VC firms
- Students desirous of joining the course:
 - Those who have studied the courses offered earlier (especially POC)
 - Students currently working on their ideas
 - M. Tech. and Ph. D. students pursuing research areas with possible commercial applications

Mike Lyons: founding faculty member

- A veteran entrepreneur and chair of a network-security startup with offices in Silicon Valley
- Figures that **more than 200 tech startups** have been launched by alumni of MS&E 273 since it was first offered in 1988
- Co-developer of the [Stanford Technology Ventures Program](#)
- The course gives students "**actionable tools**" that allow them to understand the startup process and the risks they must minimize in order to ensure success
- Use of scenario-based education: You want to start a high-tech company? You are going to learn how to do it – **by doing it**
- Specifically, students in the class form teams and then propose and assess a technology concept or service in the framework of a business opportunity
- The course demands that the proposed technologies have **“a critical innovative advantage that will provide sustainable differentiation”**

Companies recently launched by MS&E 273 alumni



* Sourcegraph



Technology Venture Creation

- Knowledge and practical skills required to assess a technology concept or product in the framework of a business opportunity
- ENT 208 and ENT 602
- Students who are seriously considering launching a new venture
- Students engaged in research which they believe has potential for a breakthrough product/service
- Aim of launching a new high-tech venture
- Assessment on the basis of the business potential by internal and external experts

Three-Year Academic Plan

	2014-15		2015-16		2016-17	
	AUTUMN	SPRING	AUTUMN	SPRING	AUTUMN	SPRING
Subject I	Introduction to Entrepreneurship Credit - 6 [Prof. Anand Kusre Mr. Raj Jaswa]	Business Skills for Entrepreneurs Credit - 6 [Prof. Anand Kusre Mr. Raj Jaswa]	Identifying and Exploiting Opportunities Credit - 6 [Prof. Anand Kusre]	Technology Venture Creation Credit-6 Prof. Anand Kusre	Managing Intellectual Property Credit - 3 [Prof. Milind Atrey and Dr Raj Hirwani]	Introduction to Design Credit - 6 [Prof. Purba Joshi]
Subject II			Proof of Concept –Basic Credit-6 [Prof. Milind Atrey, Prof. B. K. Chakraborty]	Proof of Concept –Advanced Credit-6 [Prof. Milind Atrey, Prof. B. K. Chakraborty]	Collaborative Engineering Credit – 6 [Prof. B. Ravi]	Entrepreneurship in Materials Science Credit - 6 [Prof. Venkataramani]
Subject III				Industrial Marketing Credit - 3 [Prof. Dinesh Sharma]		Innovation and Creativity Credit – 3 [Prof. P Kumaresan]

Total Courses

10

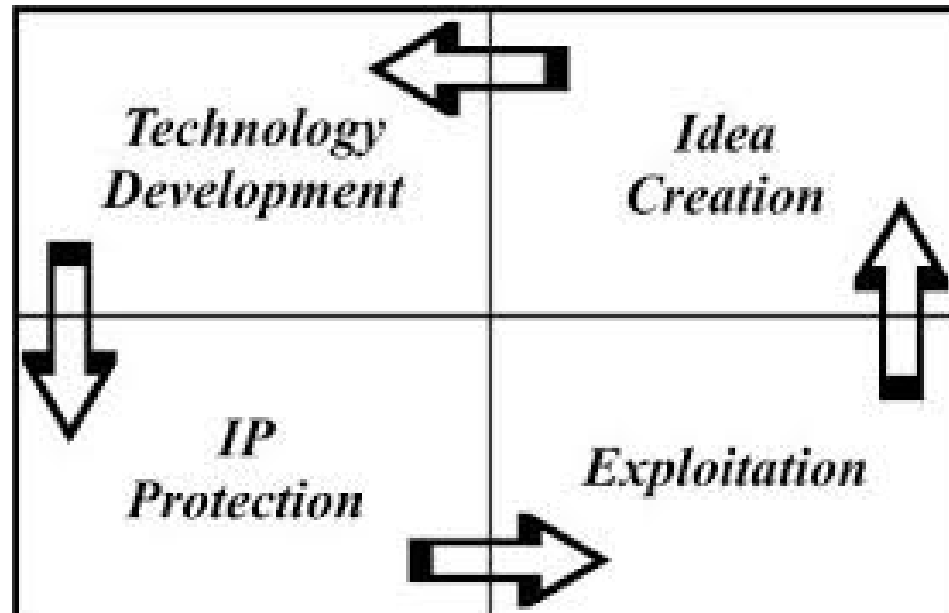
Total Credits

51

+

POC 12

Embarking on the New Venture Road



Mentoring, Micro-grants, Investor Connect, Incubation, Networking, Infrastructure Support to all the students and faculty



Thank You

Tech Venture Formation

IIT Mumbai

Professors

Mike Lyons, Stanford, and Anand Kusre, IIT



Technology • Venture • Formation

Tech Based

InfoTech

Machine Lrn

Big Data

Cyber

CleanTech

MedTech

BioTech

Venture Scale

Significant Problem

Significant Market

Significant Returns

Early Stage

Initial Funding

Product Development

Customer Discovery

Launch Phase

Escape Velocity



Recent Success Stories



14 Short Weeks

- Form a Team
- Come Up with an Idea
- Assess the Opportunity
- Create a Plan
- Present it to real VCs

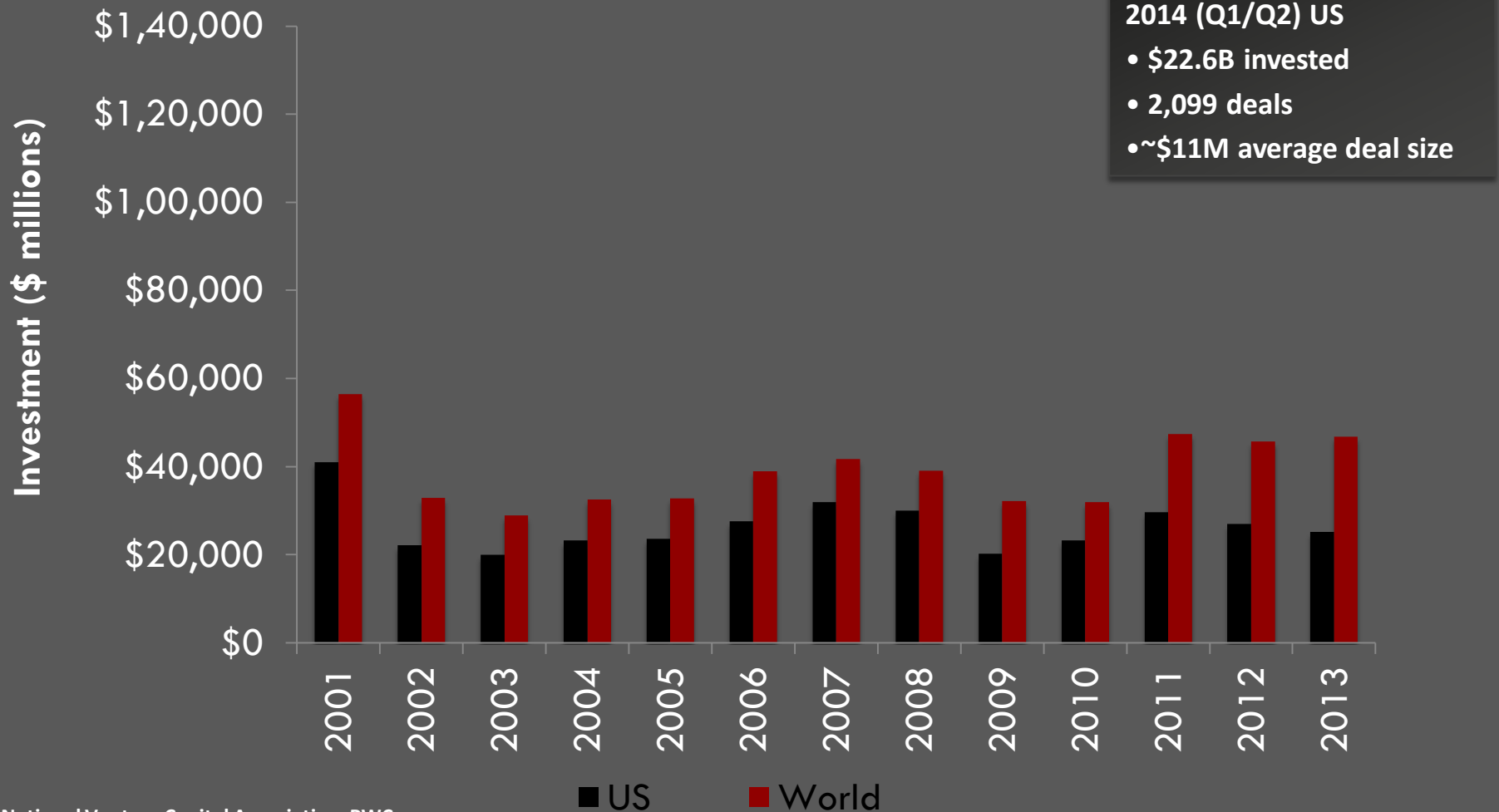


Technology Venture Formation

**Why do you want to take
this course?**



Venture Capital Investment in Technology



National Venture Capital Association, PWC

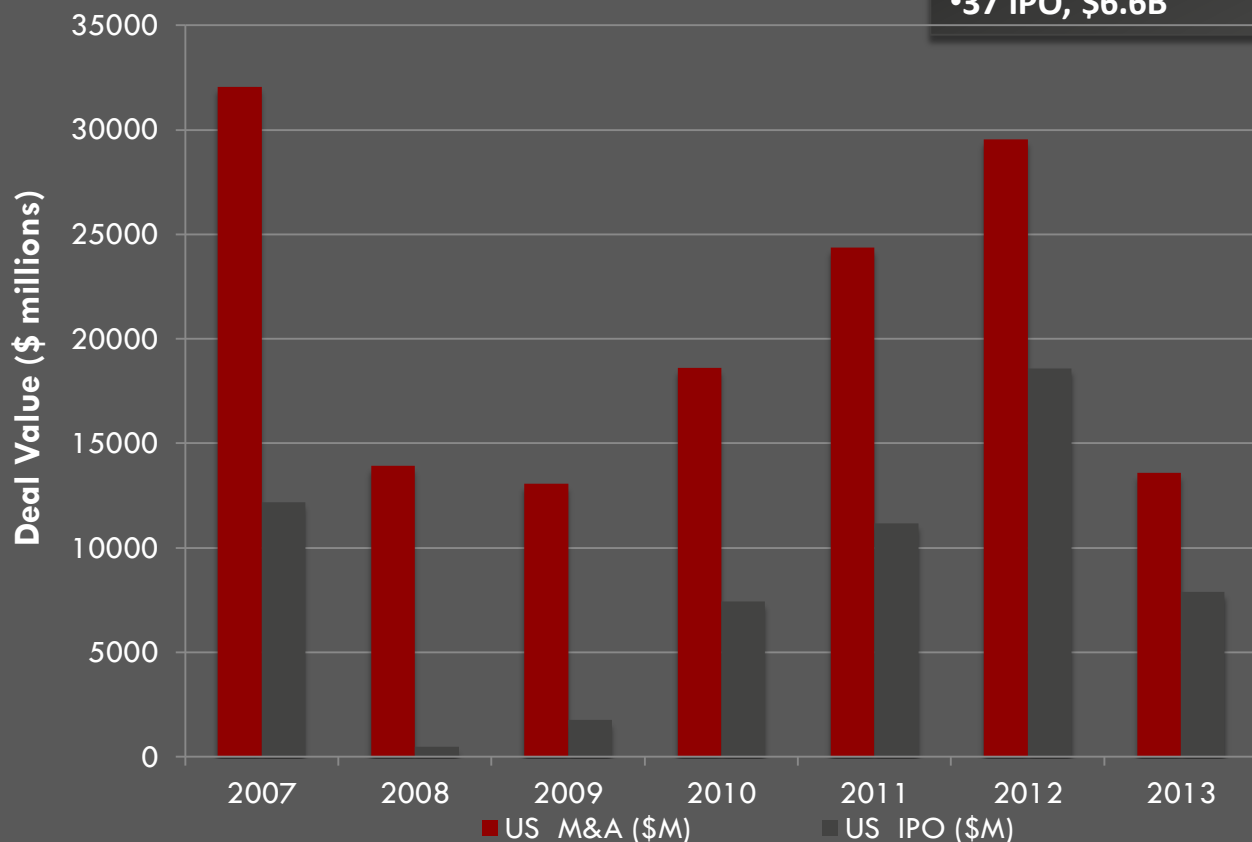


US High-Tech IPOs and M&A

2014 (Q1/Q2)
• 125 M&A, \$52B
• 37 IPO, \$6.6B

Top Tech IPOs 2014

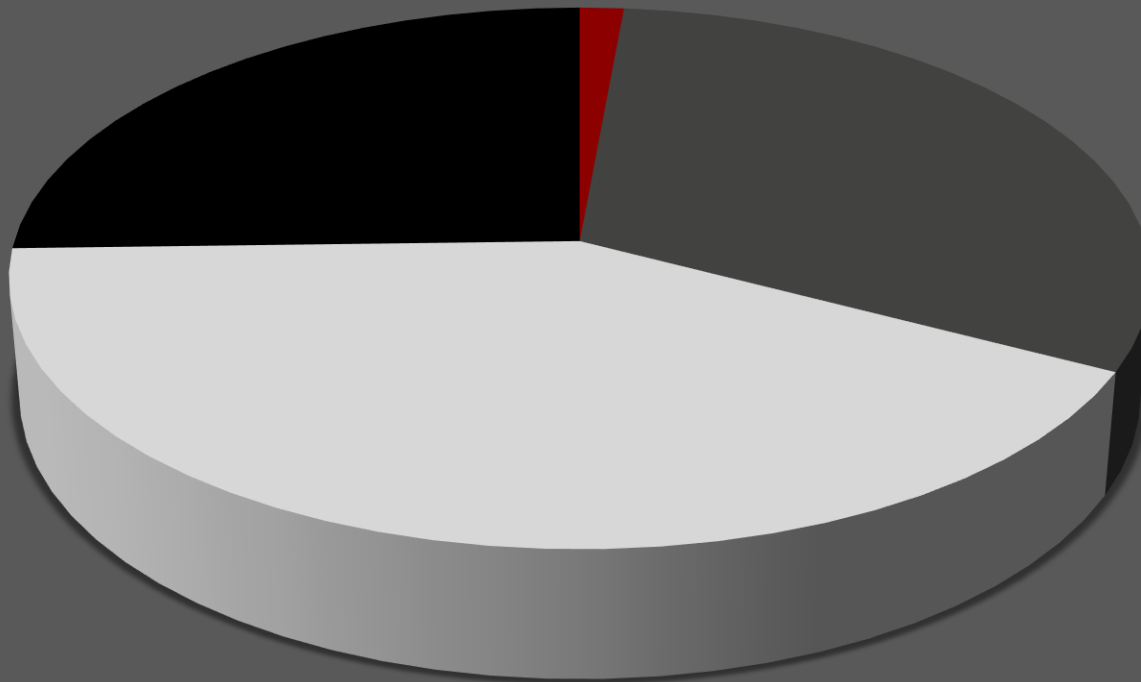
- Twitter (\$1.8B)
- JD (\$1.7B)
- Sabre (\$627M)
- CommScope (\$576M)
- King Digital (\$499M)
- GoPro (\$427M)
- FireEye (\$303M)
- Zulily (\$253M)



Renaissance Capital IPO ; PWC Technology Deal Insights



Investment Stage Q1 and Q2 2014



- Seed Stage Investments
(\$318M, 101 deals)
- Early Stage Investments
(\$7B, 999 deals)
- Expansion Investments
(\$9.4B, 577 deals)
- Later Stage Investments
(\$5.7B, 422 deals)

PWC MoneyTree



Testimonials

“This class alone made coming to Stanford worth it!”



Testimonials

“MS&E 273 is hands down the best way to learn what life in a startup is like...This was the most useful class I took throughout my two years at Stanford...I'm putting learning into action by pursuing my own startup.”



Testimonials

“Beyond the tangible advice or skills learned, my biggest takeaway from the class was the impetus to stop talking about an idea and actually take steps to execute.”



Course Objective

*Transform a technology idea into
a compelling venture scale
business opportunity.*



Course Outline

Market Plan

Opportunity
Assessment
Customer Discovery
Go to Market
Competitive
Differentiation

Product Development Plan

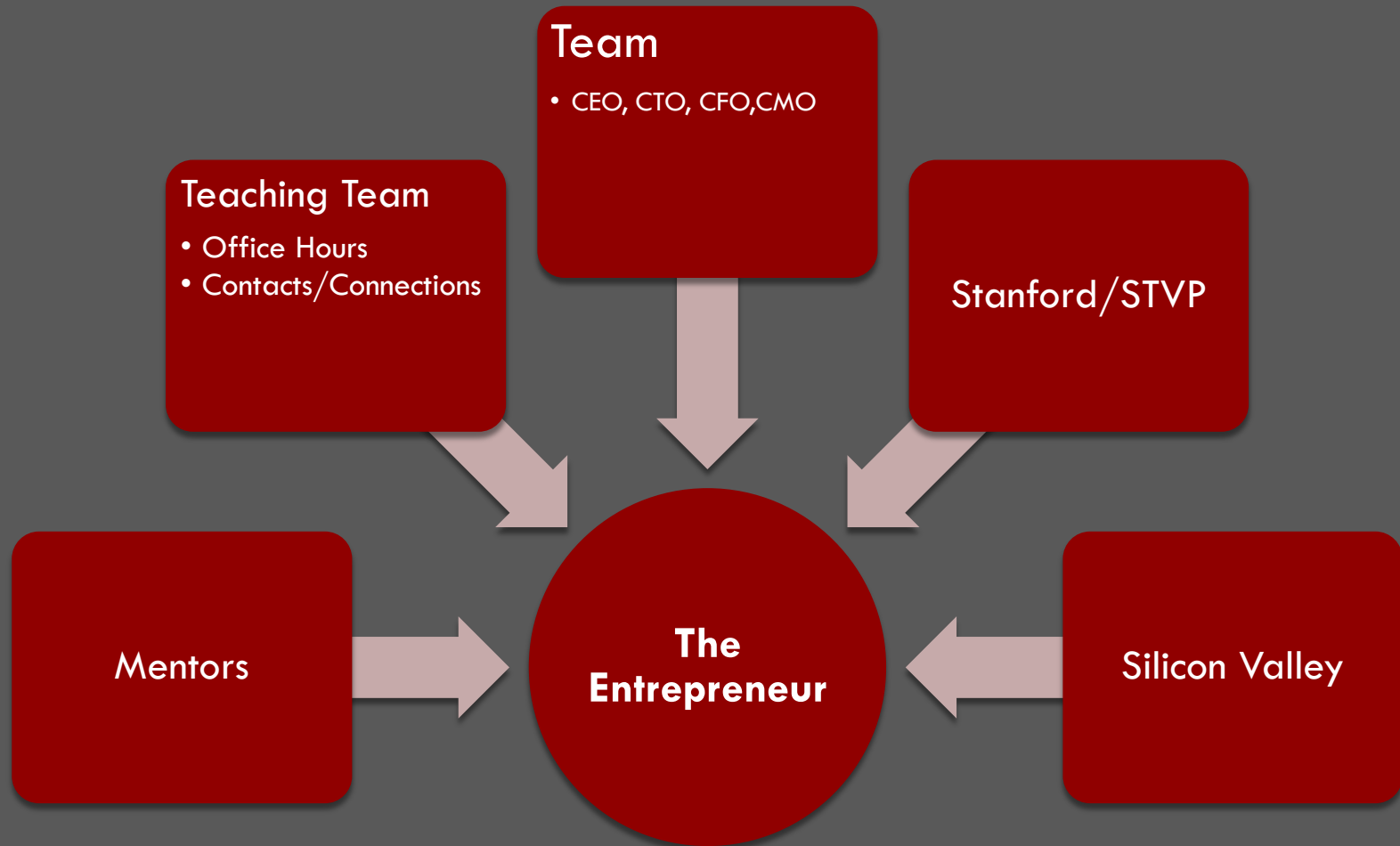
Product Validation
Hardware/
Software/Mobile
Development
Med/BioTech Concerns
IP Strategy

Financial Operating Plan

VC Financing
Multistage Financing
Term Sheets
Capitalization



Tech Venture Formation Eco-system



Forming Your Team - Wed. 5:30pm d.school atrium



■ Session 1: Brainstorming

- "The brainstorming session was one of the most stimulating and exciting two-hour periods I've experienced in a very long time."



Forming Your Team, By Thurs, Jan 7

- Pitch Night
 - Partially formed teams or singles can pitch
 - Called in Alphabetical Order to pitch. Be ready!
 - Waitlisted folks allowed to participate

Come ready to pitch your ideas!!!



Supporting Entrepreneurs

- Each team will be assigned mentors
- Teaching team will hold weekly office hours



Roadmap

WEEK 1

Opportunity Assessment

Team Selection, Initial Concept, Mentor

WEEK 2

Customer Discovery/Market Validation

Pitch Video, Concept Sign-off

WEEK 3

Go to Market Plan

WEEK 4

Financial Operating Plan

GATE I: Product/Market Fit – Mon, Jan 25

WEEK 5

Product Development Plan



Roadmap

WEEK 6

VC Fund Structures & Multi-Stage Financing

WEEK 7

Capitalization & Equity

GATE II – Mon Feb 15

WEEK 8

VC Pitching and Corp Governance

Business Model Analysis

WEEK 9

VC Terms Sheets Discussion

WEEK 10

Business Model Discussion

Example Final Pitch



Roadmap

WEEK 11

Team Presentations Short Versions

Teams Present in Class

WEEK 12

Entrepreneurial Inspiration

Tech Mahindra CEO

WEEK 13

Dry Runs

Teams Present to Teaching Team

WEEK 14

Final Presentations

Outside Investors and Guests



Getting to the Finish Line

- Weekly assignments – Results reviewed in class
- Gate I: Product/Market Presentation
 - Mon, January 25 (CTO/CMO)
- Gate II: Financials/Business Model Presentation
 - Mon, February 15 (CFO/CEO)
- Written Business Model Analysis
 - Due Friday, March 11, 12 noon
- Final VC Presentations
 - Monday, April 4th - Dry Run Monday, March 28
 - Thursday April 7- Dry Run Thursday, March 31



Final VC Presentation



Grading

Deliverables

Participation, Assignments, Gates I & II	25%
Written Business Model Analysis	25%
Final Presentation to VC Panel	50%



Expectations

Commitment + Intensity = Reward

- 100% commitment:
 - Attend lecture, Office Hours and Mentor meetings
 - Get out of the building. Make this part of your life, not just a class for a grade.
- Intensity:
 - Sprint to the finish line each week!
- **Reward: Your team has the chance to deliver a compelling business opportunity to real VCs!**



OPPORTUNITY ASSESSMENT



What is Entrepreneurship?

**“The Pursuit of Opportunity Without
Regard to Resources Controlled”**

Howard Stevenson
Harvard Business School



What's an Opportunity?

A product or service around which you can build a profitable company and net a positive return to investors.

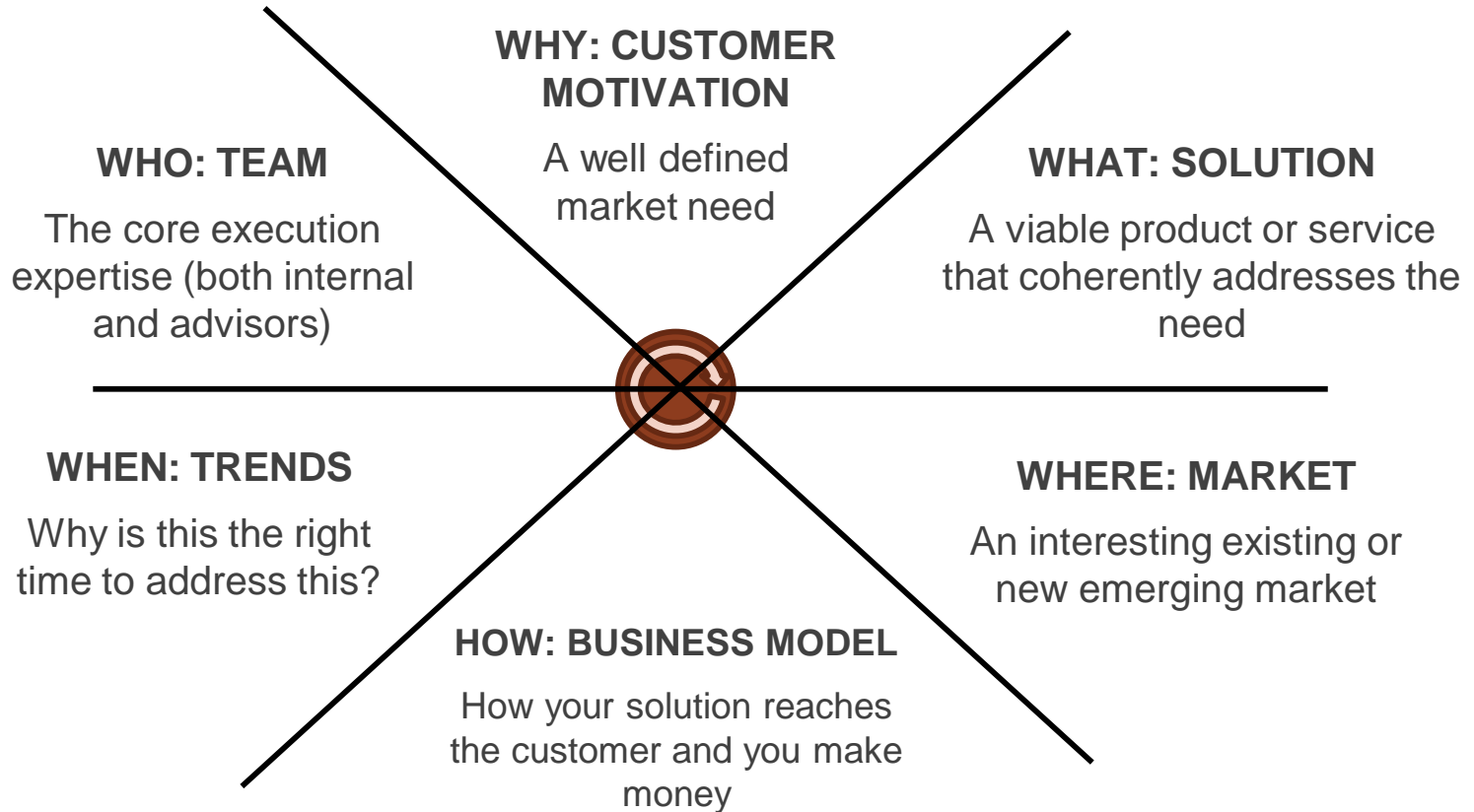


What's an Assessment?

A quick way for you to evaluate whether your opportunity is worth spending years of time and money on.



Opportunity Assessment Framework



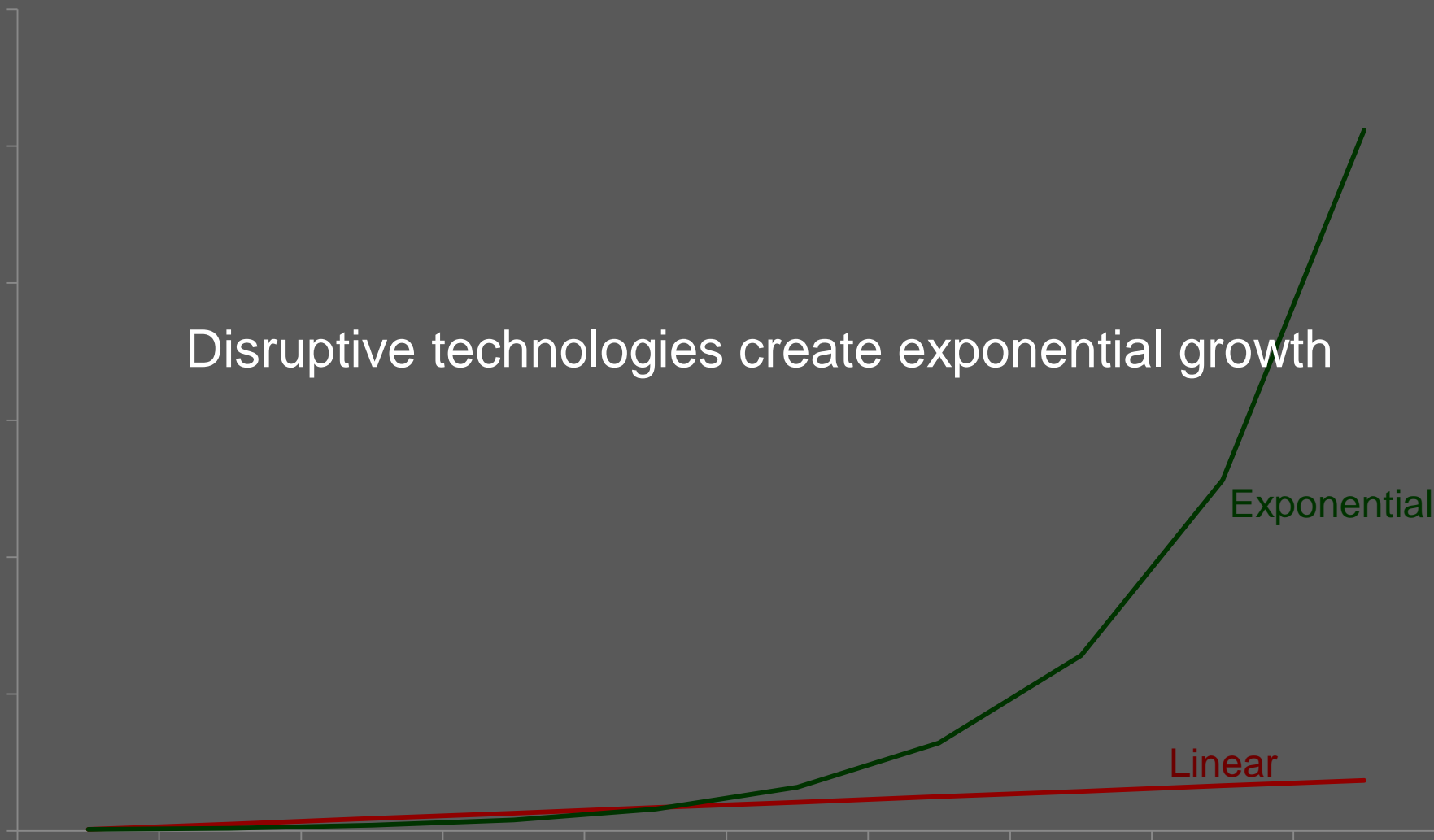
Idea/Opportunity Brainstorming

- All ideas/opportunities are welcome
- But you are Stanford Engineers - start with an engineering idea!
- Use your RESEARCH; you have an inherent advantage!
- There are no “dumb” ideas so go off on tangents
- Each idea gets deeply explored, tossed or morphed
- Analyze strengths, weaknesses, opportunities, competitive threats



The power of exponential growth ...

Disruptive technologies create exponential growth



...looks different at its infancy

“The Americans have need of the telephone, but we do not. We have plenty of messenger boys.” — Chief Engineer, British Post Office, 1878



Linear

“The horse is here to stay but the automobile is only a novelty – a fad.” — The president of Michigan Savings Bank advising not to invest in the Ford Motor Co., 1903



“Maybe For Others”

“Fad”

Pre-Exponential

“How, sir, would you make a ship sail against the wind and currents by lighting a bonfire under her deck? I pray you, excuse me, I have not the time to listen to such nonsense.” — Napoleon Bonaparte, when told of Robert Fulton’s steamboat, 1800s

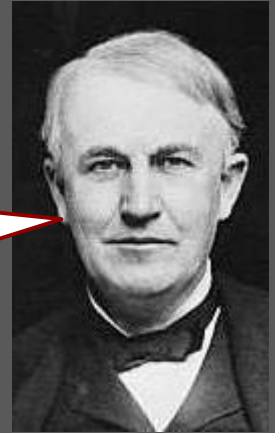


“Wont’ Work”



The difficulties look insurmountable

“It is apparent to me that the possibilities of the aeroplane, which two or three years ago were thought to hold the solution to the [flying machine] problem, have been exhausted, and that we must turn elsewhere.” — Thomas Edison, American inventor, 1895



“Atomic energy might be as good as our present-day explosives, but it is unlikely to produce anything very much more dangerous.” — Winston Churchill, then First Lord of the Admiralty, 1939



“This ‘telephone’ has too many shortcomings to be seriously considered as a means of communication. The device is inherently of no value to us.” — A Western Union memo, 1876/8



The potential impact looks marginal



“There is no reason anyone would want a computer in their home.” — Ken Olson, founder of Digital Equipment Corp. (DEC), maker of mainframe computers, arguing against the PC, 1977

“The world potential market for copying machines is 5000 at most.”
— IBM, to the eventual founders of Xerox, saying the photocopier did not have a market large enough to justify production, 1959

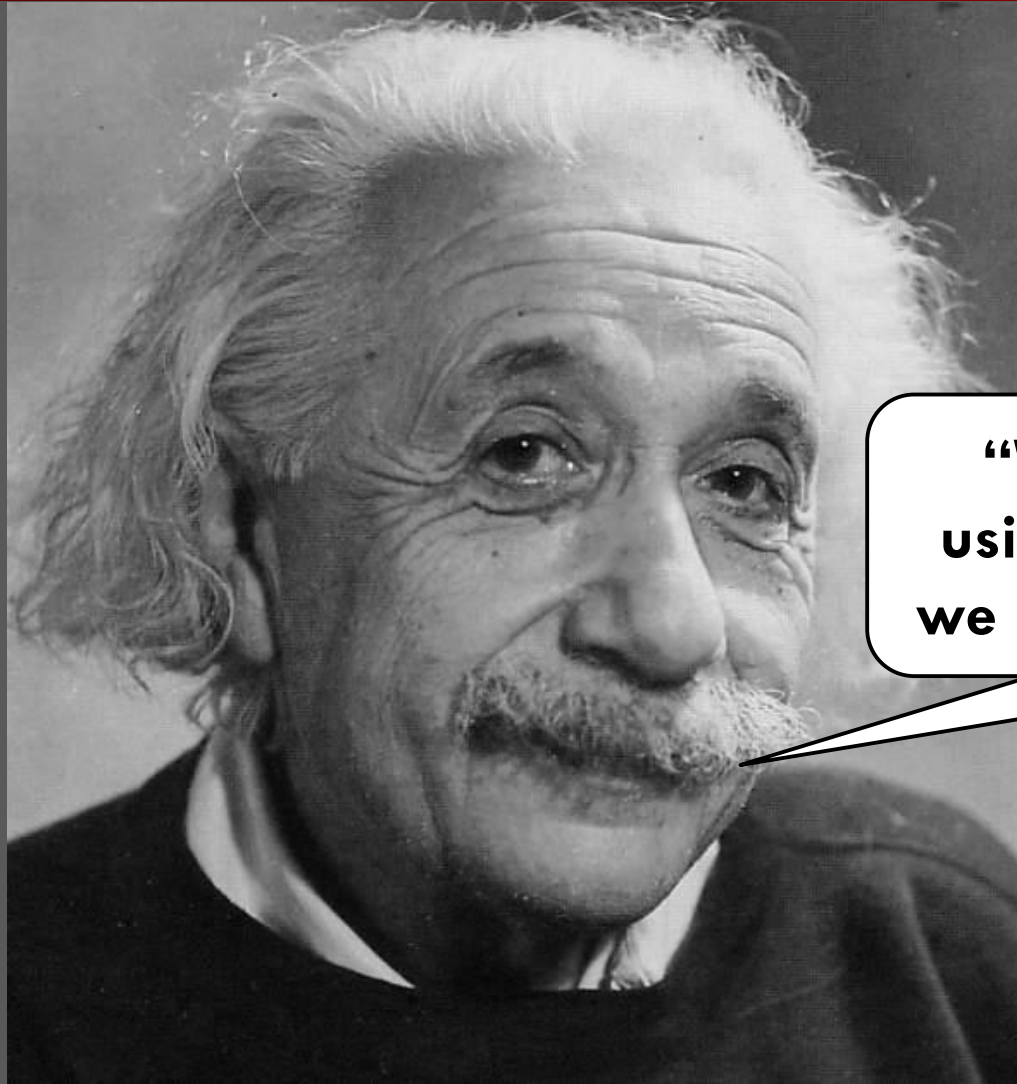
IBM



“There is practically no chance communications space satellites will be used to provide better telephone, telegraph, television, or radio service inside the United States.” — T. Craven, FCC Commissioner (USA), 1961



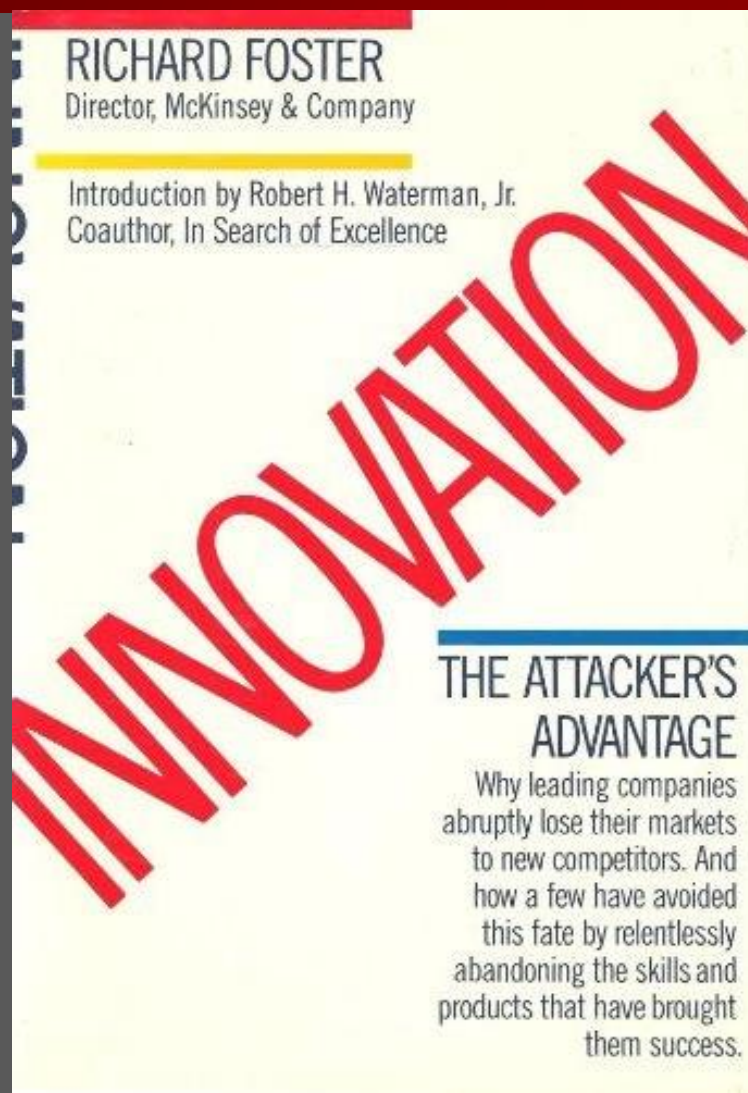
We need to look beyond 'conventional wisdom'



“We can't solve problems by using the same kind of thinking we used when we created them.”



Innovation: The Attacker's Advantage



Brainstorming Guidelines

- Key: Finding a Tech Venture Opportunity That Has Substantial Market Size
 - No Consulting Businesses
- Leverage Your Own Experience/Expertise, e.g. research area, if possible
 - The More Relevant DNA on Team, the Better
- Try to Find a Disruptive Business (Tech or Bus Model+Tech)
 - “Me Too” Doesn’t Work Well
 - Substantial Products May Take More Than 1 yr to Develop
- Remember, You’ll Have to Explain the Whole Business at the end, Not Just do some “Customer Development”
 - Complex Products Usually Require Substantial Engineering Resources
- Be Fearless: Dump Bad Ideas Quickly
 - Fast Iteration Now Pays Big Dividends Later

