UNIVERSITY of HOUSTON
CULLEN COLLEGE of ENGINEERING

Success and Failures of Startups

Austin Cole
MECE 5397
Engineering innovation and entrepreneurship
23 November 2020

Introduction

Motivation

- Passion, change, value, control, and money are key motivating factors
- Leadership, drive, and need are necessary

Basics

- Startup: Company in beginning stages founded by an entrepreneur to develop a product or service for which they believe is a demand

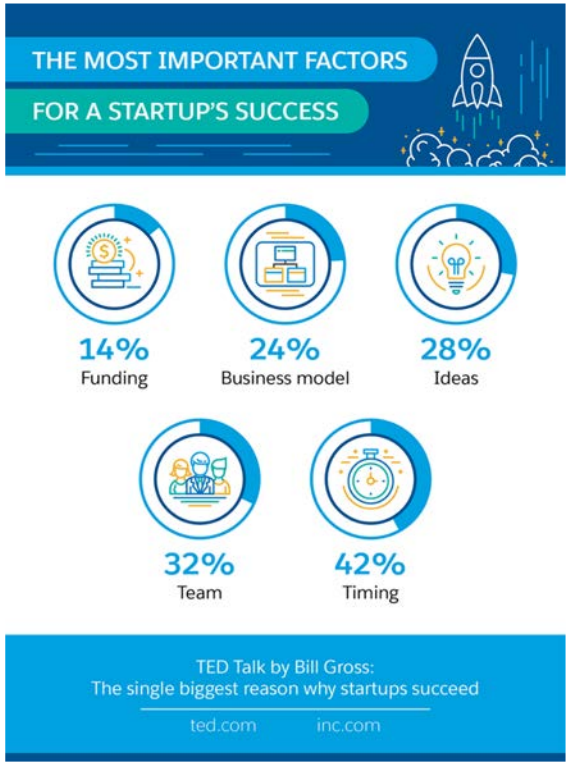
Overview

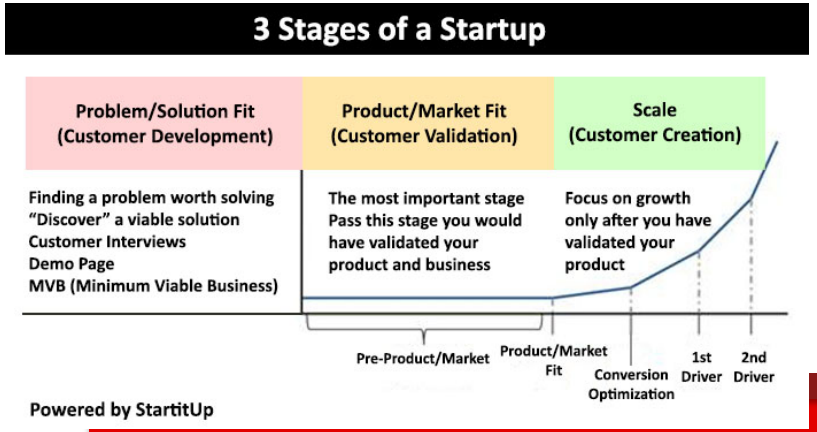
- Detail successes of startups
- Failures and how to avoid them

Successes of startups

Understand what makes them succeed

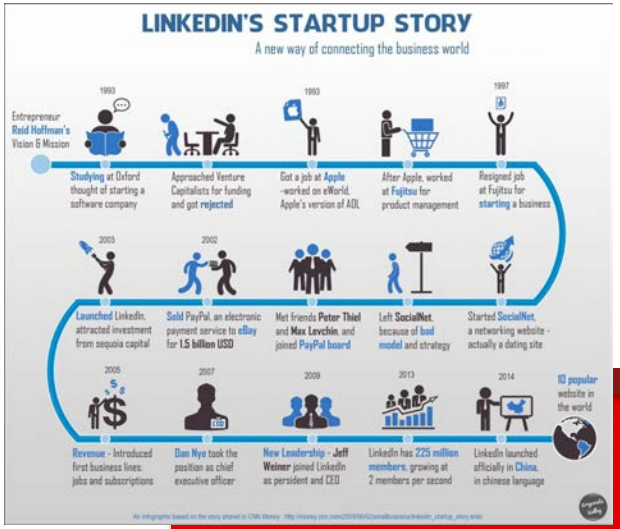
- AIRBNB, Instagram, Uber, LinkedIn, and many more
- Each had roughly similar success stories excellent timing, funding, perseverance, but different in the small details

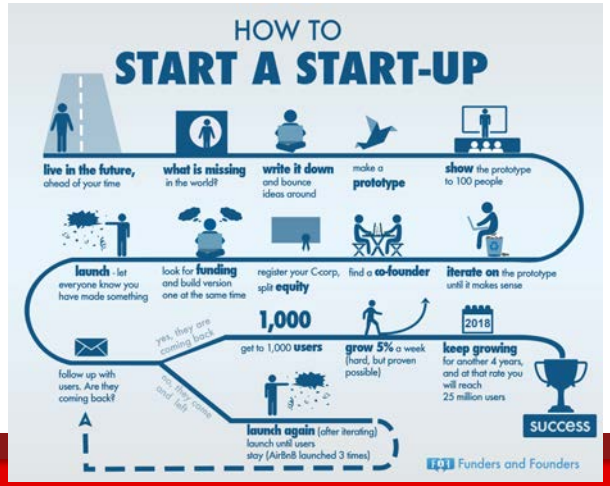


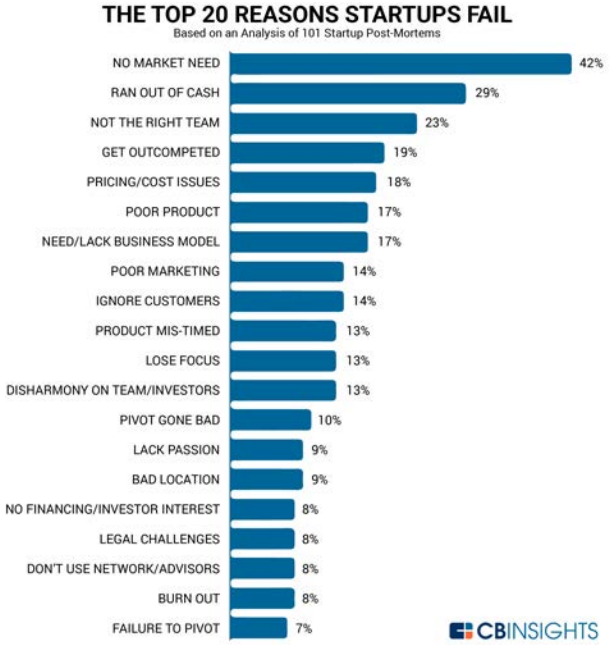


Failure and how to avoid it

- Not all failure is avoidable/preventable such as need/timing
- Complex path to avoid failure (not a straight line)
- 75% fail within 5 years







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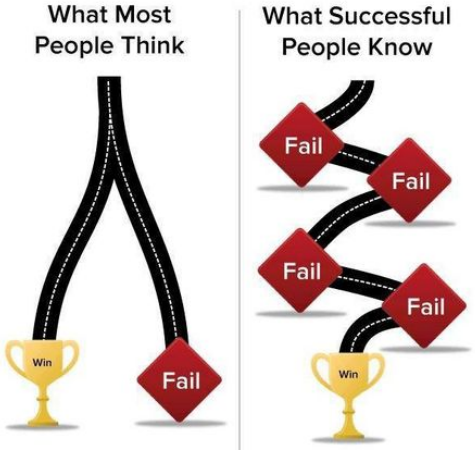
Conclusion/Summary

- What motivates entrepreneurs to create startups
- Basics and background information on startups
- Difficulties of a successful startup
- Successes
- Failures and what to avoid to achieve success



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[2]2020, "8 Informative Infographics that Illustrate Startup Success", Visage [Online]. Available: https://visage.co/data-visualizations-explain-startup-success/. [Accessed: 16- Nov- 2020].

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[5]2020, "3 Stages of a Startup - The Lean Startup", Entrepreneurship Insights [Online]. Available: https://mdi.com.pk/entrepreneurship/3-stages-startup-lean-startup/. [Accessed: 16- Nov- 2020].

[6]2020, "The Most Important Factors for Startup Success", Salesforce Canada Blog [Online]. Available: https://www.salesforce.com/ca/blog/2017/11/important-factors-startup-success.html. [Accessed: 16- Nov- 2020].

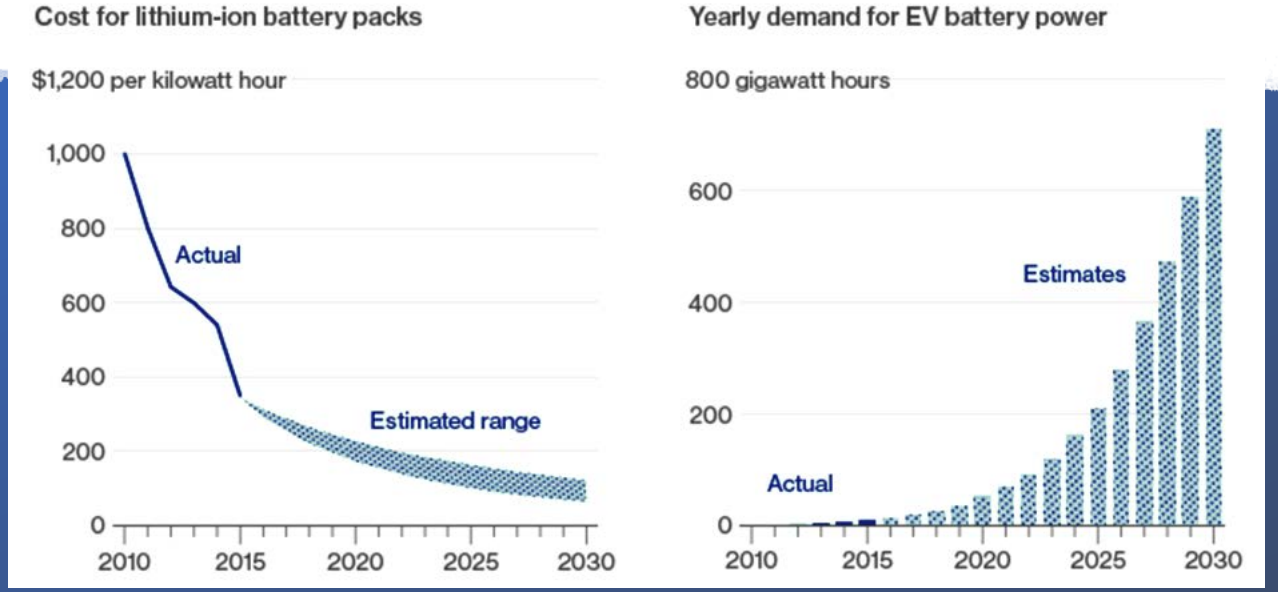
Disruptive Innovation in the Age of Sustainability

Adrian Escobedo
UHID: 1402090

Introduction, Motivation, & Overview

- A disruptive innovation delivers products and services that are so superior to what is currently in place.
- Motives for this paper are to help depict an answer to the question of what would be, what interesting new technologies are out there today that will drive the next big disruption by looking at our history.
- Overall, by introducing previous disruptive innovations that allowed industries to strive for sustainability today for a better tomorrow will show how a possible K-Wave is formed.


TESLA


Cost for lithium-ion battery packs
$1,200 per kilowatt hour
1,000
800
600
400
200
0
Actual
Estimated range
2010
2015
2020
2025
2030
Yearly demand for EV battery power
800 gigawatt hours
600
400
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Estimates
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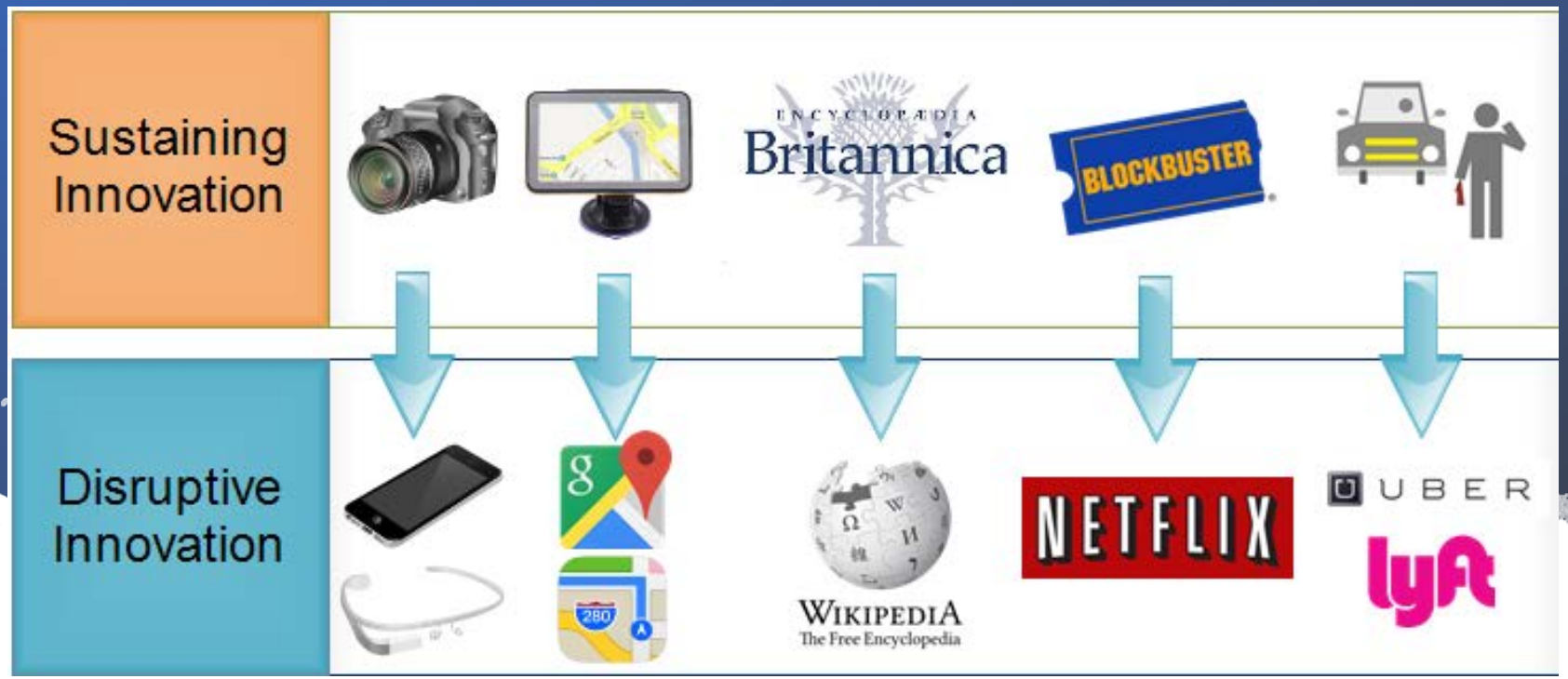
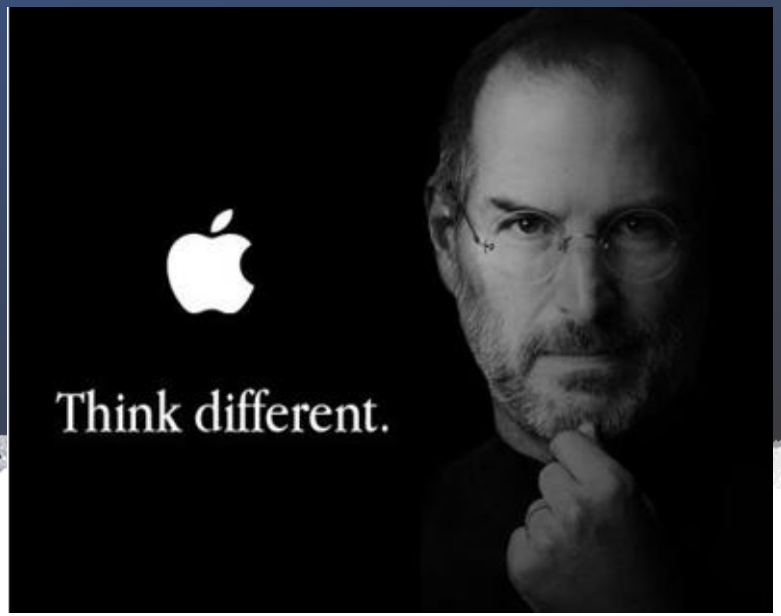
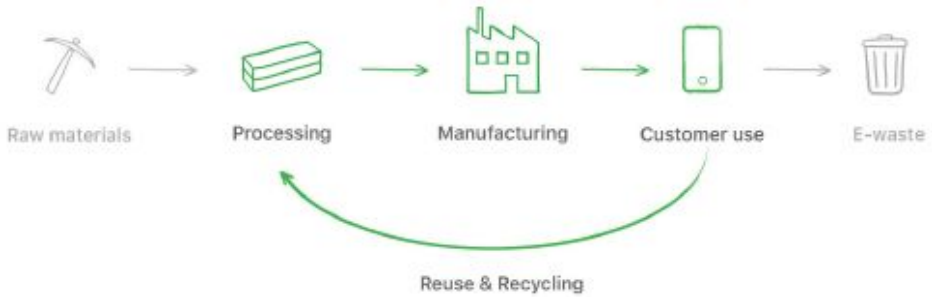

Sustaining Innovation
Disruptive Innovation
ENCYCLOPÆDIA
Britannica
BLOCKBUSTER
WIKIPEDIA
The Free Encyclopedia
NETFLIX
UBER
lyft


Think different.


Raw materials
Processing
Manufacturing
Customer use
E-waste
Reuse & Recycling

Summary

- Disruptive Innovation and Disruptive Technologies are being incorporated in new and existing company initiatives.
- The examples mentioned above are plenty of ways that we can see how industries such as energy, technology and transportation all have similar initiatives

TECHNOLOGY DIFFUSION OF FIBER OPTIC SENSORS (FOS) IN OIL AND GAS FIELD

BY AHMAD HAMAD

OVERVIEW

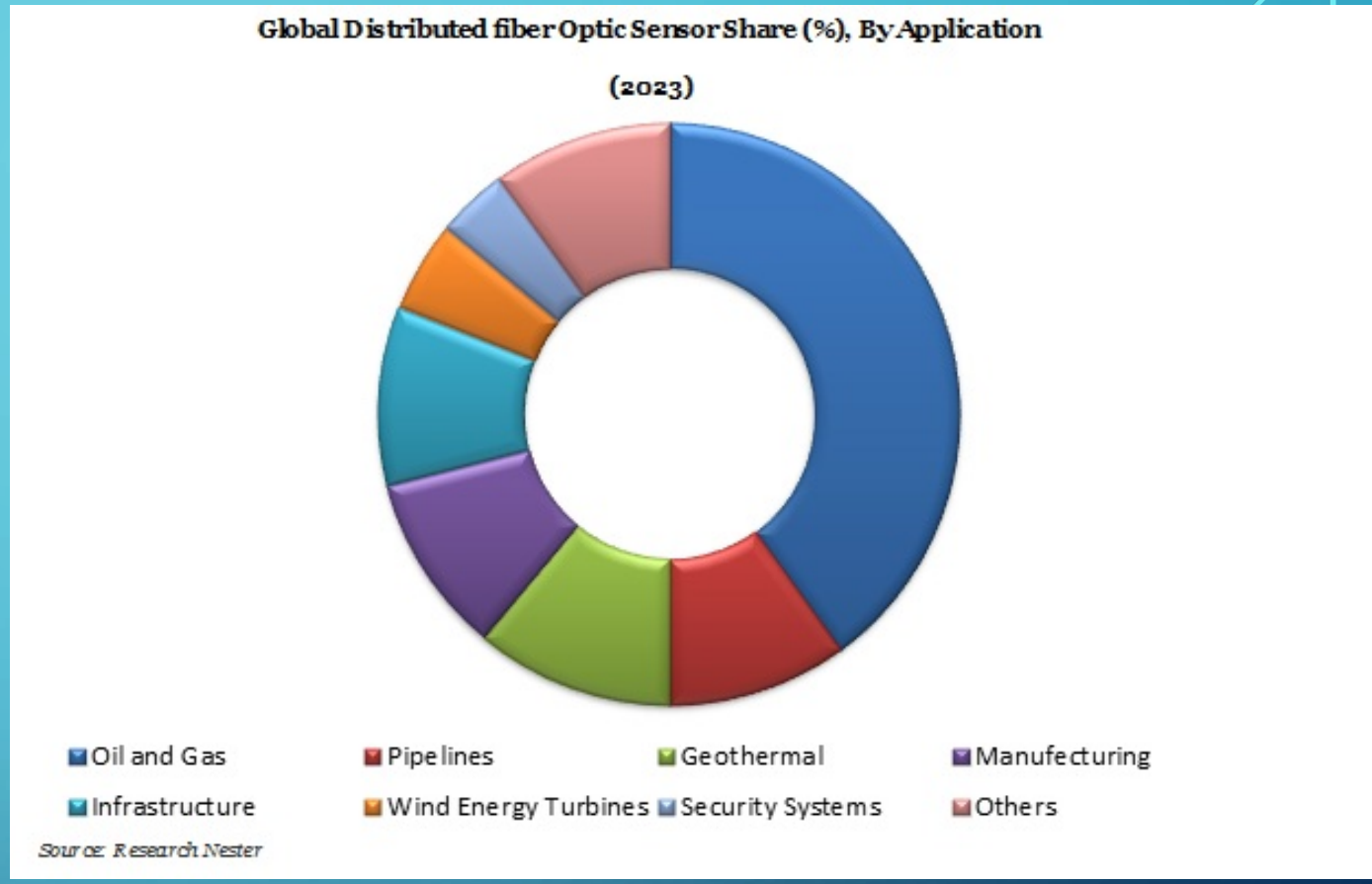
- FOS can be used in real-time monitoring in a range of fields including health care, aerospace, oil and gas industry etc.
- The oil and gas industry is in the process of continuous expansion at a massive scale. Therefore, this industry is not only a market attraction for investors but is an epitome of technological advancements.

WHY FIBER OPTIC SENSORS (FOS)?

- Harsh Environment Capability
- Light weight and small size
- High sensitivity and Long range
- Measures Mechanical Measurements (force, pressure, strain/stress, displacement, temperature, …)
- Electrical and Magnetic measurements.

FOS IN OIL AND GAS FIELD

- Oil and Gas Field is the biggest Market for oil and Gas
- Distributed Fiber Optic Sensor Market Size Worth $1.87 Billion By 2025



- Key market participants include Halliburton, Schlumberger Limited, Yokogawa Electric Corporation, OFS Fitel, LLC, Qinetiq Group PLC, Omnisens SA, Brugg Kable AG, Luna Innovations Incorporated, and AP Sensing GmbH.

SUMMARY

- Fiber optic sensors have progressed from an interesting experiment to a breakthrough technology that has vast applications in different fields of science.
- The ability to provide reliable and accurate information in the harsh environments of oil and gas reserves makes the FOS system an imperative component of this industry.
- It is evident that this efficient system will continue to progress and remain an important source of collecting valuable data in the oil and gas industry

The of Diffusion of Innovations

Anthony Huljev
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MECE 5397

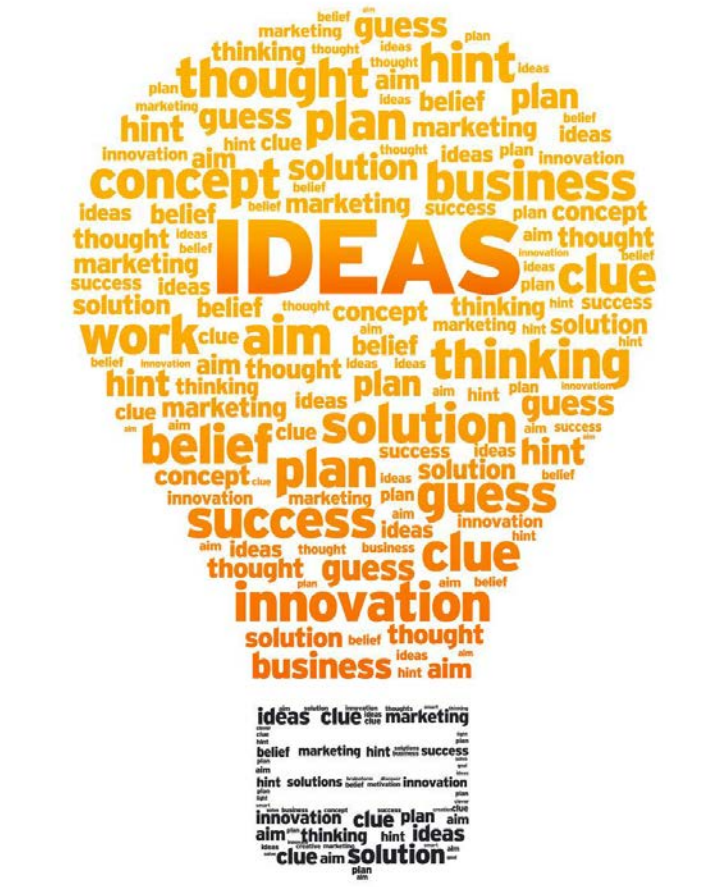
Engineering Innovation and Entrepreneurship

Fall 2020

Motivation and Overview

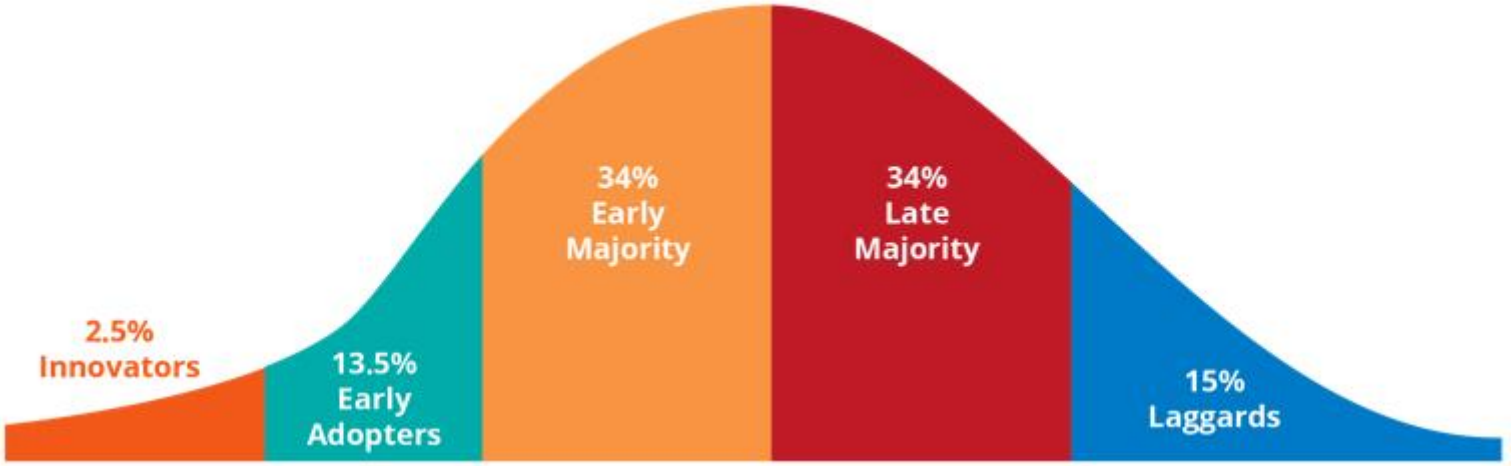
To put it simply, Innovations are new ideas, methods or devices. This definition is broad. Many believe innovations should be defined as an execution of ideas that address challenges and brings value when it is adopted. But what does it take for an innovation to be adopted and even more so what does it take for it to be diffused?

There are multiple models of diffusion. There is the epidemic model, probit model and more. Competition and information are also impacting of diffusion. Policy and subsidies will also impact the diffusion rate.



Diffusion of Innovation

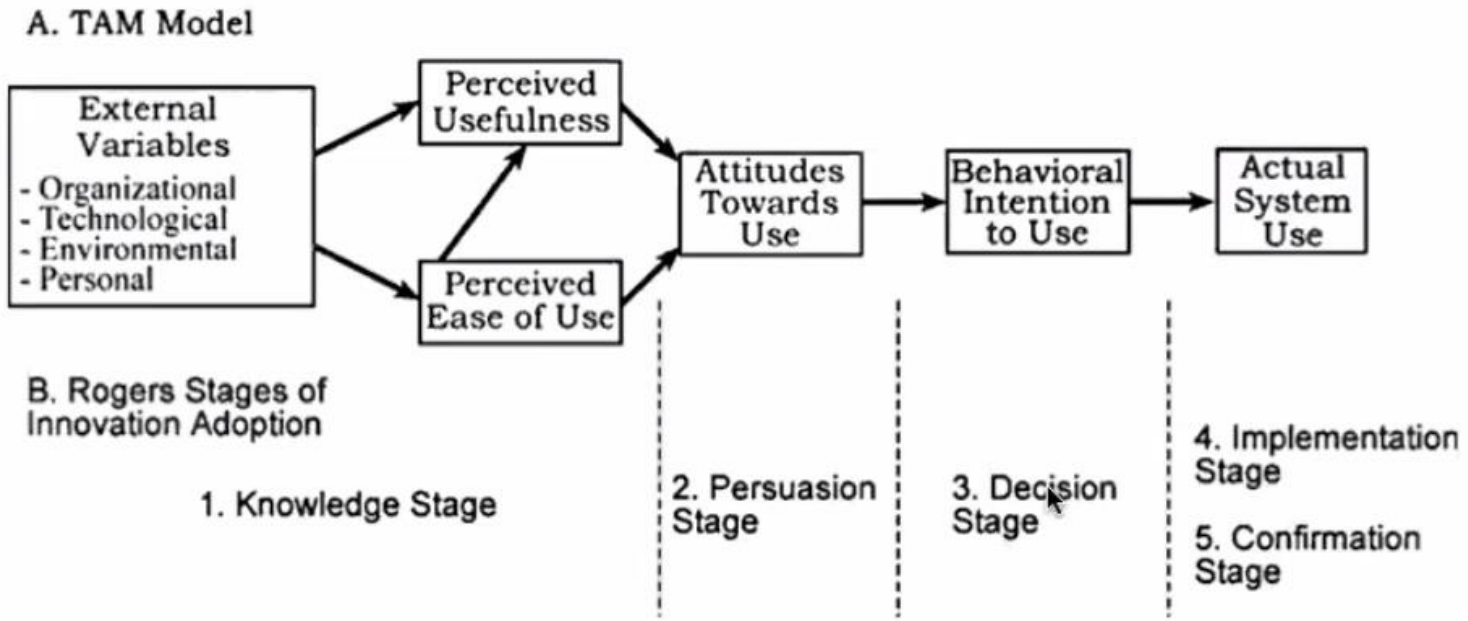
- When innovations are being diffused through the society there are groups that adopt in various ways



Diffusion Model Examples

Other models include the Rogers Stages and TAM model

The Rogers Model is more general and can align with other models



People adopt Innovations in various ways. Knowing this is important. The presumption is that diffusion happens slowly mainly due to information not being spread out.

Knowledge is one factor. This presentation and paper discusses all factors.

There are a lot of obstacles when it comes to diffusion and adoption of innovations, so it is important to know what these obstacles are.

Thank You

The of · Diffusion of · · Innovations

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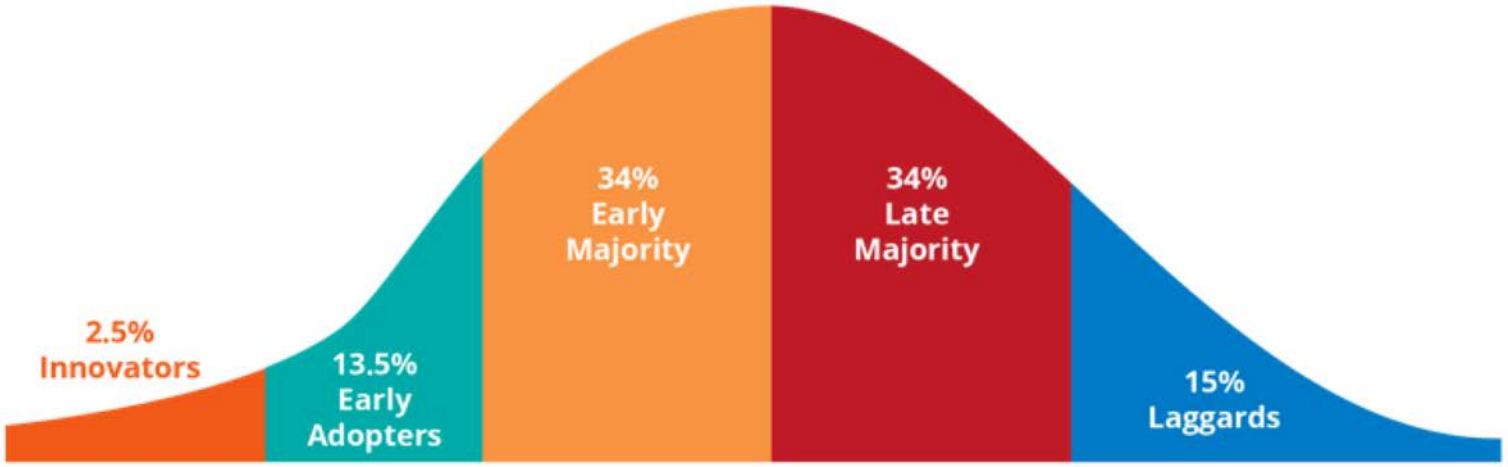

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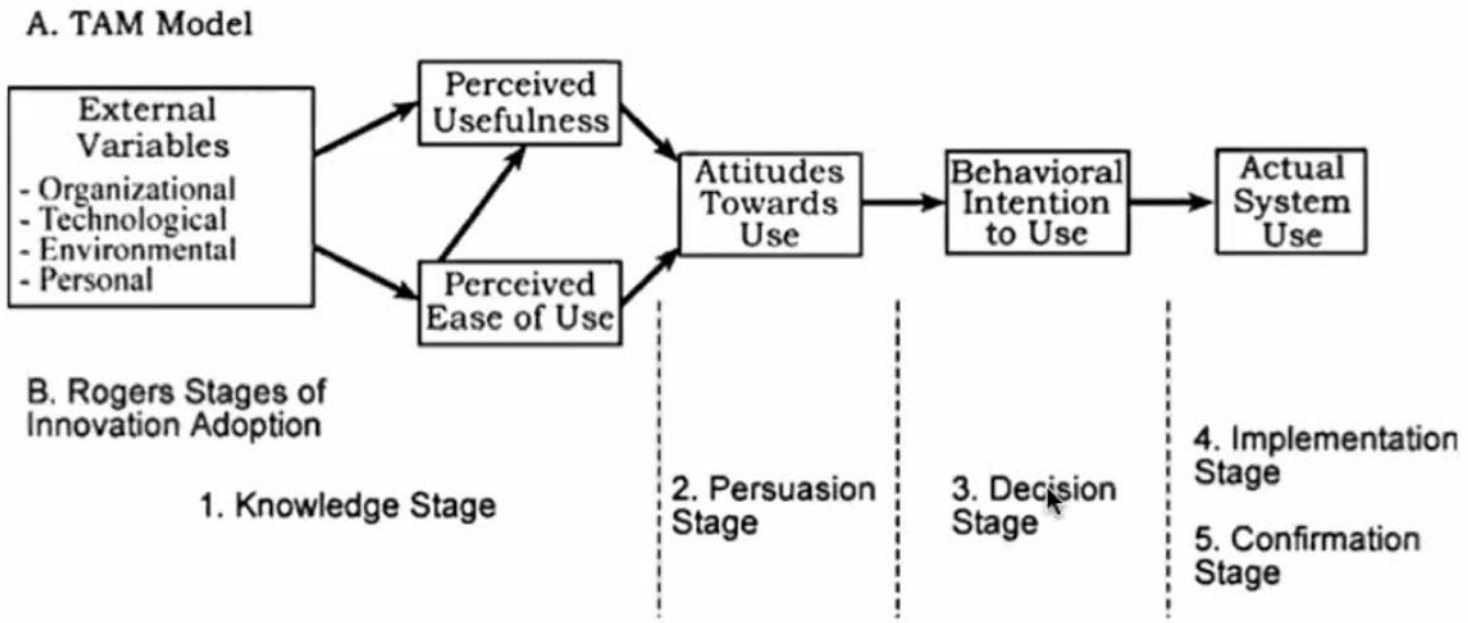

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Thank You

The Negative & Positive Effects of Intellectual Properties on Innovation

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MECE 5397 – Engineering
Innovation & Entrepreneurship

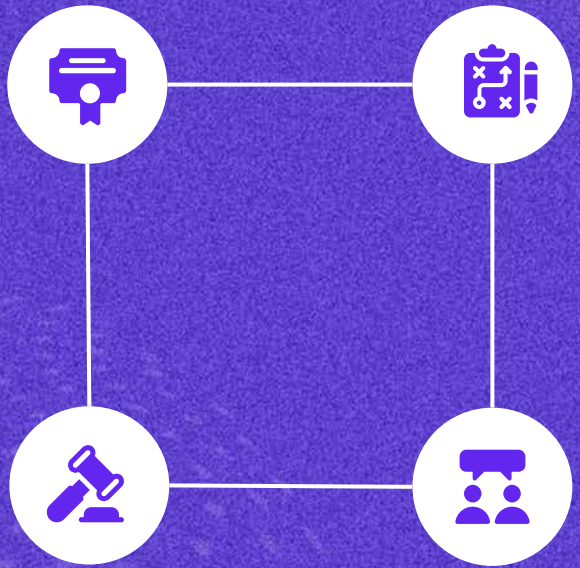
Types of Intellectual Properties & Protections

Copyrights

- Exclusive rights to literary and artistic works
- Copyrights last at least 50 years longer than the copyright holder's death

Patents

- Exclusive right granted of an invention or feature for a limited period of time (~20 years)
- Patent holders have the right to decide to allow or not allow others to use their patented invention



Trademarks

- Exclusive rights to a brand's name or logo
- Trademarks can be maintained for an unlimited amount of time if renewal requirements are met

Trade Secrets

- Protects confidential information
- Owner must take own steps to insure confidentiality of information

Source: What Is Intellectual Properties?

Positive Effects on Innovation

Increased Confidence to Innovate

- When innovators have access to stronger intellectual property laws, they are more likely to purse their ideas.
- Countries with reliable intellectual property laws see more innovation as compared to countries who don’t.
- New products and even industries can arise due to the protection of intellectual ideas

Monetization of Innovations

- Intellectual Property Laws allow innovators to make revenue from their innovations by various methods
- Innovators may use their patents to make a product and profit off that product, or may license the patent to other entities for a fee
- Intellectual Property holders can also enforce their intellectual properties and receive money for infringement

Source: “Intellectual Property: The Key to an Innovation Economy” ,“5 Ways to Turn Your IP Into New Sources of Revenue”

Negative Effects on Innovation

Patent Trolls:

- Patent Trolls - A person or firm that that does not produce their own patents, but instead buy them and use litigation to enforce against companies & inventors.
- A Patent troll first obtain patents, for example like by buying from inventors who cannot afford to develop their patents and sue companies that use the patent to gain money.
- Litigation is extremely costly. Spending for R&D spending for large and small firms see great decline when sued by patent trolls

Anti-Commons:

- Anti-Commons – A theory where a resource can become underused because there are many owners who have the right to prevent others from using the resource.
- Anti-Commons leads to privatization of intellectual properties making it harder for sequential innovation. Owners could sell or
- Example of Anti-Common: Genetically engineered crop “Golden Rice” created for humanitarian efforts, had a hard time becoming commercially available due to many patent infringements

Source: “The Evidence Is In: Patent Trolls Do Hurt Innovation”, “Are patent trolls smothering innovation?”, “Whither the Research Anticommons?”

Summary

- Intellectual Property Laws exist to provide protections on ideas, products, or services. There are 4 main types of intellectual property rights that all offer different protections: Copyrights, Patents, Trademarks, and Trade Secrets

- Intellectual Property are important for innovators because they allow them have confidence in exploring their ideas due to protections. They are also important because they allow innovators to monetize their innovations, thus further incentivizing innovation.

- Intellectual Properties might also lead to negative effects on innovation. Entities might abuse intellectual property laws, becoming Patent Trolls. Protections on certain innovations might also prevent sequential innovation to occur.

Resources

- World Intellectual Property Organisation, “What is Intellectual Property ? What is Intellectual Property ?,” *WIPO Publ.*, vol. 450(E), p. 25, 2016, doi: 10.1016/j.neuroimage.2005.10.001.
- 2017 | T. A. U.S. Embassy Bridgetown | 26 April, “Intellectual Property: The Key to an Innovation Economy,” 26-Apr-2017. [Online]. Available: https://bb.usembassy.gov/intellectual-property-key-innovation-economy/.
- “5 Ways to Turn Your IP Into New Sources of Revenue,” 03-Aug-2020. [Online]. Available: https://ip.com/blog/5-ways-turn-ip-new-sources-revenue/.
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- W. Lesser, “Whither the Research Anticommons?,” in *From Agriscience to Agribusiness: Theories, Policies and Practices in Technology Transfer and Commercialization*, N. Kalaitzandonakes, E. G. Carayannis, E. Grigoroudis, and S. Rozakis, Eds. Cham: Springer International Publishing, 2018, pp. 131–144.

Overview of Disruptive Innovation and its Impact in the Upstream Oil and Gas Industry

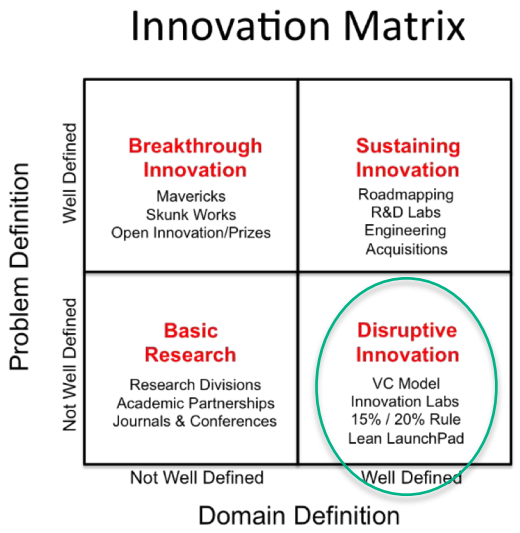
Aaron Tanvir
ID: 1529344

ENGI 4397: Leadership and Entrepreneurism I

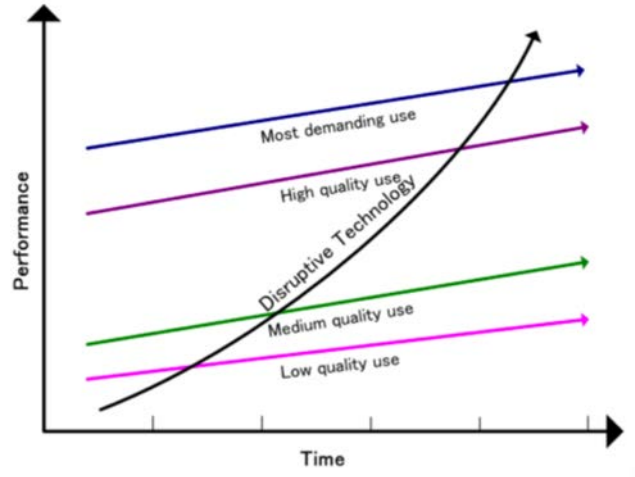
November 23, 2020

Overview

- Innovation and Types
- Disruptive Innovation
- Modeling Disruptive Innovation in K-Waves for the upstream oil and gas industry
- Example: Shale Oil/Gas Technology (i.e. hydraulic fracturing & directional drilling)



Taken from Satell 2017



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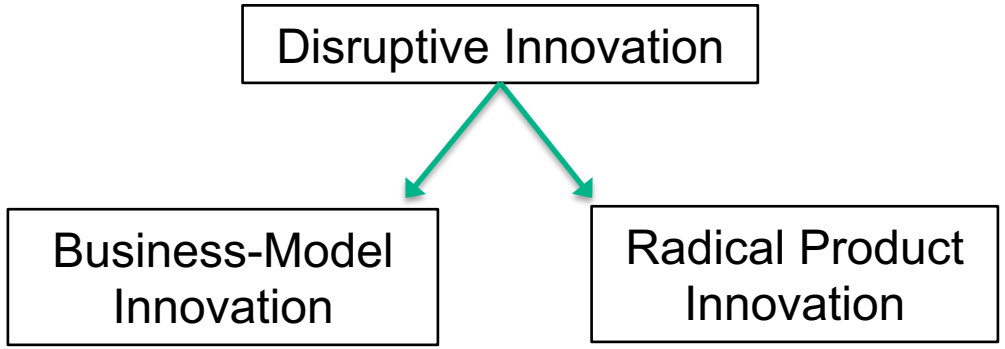
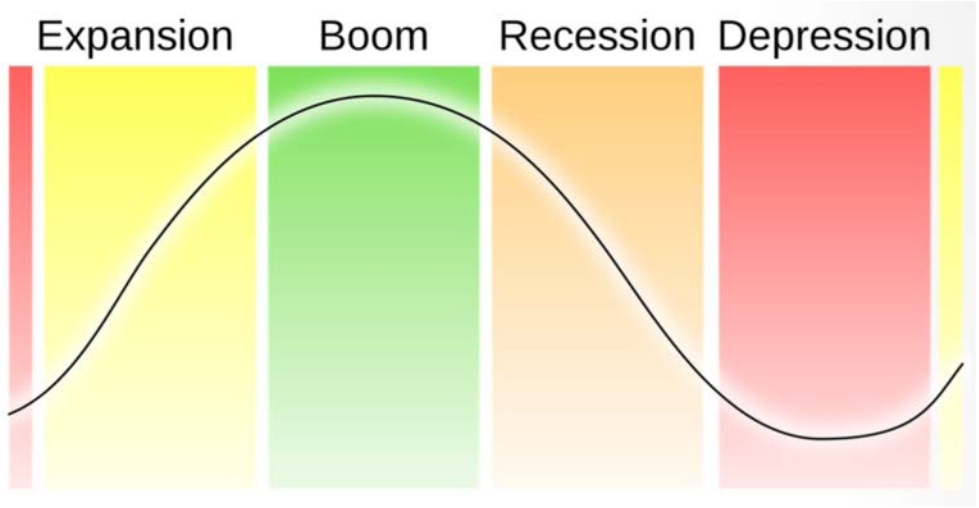


Modern Waves of Disruptive Innovation Correlated to “Hard Times” in Industry



Taken from Lecture 7 Slides

Oil Price History		
	Date	**Reason**
Upturn	1974 - 1985	Oil Embargo/Political Tensions
Downturn	1986 - 1998	OPEC Increases Market Share
Upturn	1999 - 2008	Chinese Demand
Downturn	2014 ~ Present	Supply Glut

Produced:
Horizontal Wells
Top Drive
Reservoir Simulation
Coiled Tubing
3D Seismic
Wireline Testing
Deepwater Exploration
Shale Extraction*

Rotary Drilling

Shale Extraction

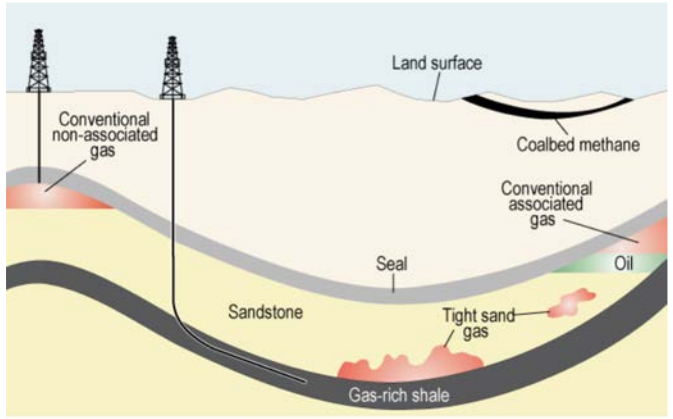
Data Mining/Management?
Data Analytics?

1901

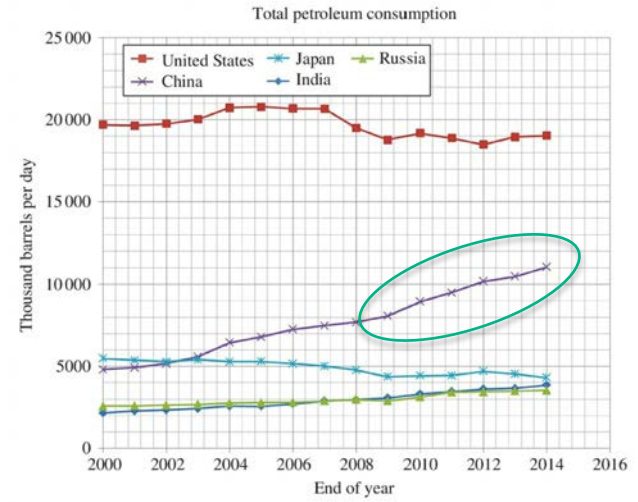
1999

TBD

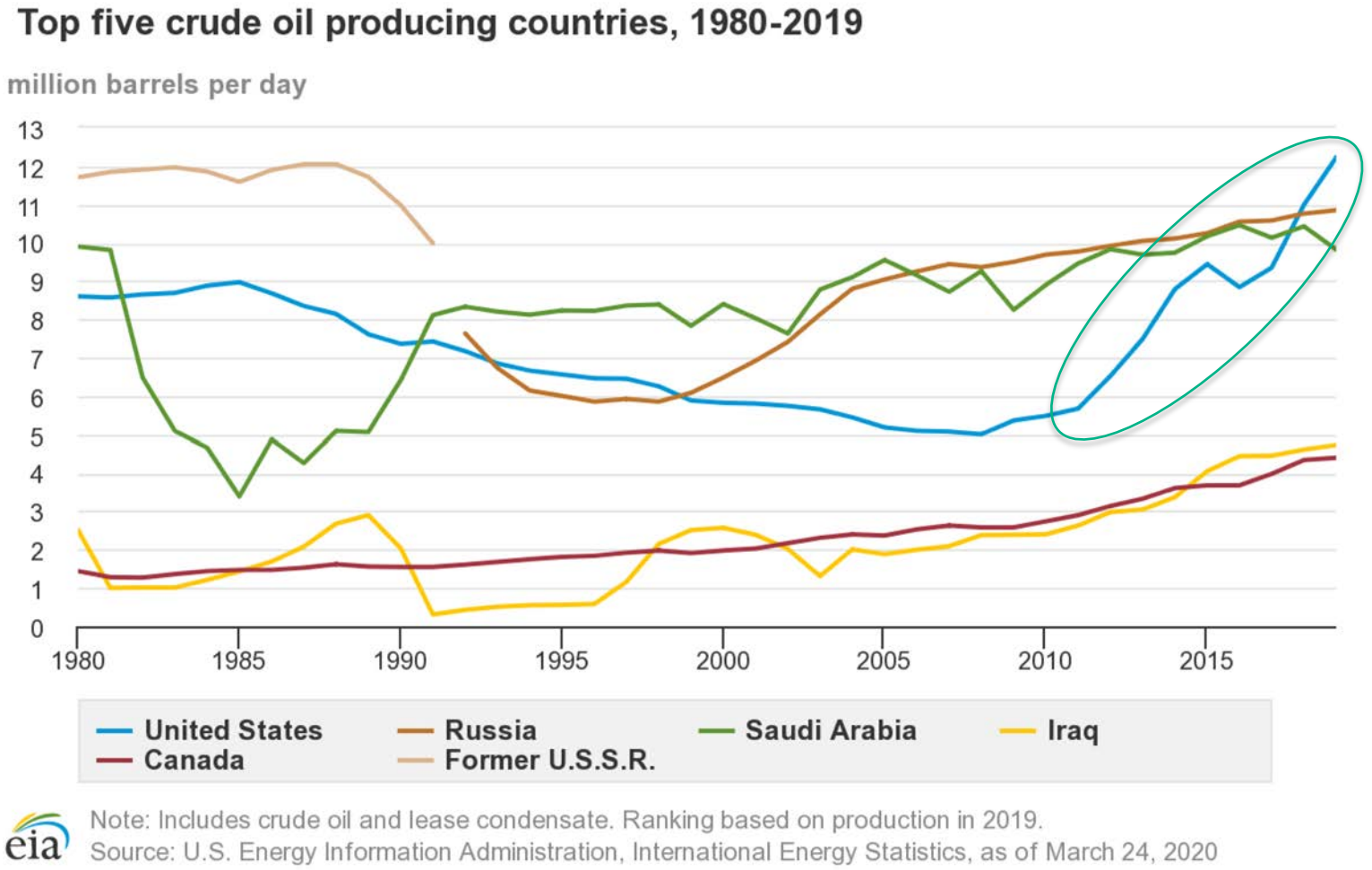
Shale Oil/Gas: The Most Recent Technology to "Disrupt" the Energy Economy



SOURCE: US Energy Information Administration; US Geological Survey



Taken from Fanchi & Christiansen 2017



Summary

- Disruptive Innovation is a type of innovation with a well defined market and a not well defined problem
- Previous O&G Disruptive Innovation:

Rotary Drilling – accelarated oil production all over the world

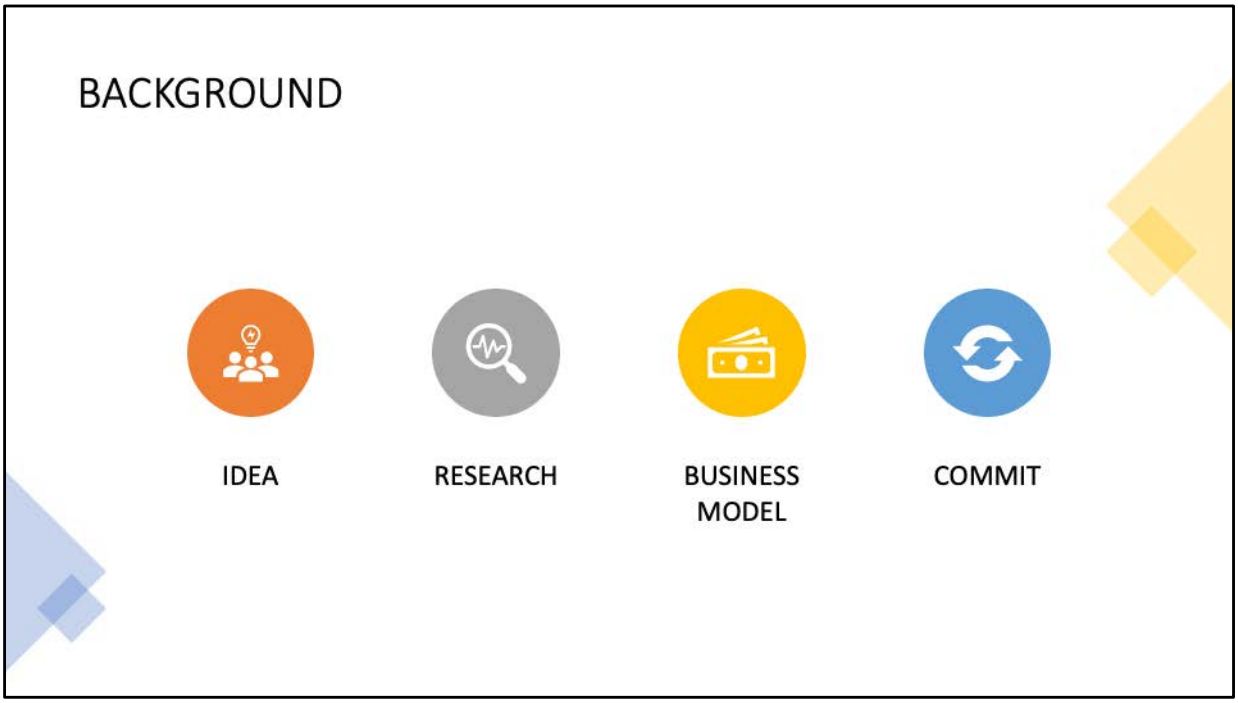
Shale Extraction – provided the U.S. energy independence

- History shows oil prices tend to dominate industry innovation
- Future O&G Disruptive Innovation mainly involves the digitalization of the industry

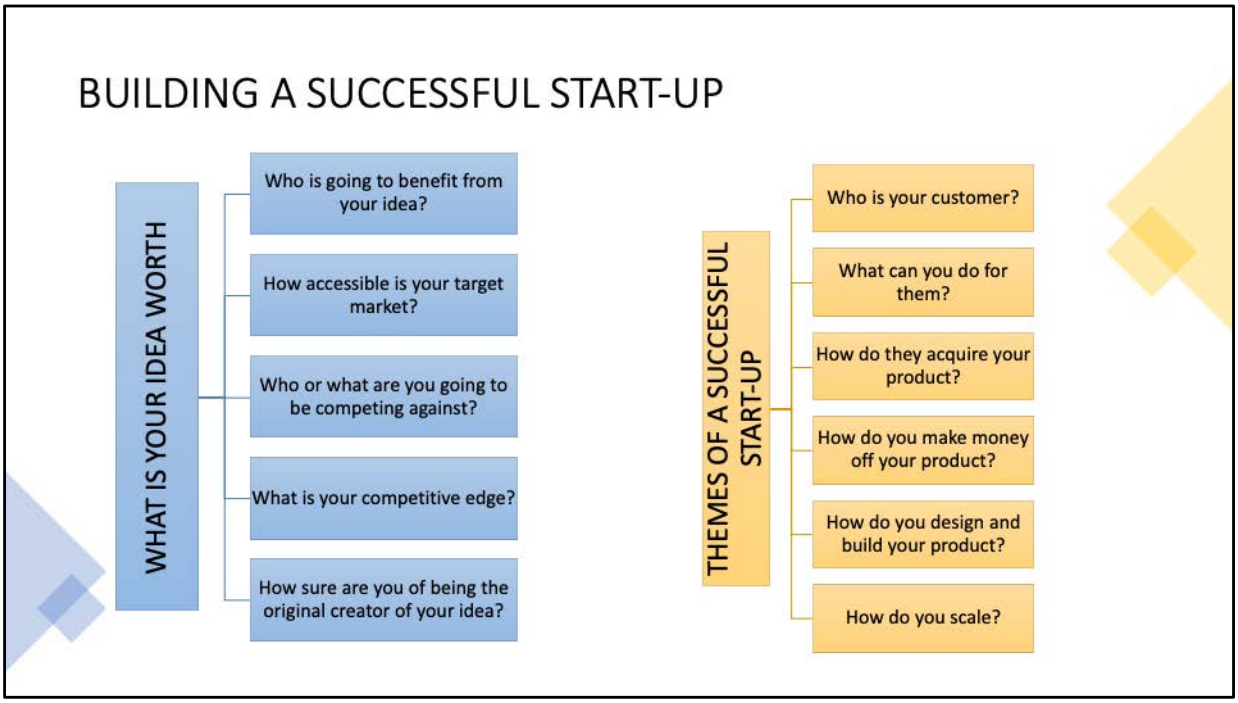
References

- Satell, G. (2017). *Mapping Innovation: a playbook for navigating a disruptive age*. New York, NY: Mc-Graw-Hill Education.
- Fanchi, J.R. & Christiansen, R.L. (2017). *Introduction to petroleum engineering*. Hoboken, NJ: Wiley.
- https://www.eia.gov

Please check the notes on next slides for what I would like to convey to the audience



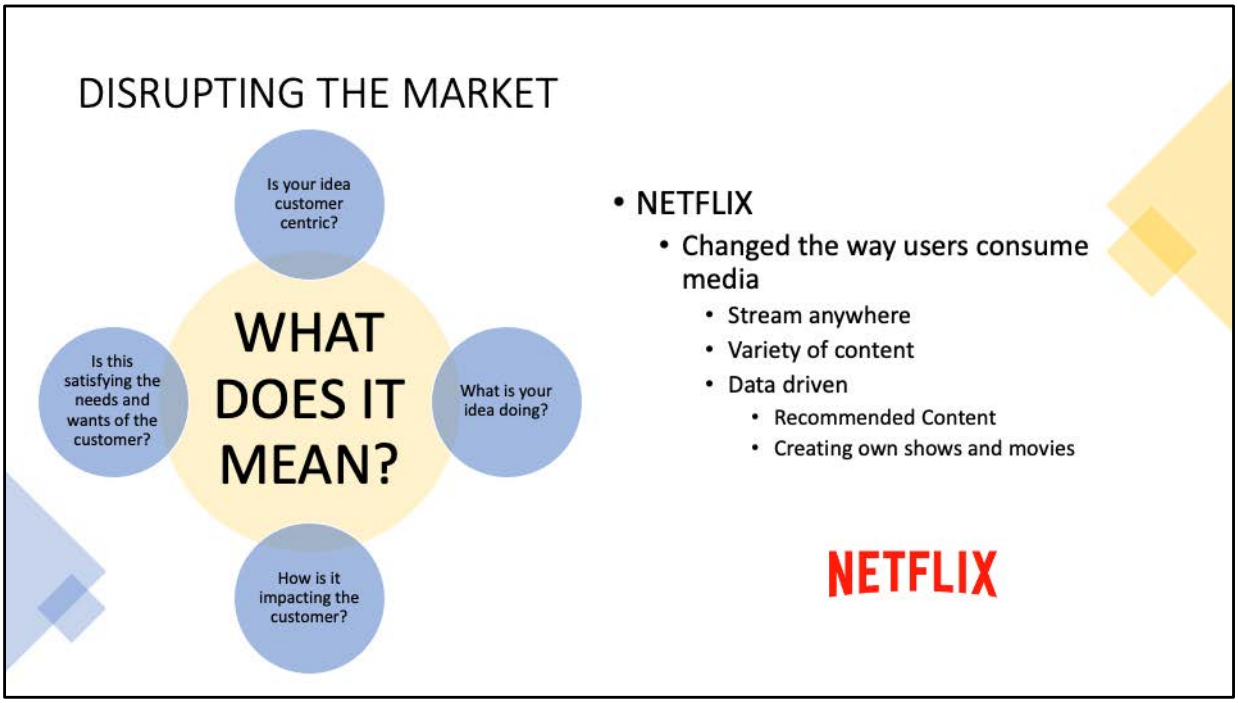
- motivation, some basics and overview
- I want to connect what we have learned in class about disruptive innovation and start ups.
    - I've personally seen successes and failures when trying start a business as an entrepreneur and have come to an appreciation of what it takes to pursue the idea and I want to share this with you
- Idea-> Research -> Business model -> Full send
- Adapting throughout the process



- Motivation of idea and what makes it special
- Why are you motivated to do this, TOO
- Targeted market or audience
- They need to set a focus and commit
    -Adapt as needed

-It's gonna be a constant cycle of iteration and adapting to the customers needs and wants

- Make sure to stay consistent in effort and commit to your idea if the research and model checks out.
    - No semi-committing.
    - Those that are determined, passionate, and commit with intensity tend to succeed. (mentioned in paper)



-what is a disruptive idea/innovation?

- really emphasize that your intention should be changing the users view/behavior/methodology
- not really stealing customers from other companies but stealing customer activities
- where is there a gap in the market that other leading companies aren't providing or where you can substantially provide a better product

- Netflix as an example
  - Original goal was to improve customer experience with video stores
    - Founders were unhappy with limited rentals and late fees
    - Wanted to improve the user experience
  - Forecasted digital transformation and committed to it
    - Almost sold to blockbuster but blockbuster ceo almost laughed at the offer
  - They improved the business model in not just one way but made sure to think ahead and adapt to what customers are going to want as they continue to use their product/service

CONCLUSION

- Building a successful start-up is not easy
  - Value and themes of the idea/start-up
- Disrupting the market
  - Intention is not to steal customers from competitors but stealing customer activities
- Analyze other start-ups
  - There is no one way to succeed

- Connect building the startup/idea to how it needs to disrupt the market as well
- Ensure that you will stay committed and motivated to the idea and that the idea is really catered to the customer
- Disrupting the market means that you are changing the way a user sees or behaves
    - You're providing a new product, a new way of doing things, and catering to what a user would want and not what a company is able to provide
        - Must always adapt to the customer and their constantly changing needs
- There isn't a cookie cutter answer that can guarantee success of a startup or that it will disrupt the market
    - This is just a glimpse of what an entrepreneur should seek and use other ideas/business as inspiration and create a methodology that suits your idea/start-up

Resources

- https://www.raizcorp.com/five-critical-skills-you-need-to-pivot-4-adaptability/
- https://logos-world.net/netflix-logo/
- https://uh.primo.exlibrisgroup.com/permalink/01UHO_INST/1j911kt/cdi_askewsholts_vlebooks_9780273744078
- http://mdi.com.pk/entrepreneurship/24-steps-to-a-successful-startup/
- https://thenextweb.com/podium/2019/05/29/what-it-means-to-actually-disrupt-an-industry-and-3-signs-your-startup-is-doing-it/
- https://hbr.org/2019/06/disruption-starts-with-unhappy-customers-not-technology
- www.businessmodelsinc.com/exponential-business-model/netflix/

HOW A SUCCESSFUL START-UP CAN DISRUPT THE MARKET

BY: ASSAD SOOMRO

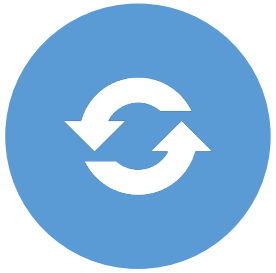
CHECK NOTES

BACKGROUND

IDEA

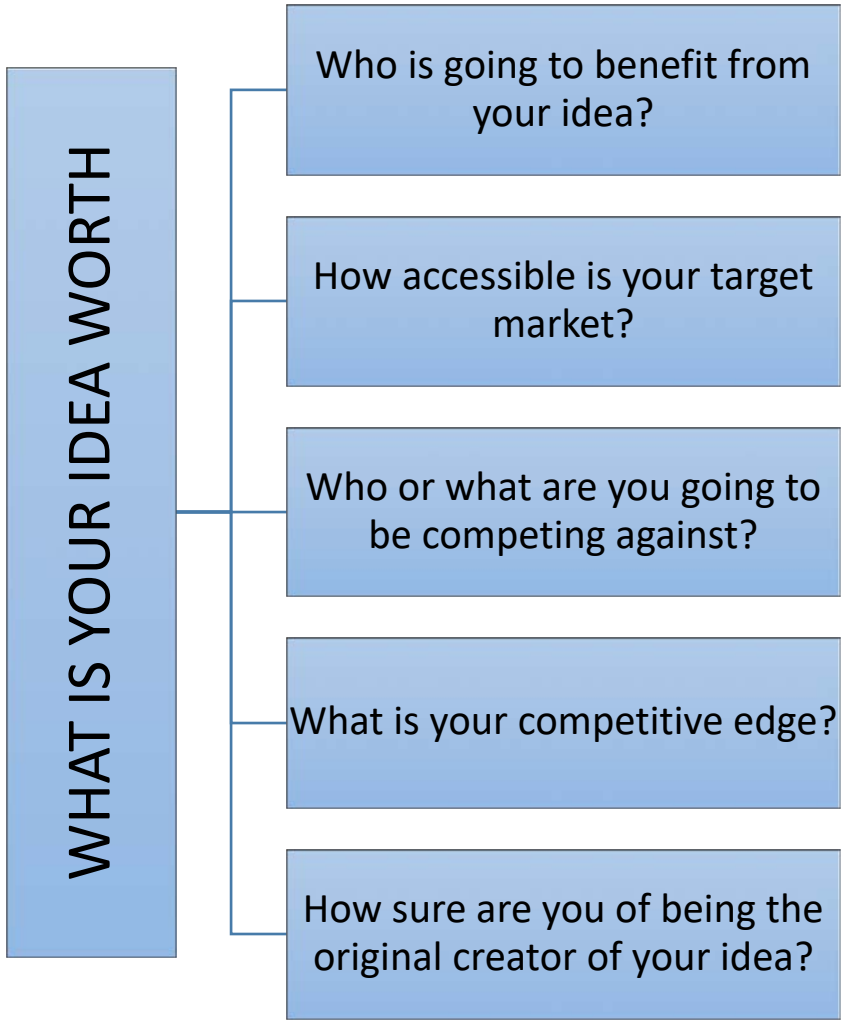
RESEARCH

BUSINESS MODEL

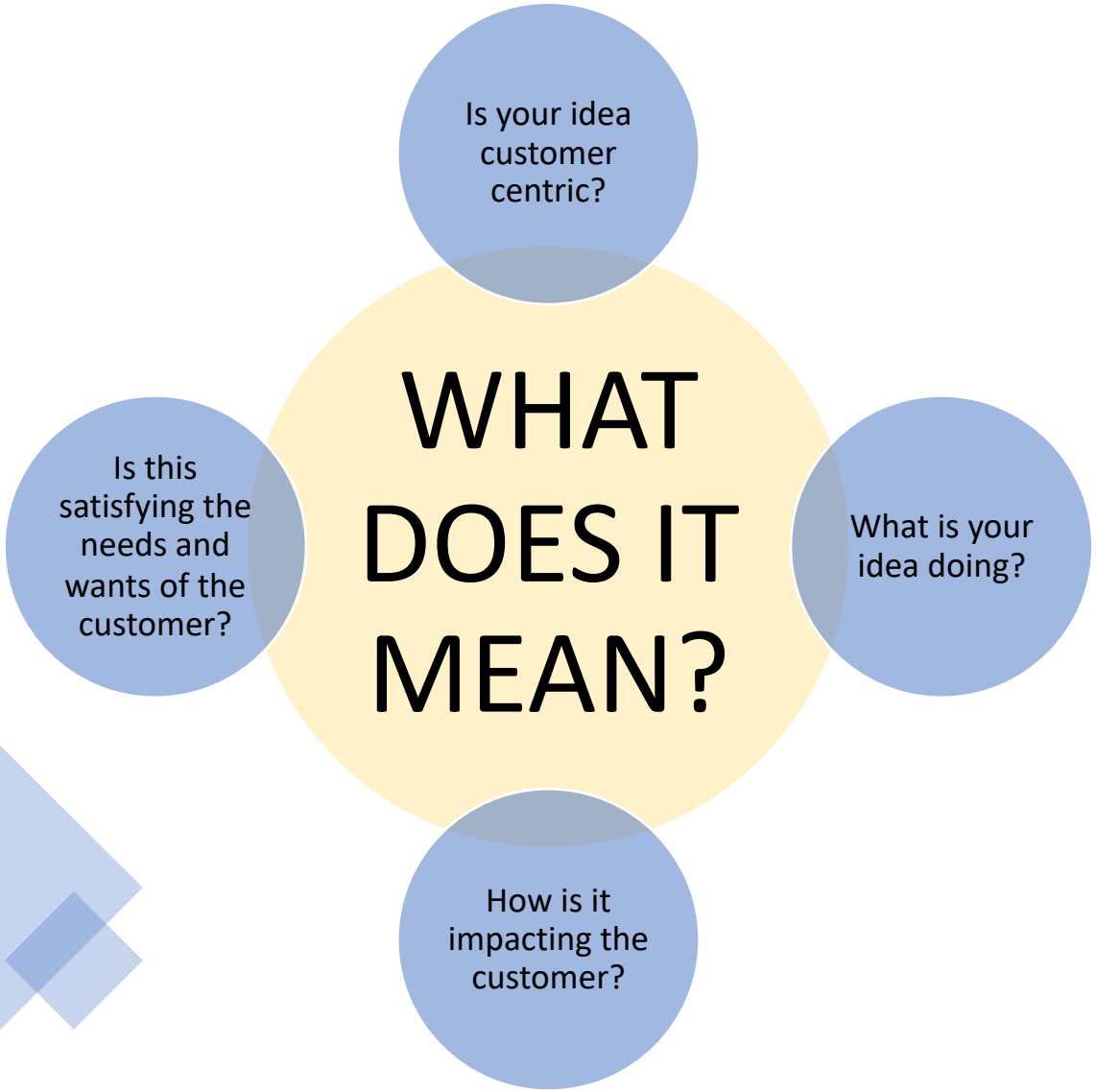


COMMIT

BUILDING A SUCCESSFUL START-UP



DISRUPTING THE MARKET



- NETFLIX
  - Changed the way users consume media
    - Stream anywhere
    - Variety of content
    - Data driven
      - Recommended Content
      - Creating own shows and movies

NETFLIX

CONCLUSION

- Building a successful start-up is not easy
  - Value and themes of the idea/start-up
- Disrupting the market
  - Intention is not to steal customers from competitors but stealing customer activities
- Analyze other start-ups
  - There is no one way to succeed

Resources

- https://www.raizcorp.com/five-critical-skills-you-need-to-pivot-4-adaptability/
- https://logos-world.net/netflix-logo/
- https://uh.primo.exlibrisgroup.com/permalink/01UHO_INST/1j911kt/cdi_askewsholts_vlebooks_9780273744078
- http://mdi.com.pk/entrepreneurship/24-steps-to-a-successful-startup/
- https://thenextweb.com/podium/2019/05/29/what-it-means-to-actually-disrupt-an-industry-and-3-signs-your-startup-is-doing-it/
- https://hbr.org/2019/06/disruption-starts-with-unhappy-customers-not-technology
- www.businessmodelsinc.com/exponential-business-model/netflix/

Pathways To A Successful Startup

Course: MECE 5397: Engineering Innovation & Entrepreneurship
Instructor: Prof.Haled Ardebili
Student's name: Anh Phung (ID:1801119)
Presentation Slides: due at 10 pm Nov 23rd

Introduction

What is a successful startup?

- A successful startup is a new company founded by one or more entrepreneurs. It provides valuable products to customers and is accepted from customers. It can make profit on its products, and it does not only survive , it even develops wider to make more profit in long term. Finally, it has a solid place in the market and can compete to other existing companies.

Objective of presentation: Indicating mistakes that the startups usually make, and giving important steps to help them reduce risks and increase the percent of success.

Outline of presentation:

1. Rate and 20 top reasons of failure of the startups.
2. 24 steps to a successful startup.
3. Conclusion of presentation.

Rate & 20 Reasons of Failure of Startups

Figure 1: Showing 90% of startups fail

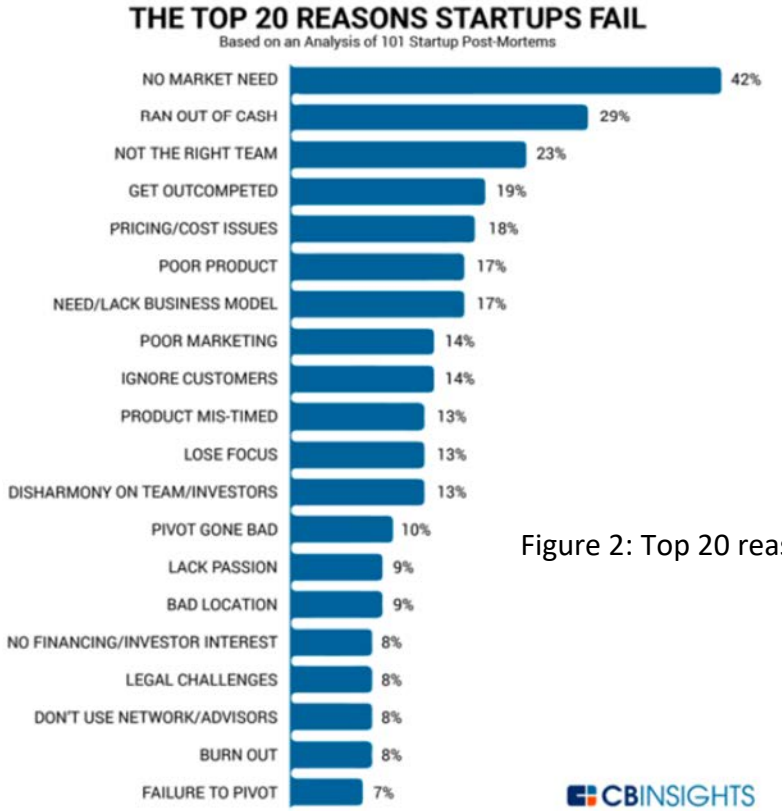


Figure 2: Top 20 reasons startups fail

24 Steps to A Successful Startup

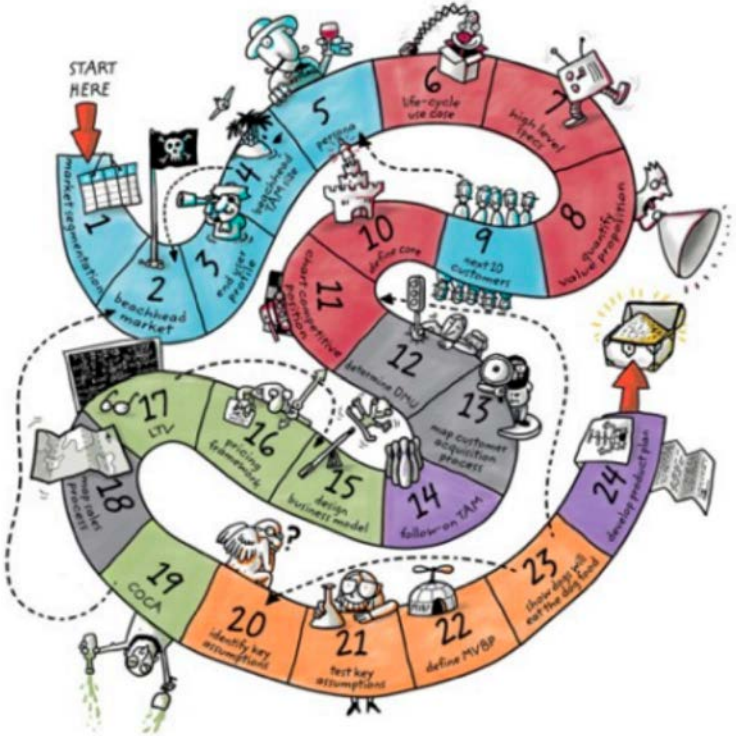


Figure 3: The 24 steps needed for a successful startup

6 critical questions for startup success:

1. Who is your customer?
2. What can you do for your customer?
3. How does your customer acquire your product?
4. How do you make money off your product?
5. How do you design and build your product?
6. How do you scale your business?

Conclusion

A successful startup sounds simple but it is not. The evidence proves that estimating 90 percent of new startups fail and only 40 percent of them have a profit in 2020. There are several pathways to run a new company but choosing a right one is challenging. Therefore, people have to prepare carefully before they make decision to start their own company. Following the standard steps above is a essential preparation because these steps are made from several disciplined entrepreneurship, who want to help new startups to reduce the risks and do not make the same their mistakes.

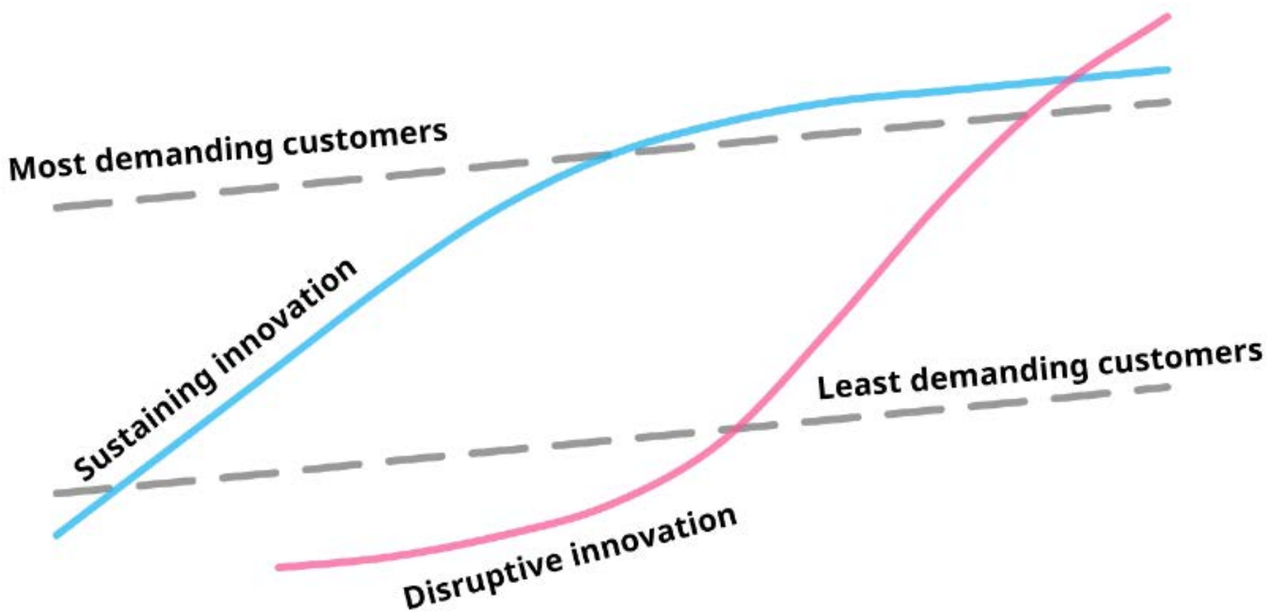
Breakdown of disruptive innovation and how to anticipate this phenomenon

BY BRUNO ESQUIVEL

ENGINEERING
THE FUTURE

UNIVERSITY of HOUSTON | ENGINEERING

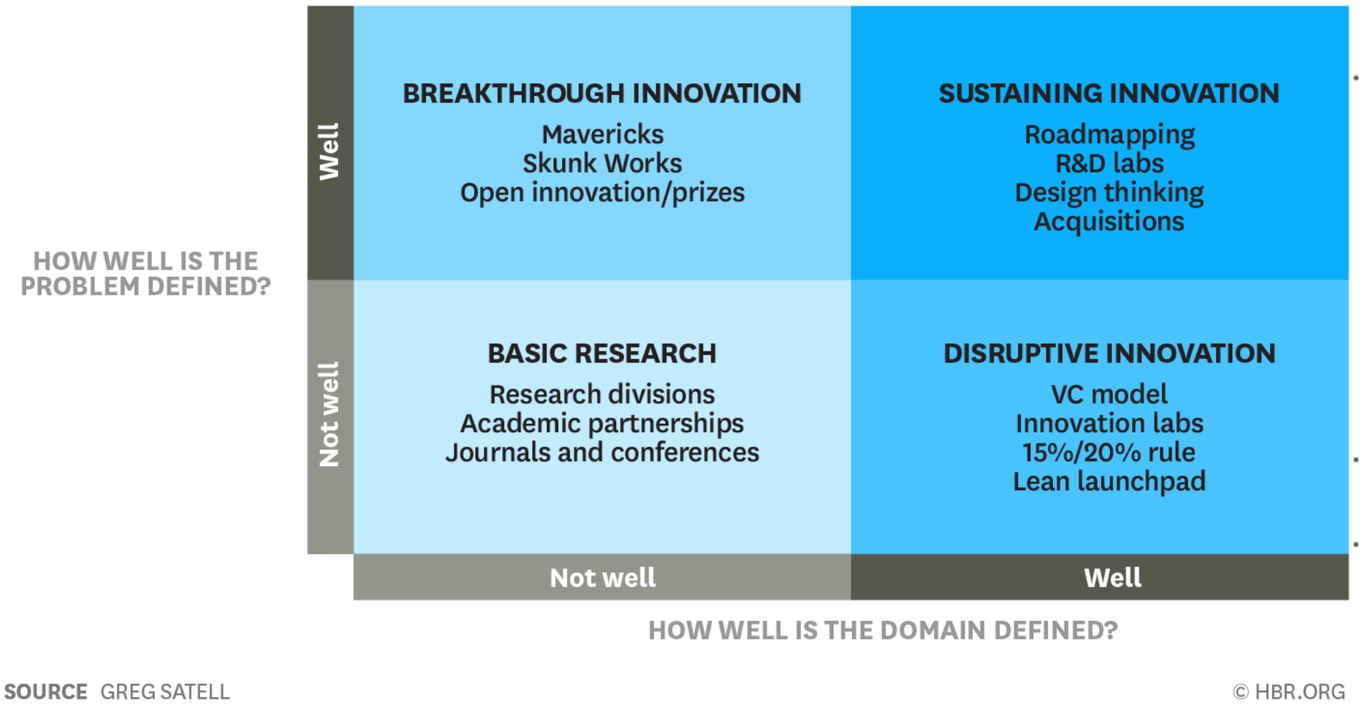
DISRUPTIVE INNOVATION CURVE



SOURCE:HARVARD BUSINESS REVIEW

Disruptive innovation describes a development scenario where a smaller company with fewer assets or resources can “disrupt” or “successfully challenge” an established business. Disruptive innovation has the potential to impact industries and radically change the way businesses operate. Identifying and anticipating patterns of disruptive innovation has the power to prepare a business for potential challenges

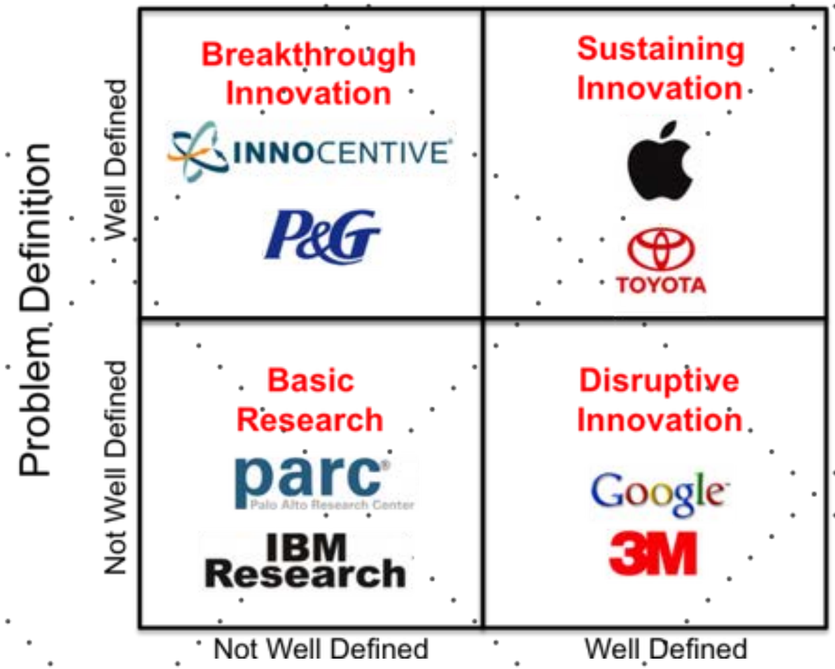
4 Types of Innovation



SOURCE GREG SATELL

© HBR.ORG

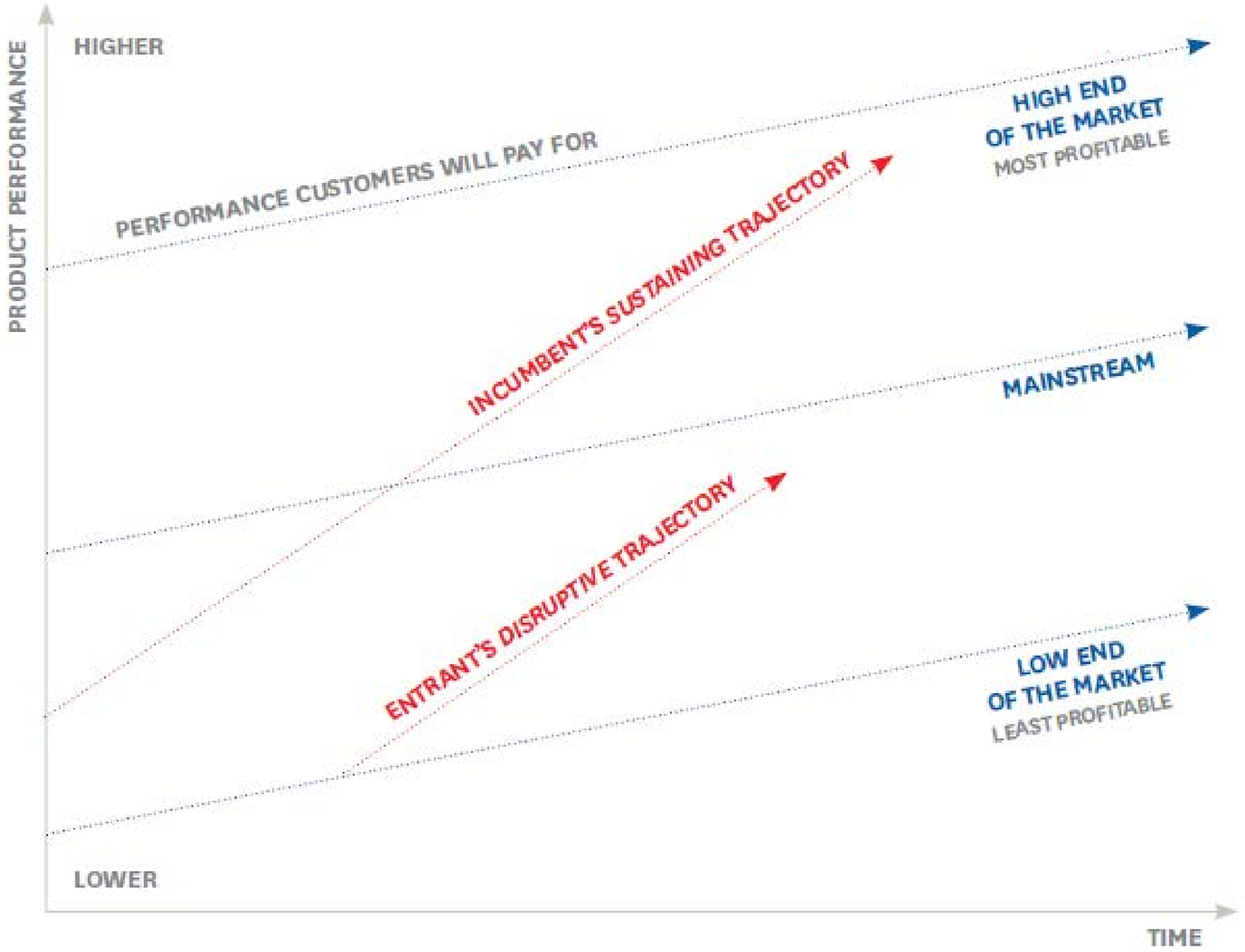
Innovation Matrix



SOURCE: FORBES

INNOVATION IN RELATION TO HOW WELL THE PROBLEM IS DEFINED AND HOW WELL THE DOMAIN IS DEFINED PROVIDES INSIGHT IN A BUSINESS OR COMPANY

DISRUPTIVE INNOVATION



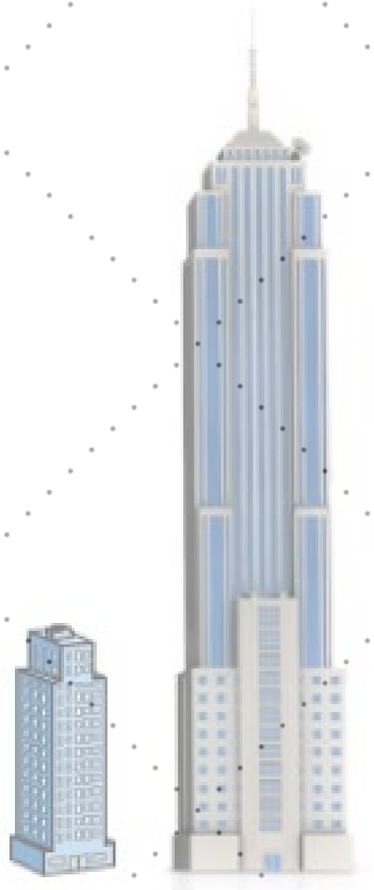
SOURCE:HARVARD BUSINESS REVIEW

DISRUPTIVE INNOVATION

Improvements can progress faster than customer demand.

Important to identify the range of performance that customers can utilize

- IDENTIFY DISRUPTER'S BUSINESS MODEL STRENGTHS
- IDENTIFY OWN RELATIVE ADVANTAGES
- EVALUATE CONDITIONS THAT WOULD HELP THE DISRUPTER FROM TAKING ADVANTAGE
- BUSINESS SHOULD BE MALLEABLE ENOUGH TO ADOPT NEW GROWTH PATHWAYS



INNOVATION AND CREATIVITY IN ORGANIZATIONS

BANAFSHEH HEKMATNIA

PSID: 1902870

❖ Overview

A large number of research papers, mainly published after 1985 have covered creativity in organizations. Despite all of them, only a few models and theories appear to be defined.

Some theories developed innovation and creativity in organizations based on psychological theories.

❖ In this work,

two models that have discussed innovations in organizations based on psychological aspect have been studied:

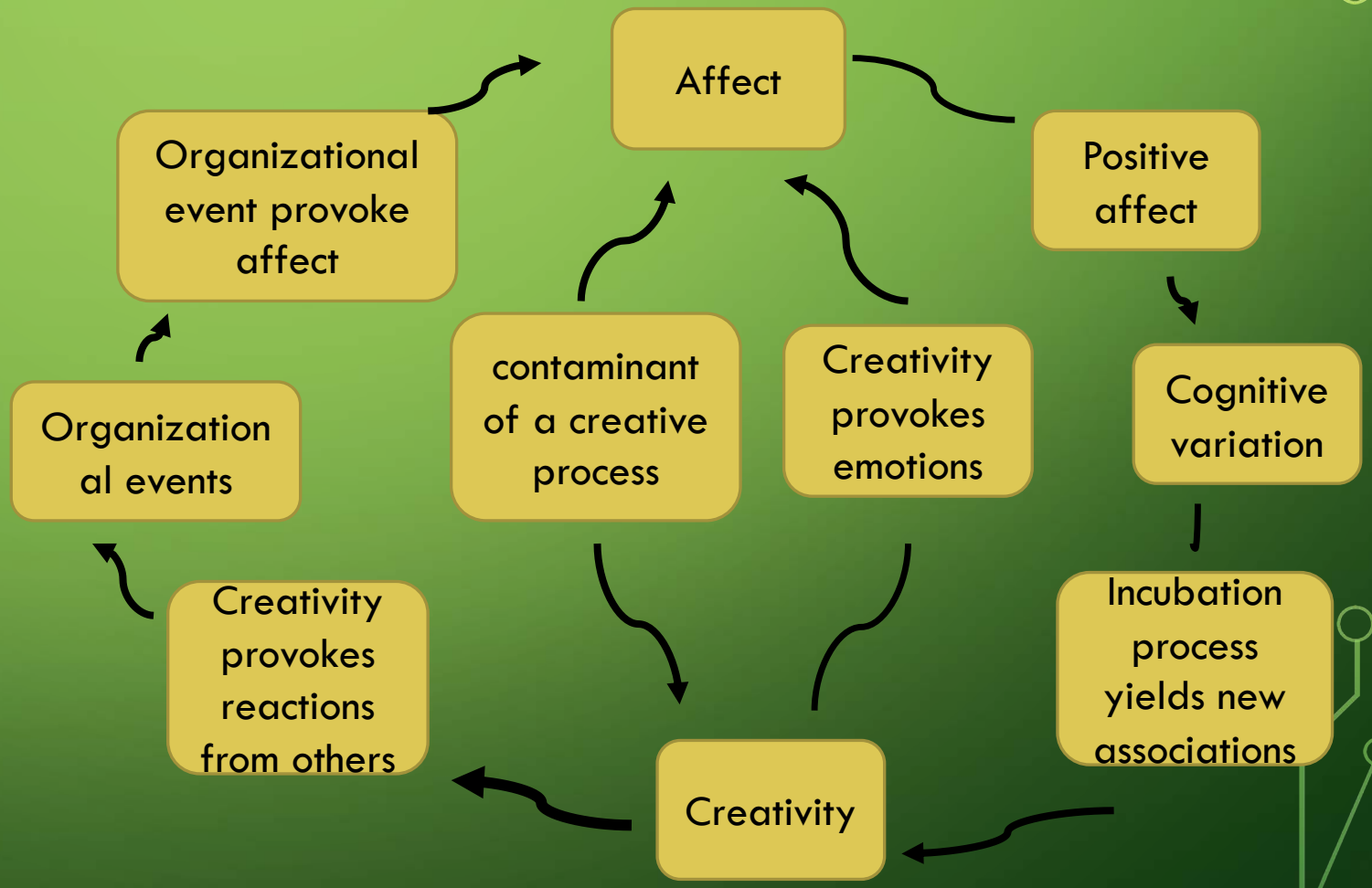
1. Organization affect cycle in creativity
2. Path model for drivers of organization innovation

1. ORGANIZATION AFFECT CYCLE IN CREATIVITY

❖ **Methodology:**

This theory suggests the outlines of a general theory about affect of creativity in organization based on the relationship between people.

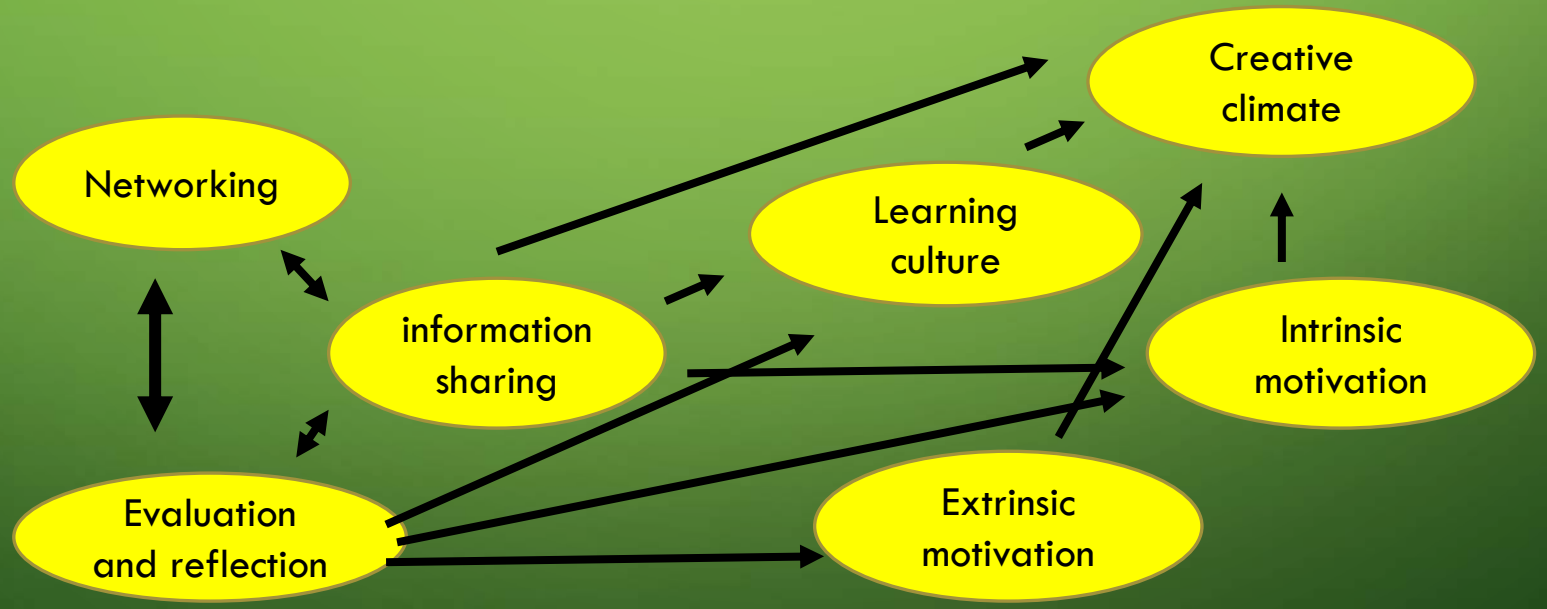
It discuss that diverse influences can, start a dynamic pattern of increasingly or decreasingly positive affect on creativity. The theory is known as the organizational affect-creativity cycle .



Source: Amabile, et al 2005

2. PATH MODEL FOR DRIVERS OF ORGANIZATION INNOVATION

Methodology:
This theory determines that the perceived creative organizational climate depends mainly on the factors such as information sharing, learning culture, and intrinsic and extrinsic motivation. They postulated it as a path model.



Source: Sundgren, et al 2005, Klijn et al, 2010

SUMMARY

- In general it can be concluded that there has already been done a great deal of research into organizational creativity from the psychological perspective.
- Among all the models that have been discussed the two mentioned theories had significant affect on the research in this field and many researches have started their work from these results.
- More in depth and comparable research is still required as well as combining research results from other scientific areas to this psychological findings.

Disruptive Innovations in the 20th Century affecting the future

...

Braulio Garza

Motivation, Basics, & Overview

The world as we know it is changing right in front of our eyes. In order to change with it we must first see how the current business practices have disruptive the future plans. Many things sought to help us have only made it easier to see a decline in other aspects of our lives.

Overview

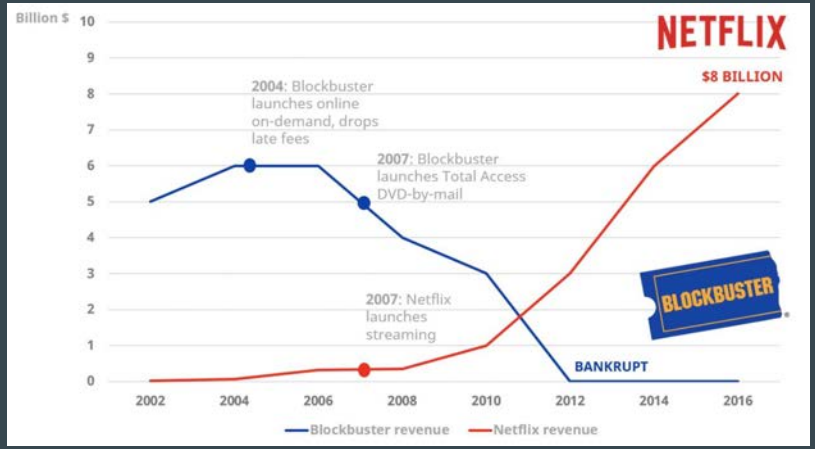
Understanding the new market

How disruptive innovations are changing the world.

Understanding the new market

In the business side of things there have been many new innovations that have happened with the help of the internet. The ideas are not new but the business and the way they are handling things are new. What I am talking about is the shipping business. As long as I can remember there has also ways been a carry out and ship out delivery.

Uber eats, Postmates, Puff, Favor, Netflix, and Doordash contribute to the new sort of business model of delivery of any and every service and or product. These services have disrupted the current business model of picking up items and stores in general. This made same day delivery more mainstream.



The new “carbon footprint”

New radical product innovations affect the future. In an example of having every year a new phone quickly creates a huge carbon footprint especially having to upgrade on the latest phone.

The phones and accessories also disrupted the human health such menatly and physically. As more and more people become dependant on their devices, health in ways such as menatlly has declined.

Summary:

In order to see into the future problems and get ahead of them. We must look at present day disruptive innovations. When shipping is reduced to hours and new technology takes over our lives. The future the world might be very different due to these disruptive innovations in the sense that a new carbon footprint emerges into the new world.

How Disruptive Innovation Affects Markets and Drives Technological Innovation

BRANDON LYNDON

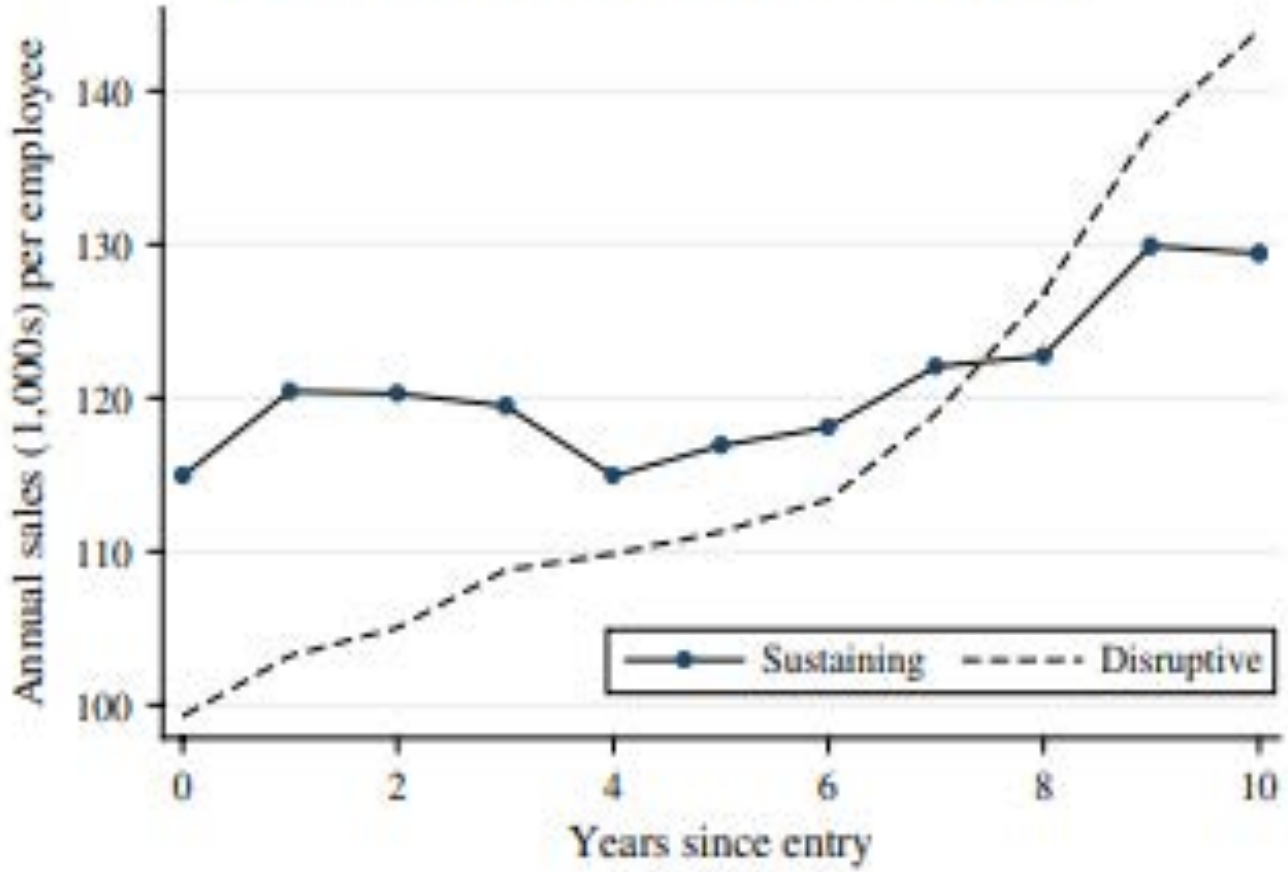
Introduction

- I found the idea of innovation in general to be very interesting. I wanted to learn more about disruptive innovation in particular.
- After doing some research I determined that a good definition for innovation would be a new idea, process, or physical object.
- For disruptive innovation I concluded after reading multiple articles of disruptive innovation that it should be broken into three parts. The first is disruptive technological innovation which is a new technology that performs better with a new or emerging market as opposed to the old market. The second is business-model innovation which is the discovery of a new business model that is distinct from ones found in an existing business. The third radical product innovation which is a completely new product that changes consumer habits and behaviors.
- The following slides will discuss how disruptive innovation affects markets and drives technological innovation.

How Disruptive Innovation Affects Markets

- This image is from the article *Dynamic Commercialization Strategies for Disruptive Technologies: Evidence from the Speech Recognition Industry* and it shows how disruptive innovation outperforms sustaining innovation over time.

Figure 2 (Color online) Sales per Employee Since Entry for Firms Adopting Sustaining vs. Disruptive Technologies



How Disruptive Innovation Drives Technological Innovation

- This image was taken from *Advancing Knowledge and the Knowledge Economy* and it shows how disruptive innovation drives technological innovation with regard to the advancement of the speed in computer technology.

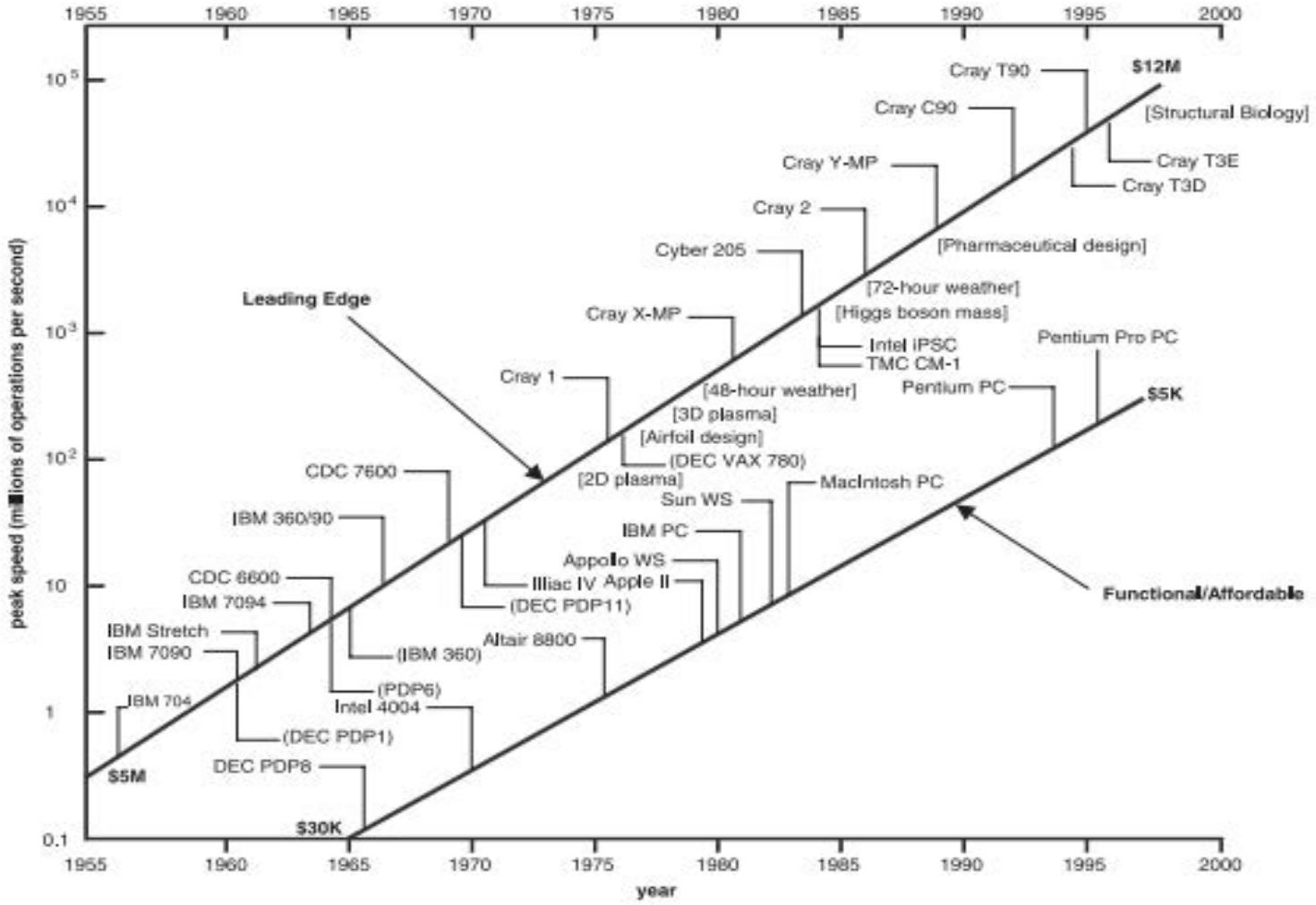


Figure 1

Conclusion

- From the previous slides it was shown how disruptive affects markets and drives technological innovation.
- The image showing both disruptive innovation and sustaining innovation clearly shows how disruptive innovation starts off slow but over time will eventually surpass sustaining innovation in terms of sales.
- The image showing the advancement of the speed of computer technology clearly shows how disruptive innovation drives technology as the graph showed how over time the speed of the computers increased.

DIFFUSION OF INNOVATION FROM THE DEFENSE INDUSTRY TO THE COMMERCIAL SECTOR

Cassie Zinecker

1570755

MECE 5397

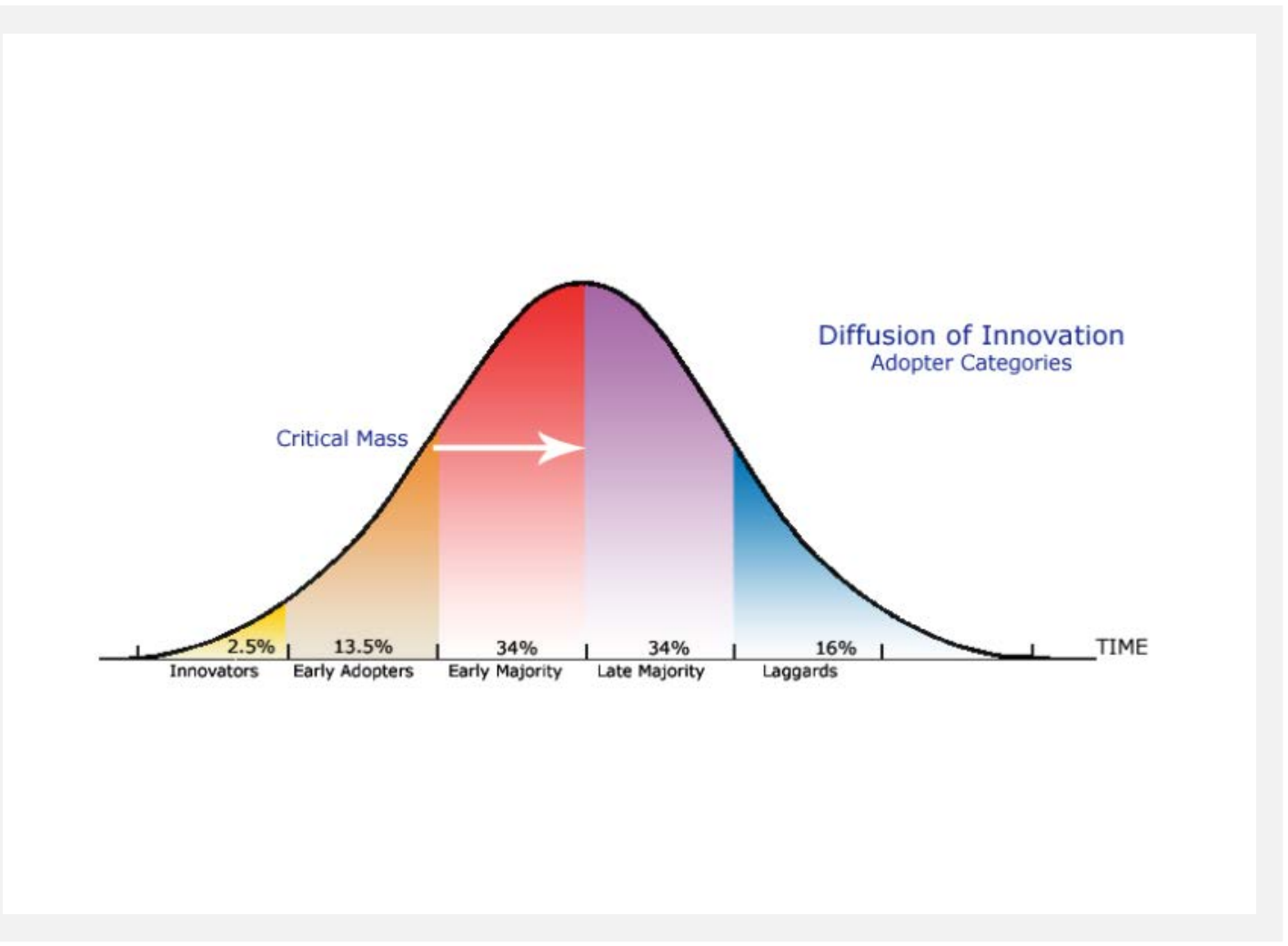
11/23/2020

OVERVIEW

- Innovations made by the defense industry are important to everyday life
- Technology diffused from military has a major impact on the modern world
  - This is not a new concept, there are examples from before 1900
  - Many modern innovations originate from WWII-era
- Diffusion of Innovation trend applies to transfer from military to commercial
- Some technology is developed with an intent to use in both industries

DIFFUSION OF INNOVATION

- Process of diffusion
- 5 adopter categories
- Critical mass: occurs as more and more people spread the word about an innovation



Kaminski, J. (Spring 2011).Diffusion of Innovation Theory *Canadian Journal of Nursing Informatics*, 6(2). Theory in Nursing Informatics Column.

MILITARY TECHNOLOGY USED IN CIVILIAN LIFE

- Canned food – 1809
  - Developed in France to keep soldiers fed
- Global Positioning System (GPS) – 1973
  - Created by NASA to track US submarines
- Dual-Use Technology
  - Technology that has a military application and a commercial application
  - Ex: Nuclear Power (1930s)

SUMMARY

Innovations can diffuse from the defense industry to everyday life.

The Diffusion of Innovation trend applies.

There are many examples of these innovations from throughout history.

Dual-Use technology are innovations that have a military function and a commercial function.