Overview:

“Do you want to spend the rest of your life selling sugared water or do you want a chance to change the world?”

-Steve Jobs recruiting then-Pepsi CEO John Sculley to come run Apple

This course is designed to provide students with a set of the tools and skills to harness the promise of innovation in their business and everyday lives and begin to answer the question: Why is change so hard? Special focus will be given to exploring the messy interactions and resistances between technology and culture that unexpectedly impede or derail innovations often predicted to change the world. The role of pop culture, irreverence, humor, sports, fashion, film and music are examined as effective delivery systems for change.

We will study the theory of disruptive innovation and deconstruct radical versus incremental economic, technological and cultural change. We will dived into and explore how, time after time, it is simpler, cheaper, more accessible products, services and processes created by complete industry outsiders that can quickly decimate industry incumbents known for their excellent management. We will also examine how the predictive capability of disruptive innovation theory has come under attack recently and what the future might hold for one of the business world’s most powerful theories.

The course is built largely upon the ground-breaking work of Harvard Business School Professor Clayton Christensen, the author of The Innovators Dilemma (1997) and father of Disruptive Innovation Theory. Professor Hatkoff has worked extensively with Christensen since 2000. In 2007, Hatkoff and Christensen co-sponsored an ongoing Clinton Global Initiative commitment to apply disruptive innovation theory to religion, spirituality, ethics and moral development. Hatkoff also co-founded and curates the annual Tribeca Disruptive Innovation Awards in collaboration with Professor Christensen. In 2009 Hatkoff, Christensen and Irwin Kula co-founded the Disruptor Foundation. Together they collaborate and publish the Off White Papers that feature some of Christensen’s most provocative thinking on the future of disruptive innovation.

The course will explore the strengths and weakness of disruptive innovation theory and its application—origins, current practices and future developments. Examined through a series of frameworks, tools and lenses students are expected to achieve competence/mastery of constructing and deconstructing change, innovation and assessing the likelihood of successful of diffusion. The major frameworks/tools/ lenses are:

1. Hyper-connectivity
2. Network Theory
3. Scalability
4. Inter-operability/Modularity
5. Resistances and Constraints
6. Complexity and Simplicity
7. Open Source: Centralized, Decentralized and Distributed Systems
8. User Interface (UI) and User Experience (UX);
9. Anomalies, Outliers and Black Swans
10. Identity and Utility
Course Grading:

- **Class Participation** (30%)
- **Group Project** (30%)
- **Exercises and Occasional Assignments** (20%)
- **Communication Skills** *(written, oral)* (20%)

**Written:** Mark Twain and others captured the sentiment: “I would have written you a short letter but I didn’t have enough time.” Learning to keep it short and sweet is critical to future success. Each week students will submit a short letter addressed “Dear Mr. Twain…” (no more than 100 words) synthesizing an innovator, an innovation or an idea they are passionate about—positively or negatively.

**Oral:** Story-telling and Elevator Pitches—students will be called on at random to pitch an idea—preparation for that once-in-a-lifetime encounter.

**Social Media** *(optional for extra credit)* (5%)
Students are encouraged to open and maintain one or more course-specific social media accounts (e.g. blog, Twitter, Instagram, FB, Pinterest) that can be taken into consideration for the final grade.

Disruptive Innovation and Its Historical Context

**Classic Disruptive Innovation:**
Working definition: (1) simpler, cheaper, inferior, more accessible products and services (2) good enough to get the job done (3) marketed to non-consumers or non-existing marketplace (4) that frequently decimate industry incumbents. The change almost always comes from industry outsiders.

The course will be peppered with many stories, narratives and examples of innovation and innovators woven into a meta-narrative. We will establish a framework of critical context and necessary skills for pattern recognition. Four primary threads will be:

**Thread One:**
*What Is Disruptive Innovation?*
Simple, cheaper more accessible products and services good enough to get the job done marketed to non-consumers or non-existing markets

*Incremental versus Radical Change*
Disruptive innovation, the incumbents and the entrants: why it’s usually two guys in a garage…at least to date.

**Thread Two:**
*The World of Innovation prior to Disruptive Innovation Theory (1995).*

The revolutions, transformations and paradigm shifts spurred by invention and/or innovation:
*The Agrarian, Industrial, Technological, Information and Digital Revolutions.*
Thread Three:

How a Harvard Professor’s shocking realization that “less is more” launched a whole new approach to innovation and how entering a market at the low end with low profit margins and often with an inferior products leads to entirely new groups of customers and consumers. Over time the minnow swallows the whale.

Thread Four:
Disruptive Innovation Theory 2.0:

The future of disruptive innovation theory and the new frontiers. How innovation in domains that involve simple, straightforward tasks and “jobs to be done” with one or few stakeholders dramatically varies from innovation in domains with many jobs to be done and many stakeholders. Innovation that involved peoples identity--i.e. worldviews, values and belief systems—can behave in a wildly different manner than predicted using the lens of classical disruptive innovation. Welcome to quantum innovation.

General Reading Assignments for the course:

The Innovator’s Dilemma (Clayton Christensen, 1997)

Various articles and essays that will be generally available on line and/or made available on Canvas-- the Business School’s IT platform.

[NB- General reading assignments intended to capture the big picture; detail is fascinating but to each their own desired level of personal investigation]

(Tues, May 26, 2015)
Class 1: “Only the paranoid survive” -Andy Grove, CEO of Intel

“There was a war going on inside of me. Back in the 80’s, I lost it. I became a problem for the world. I wasn’t living righteous.” -RZA (from the Wu Tang Manual)

Welcoming remarks

Convocation

Opening videos

Kernels
1.01 What is invention? What is innovation?
Meet Aaron “Wheelz” Fotheringham, Felix Baumengarten and Rick Rubin. Inventors or innovators?

1.02 What is disruptive innovation?
Disruptive Technologies: Catching the Wave (Harvard Business Review, Bower and Christensen 1995); Innovators Dilemma (Christensen 1998)

1.03 Maslow’s Silver Hammer and the Hierarchy of Needs
1.04 Utility versus Identity [NB this will be a key theme throughout the course]

1.05 Agricultural Revolution

1.06 Scientific Revolution

1.07 Industrial Revolution

1.08 Digital Revolution

1.09 The Mind’s Eye and the Paradigm Shift:
Do innovators see things differently or just see how others see things differently?

- Duck-Rabbit;

- FEDEX Moments;

- Joseph Albers;

- Du Champs Dictionary;

- Flat Earth vs Ptolemy vs Copernicus;

- Einstein vs Bohr (watch YouTube video Dr. Quantum [https://www.youtube.com/watch?v=fwXQjRBLwsQ];

(Optional online research exercise: read about Thomas Kuhn’s Theory of Scientific Revolutions (book, summary or excerpts))

1.10 Role of the Killer App
Almost no disruptive innovation scales until it has a killer app?

In-class Mini-cases:

The Apple U2 Debacle:
Never Ask for Permission, Always Ask for Forgiveness… unless it’s an iPhone. The great U2/Apple launch debacle? Sometimes you can’t even give stuff away.

Blackberry v iPhone [http://goo.gl/CcAid5
How getting it wrong can you cost you the company. Maybe they just weren’t paranoid enough?

Monday June 1, 2015
Class 2: When the Network Effect Meets the Internet

Questions: Why do we have an Internet? What is its societal impact?

Kernels
2.01 The Network Effect: Metcalfe’s Law

2.02 The Two Adam Smiths: Wealth of Nations vs. Theory of Moral Sentiments
Monday June 8, 2015
Class 3: What's the Story Morning Glory? Narrative Capture and Release

Kernels
3.01 Daniel Kahneman: Causation versus Correlation
http://tinyurl.com/7ab3cv6; “Don’t Blink: the Hazards of Confidence” Daniel Kahneman http://tinyurl.com/63a95yf

3.02 What You See Is All There Is (WYSIATI)
Watch Daniel Kahneman interviews http://tinyurl.com/jvp2zf8

3.03 Story Capture and Innovation Narratives: stories help us visualize and remember

3.04 Stories versus Statistics: Of shark attacks and natural disasters

3.05 Fictistics versus Factistics: The Unemployment Rate and GDP http://www.bls.gov/news.release/empsit.t15.htm

3.06 Statistics: Predicting the Past

3.07 Innovations in Storytelling (from the Cave at Lascaux to TED to Petcha Kucha)
http://www.pechakucha.org/faq


3.08 Rapid Meaning Transfer
3.09 The Art of High Concept

**Individual and group exercise including an in-class competition:**

**Part 1:** Before class each student will pick any idea and must convey the idea:
(a) in 100 words; (b) then in 25 words; (c) then in 10 words; (d) then get it down to 5-4-3-2-1;

**Part 2:** In-class Hackathon-- Students will forms teams (3-5 students per team) and follow the same exercise

3.10 The elevator pitch: Metaphors-tropes-analogies-pictorials-memes-quotes-wordplay

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**Part Two (Classes 4-7)**

**The World of Innovation prior to Disruptive Innovation Theory (1995).**
The revolutions, transformations and paradigm shifts spurred by invention/innovation:
Agrarian, Industrial, Technological, Information and Digital Revolutions.

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**Monday June 15, 2015**

**Class 4: Revolutions, Transformations and Paradigm Shifts**

**Kernels**

4.01 Inventor vs. Entrepreneur vs. Manager: Schumpeter’s Trumpeters
Rarely the same bird with a few exceptions (Gates? Jobs? Zuckerberg?)
Read any source on Schumpeter’s “creative destruction”

4.02 Thomas Kuhn and *The Theory of Scientific Revolutions revisited*

4.03 Hunting the Great DuckRabbit: from *Fliegende Blätter* (1892) → Joseph Jastrow (1901) → Ludwig Wittegenstein (19) → Thomas Kuhn → Duck Rabbit Academy

4.04 The Great De-centerings: Copernicus--Darwin-- Einstein --Picasso--Freud

4.05 From Atoms to Bits: Nicholas Negroponte and “Being Digital”

4.06 The Holy Grail: Getting Phygital
When Digital and Physical Worlds start to mesh
Recommended reading : *Being Digital* (Negroponte 1995)

4.07 Kurzweil’s Singularity formulation: When Genetics, Nanotechnologies, Robotics, and now 3D Printing) overlap (G+N+R+3DP)


4.09 Edward Snowden: Hero or Traitor?
Anonymous and 4chan and other transparencies
4.10 God and the Hummingbirds: Transparency and Accountability Technologies
Read *Disrupting Hell: Accountability and the Non-believer* (Christensen, Irwin Kula and Craig Hatkoff)

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**Monday June 22, 2015**
**Class 5:**

“Nothing Focuses the Mind Like a Hanging” -Samuel Johnson

**Kernels**

5.01 War-fighting and Disruptive Technologies: Disguising Innovation (Capt. Terry Pierce)

5.02 Great innovations in military history: Stirrup → Armor → Shock mounted combat → Feudalism

**Mini-Case study:** The English longbow and the redistribution of power that changed the world

5.03 Gunpowder → Cannon → City States → Nation States (recommended reading: Phillip Bobbit, *Shield of Achilles*)

5.04 Aircraft carrier

5.05 The Rolling Musket Volley and the Machine gun

5.06 Sputnik

5.07 Guerrilla Warfare

5.08 AK47 (From Mikhail Kalashnikov to Peter Thum’s Fonderie 47)

5.09 Predator Drone

5.10 Drones for Good: the Ambulance Drone versus Amazon’s just-in-time junk.

In-class Hackathon: Teams of 3-5 students will have 45 minutes to “design” a drone for the public good

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**Monday July 6, 2015**
**Class 6:** Centralized, De-centralized and Distributed Networks

**Foundational Image:**

[Image of network diagrams]
Kernels
6.01 The Sputnik Moment and the Birth of the Internet: “We’re under attack; return fire!” [Link]

6.02 Centralized, De-centralized and Distributed Systems (Paul Baran, RAND Corp.)
Read: Paul Baran oral histories; see RAND Corporation “On Distributed Communications Systems” [Link]

[ NB: do not worry about technical details but focus on this fascinating source document in the history of the internet]

6.03 Cathedral and the Bazaar: Open Source Movement Begins
Read (book or online): The Cathedral and the Bazaar, Eric Raymond (1998)

6.04 Distributed Communication Networks, Early Adopters and Rates of Diffusion (Everett)

6.05 Qwertyosities: The strange case of the QWERTY keyboard and the even stranger Case of the Metric System

6.06 Where Do Good Ideas Come From? Proximity and Super-linear Scalability

6.07 Switching costs, stickiness and other impediments to change

6.08 Wikipedia vs Encyclopedia Britannica: What happened when Jimmy Wales read the Cathedral and the Bazaar

6.09 Granovetter: Strength of Weak Ties [Link]

6.10 Component and Linkage Innovation, Interface and Modules

**Mini-case:** From Lister to Listerine (Joseph Lister, President Garfield’s assassination)
Why it took 30 years for the U.S. to adopt antiseptic surgery

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**Monday, July 13, 2015**

**Class 7:** The Great Democratization and the Redistribution of Power
(*Connectivity + Open Source + Modularity*)

**Kernels**
7.01 The Open Source Movement: Cathedral and the Bazaar (Eric Raymond)
From LINUX to Wikipedia to Quirky

7.02 Moore’s Law (Intel’s Gordon Moore)

7.03 Metcalfe’s Law and the Network Effect Revisited

7.04 Mary Meeker and the The State of the Internet Report
7.05 The Great Internet Bubble of 2000: Irrational Exuberance and Unicorns  
The valuation problem: Uber, WhatsApp, Oculus Rift, We Works

7.06 Being Digital (Negreponte, 1996)  
In a world of digital abundance where everything’s free, or almost free.

In-class Mini-case: What ever happened to the Flip camera? Getting it wrong: Flip Camera and Cisco Acquisition

7.07 Jobs-to-be-done, Killer Apps and the Interface: (What ever happened to Google Glass?)

7.08 The MP3 File and Napster: Steve Jobs Had a Better Idea  

7.09 Bundling and unbundling products and services,

7.10 Cord Cutting and Tethering

7.11 Modularity: “We make the things that go inside of things that go inside of things”  
German Engineering versus French Cheese and Wine

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Part Three: (Classes 8-10)

Monday July 20, 2015  
Class 8: Disruptive Innovation Theory 1.0 (1995-2007). A Harvard Professor’s shocking realization that that “less is more”

Kernels

8.01 Introduction: Clay Christensen YouTube video

8.02 Disruptive Technologies: Catching the Wave (Bower, Christensen, 1995)

8.03 The Innovator’s Dilemma: Why Great Companies Fail  
Read: Innovator’s Dilemma (Christensen 1997)

8.04 Threshold Resistance: Alfred Taubman’s Invention of the Modern Mall  
Read: Terrazzo Jungle, Malcolm Gladwell (March 2004, New Yorker)

8.05 Mind as Mall

8.06 Who’s in Charge? Cathedral and the Bazaar Revisited  
From Linux to Wikipedia to Mechanical Turk to NIH: The Open Source Movement comes of age

8.07 Mickey Mouse’s Mustache and the Crime of the Century

8.08 Napster, Steve Job, iTunes and the demise of an industry
Monday July 27, 2015
Class 9: When a theory stops explaining things: Disruptive Innovation 2.0

Kernels
9.01 The utility-identity function

9.02 Quantum Innovation: When innovation touches people’s worldview, values and belief systems

Read: Disruptive Innovation Revisited: Toward Quantum Innovation (Christensen, Hatkoff, Kula 2013) www.offwhitepapers.com

9.03 Disrupting Brands

9.04 Disrupting Capitalism

9.05 The Real Billionaires

9.06 Maslow’s Hierarchy of Needs Revisited

9.07 Disrupting Religion

9.08 Is Pope Francis the greatest innovator of all-time?

9.09 Disrupting Yourself

9.10 The Future of Innovation

Monday August 3, 2015
Class 10: Group Project Presentations