

A	B	C	D	E	F	G	H
Session #	Week #	Deck #	Date	Day	Topic	Faculty	TA Attending
1	1	1	8th Aug	Tue	Introduction to INV.ENT	AN	
2	1	2	9th Aug	Wed	Opportunity Identification	AN	Shubh Verma
			15th Aug	Holiday	Independence Day		
3	2	2	16th Aug	wed	Opportunity Identification	AN	Harshil
4	3	3	22nd Aug	Tue	Customer Value Proposition	AN	Sanya
5	3	3	23rd Aug	Wed	Customer Value Proposition	AN	Harshil
6	4	4	29th Aug	Tue	Business Model Canvas + Quiz	AN	Nishkarsh
7	4	4	30th Aug	Wed	Business Model Canvas	AN	Kritish
8	5	5	5th Sep	Tue	Strategy & Business Fundamentals	MR	Shubh
9	5	6	6th Sep	Wed	Introduction to Design & Innovation	PK	Kritish
10	6	7	12th Sep	Tue	Design Principles	PK	Sanya
11	6	7	13th Sep	Wed	Design Principles	PK	Nishkarsh
7-8							
13	9	8	26th Sep	Tue	Design Brief , Concept Generation, Idea Sketching	PK	
14	9	8	27th Sep	Wed	Design Brief , Concept Generation, Idea Sketching	PK	
15	10	9	3rd Oct	Tue	POC & Rapid Prototyping	PK	
16	10	9	4th Oct	Wed	POC & Rapid Prototyping	PK	
17	11	10	10th Oct	Tue	New Product Development - Theory	AN	
18	11	11	11th Oct	Wed	Marketing / Go to Market	AN	
19	12	11	17 Oct	Tue	Marketing / Go to Market	AN	
20	12	11	18th Oct	Wed	Marketing / Go to Market	AN	
			24th Oct		Holiday (Dussehra)		
20	13	12	25th Oct	Wed	Communication & Pitch Deck	AN	
21	14	13	31st Oct	Tue	Basics of Business Planning & Finance	MR	
22	14	13	1st Nov	Wed	Basics of Business Planning & Finance	MR	
23	15	13	7th Nov	Tue	Finance Doubt Solving	AN	
24	15	14	8th Nov	Wed	Briefing for Presentations, Bringing the Course toge	AN	

Ih301

ENT 101: Innovation & entrepreneurship 6 weeks overview

Week 1: Introduction to Innovation (6th Sept)

Week 2: Innovation Process: Design Thinking, Ideation, Creativity Techniques (12th Sept)

Week 3: Innovation Process: Design brief, Concept generation & Evaluation (13th Sept)

Week 4: AppliedAi: AI for Innovation (26th Sept)

Week 5: Proof-of-concept & Rapid Prototyping (27th Sept)

Week 6: Innovation in Practice: Real world case studies (PoC student workshops) (3rd Oct)

Week 7: Innovation in Practice: Real world case studies (4th Oct)

class: case studies, discussion, interaction

theory: reading material for quiz, exam

innovation is a way of life

expected outcome:

creative confidence

by-product: grade

boiling water



INDUSTRIAL REVOLUTION FOR KIDS

1 .1

Introduction to Innovation

- Definition of innovation
- The importance of innovation in entrepreneurship
- Industrial Revolution: Historical context of innovation
- Examples of successful innovations

1 .2

Innovation & Entrepreneurship:

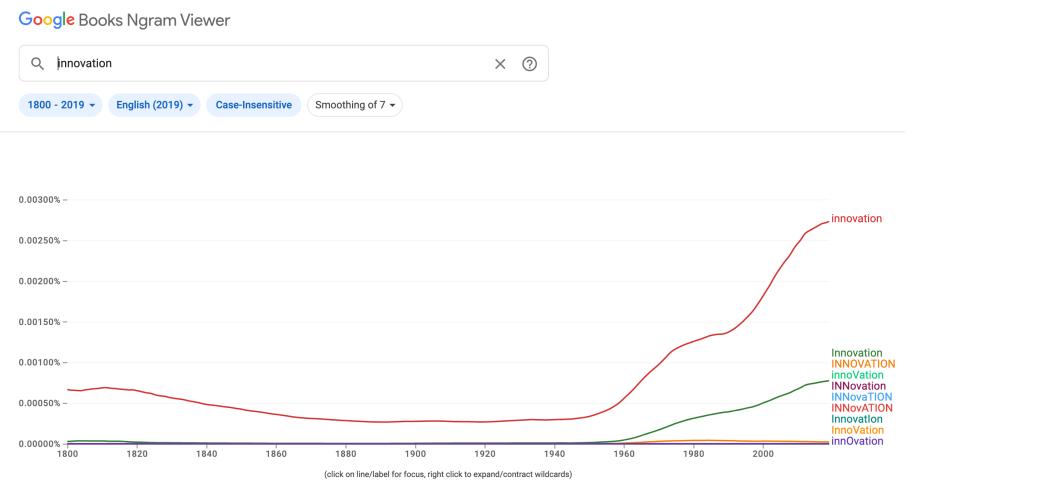
- The importance of innovation in entrepreneurship

1 .1

Innovation

- Definition of innovation

- Creativity
- Invention
- Novelty
- Originality
- Ingenuity
- Progress
- Improvement
- Modernization
- Advancement
- Breakthrough
- Development
- Change
- Transformation
- Revolution
- Disruption



Definition of Innovation:

"the implementation of a new or significantly improved

1. product (good or service)
2. process
3. a new marketing method
4. a new organizational method in business practices
5. workplace organization
6. external relations."

(OECD, 2005)

It is the ability to transform creative ideas into tangible outcomes that have value for individuals, businesses, and society at large.

Innovation vs Design vs invention vs Creativity

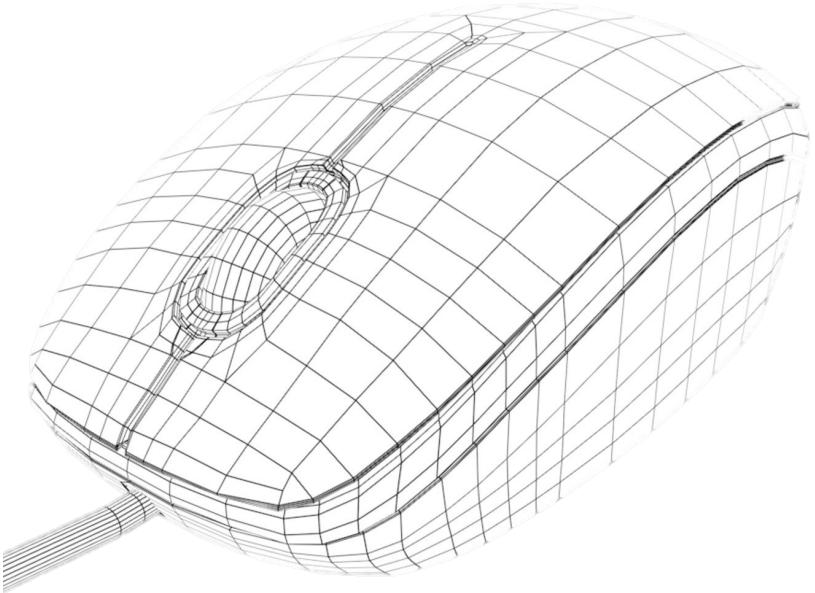
Design: tangible or intangible **Construct**

Creativity: **ability** to generate new and original ideas, insights, or solutions.

Invention: creation of new products, processes, or systems **that have not existed before.**

Innovation: **process of introducing new ideas, methods, products, or technologies that create value and lead to positive change.**

Design:

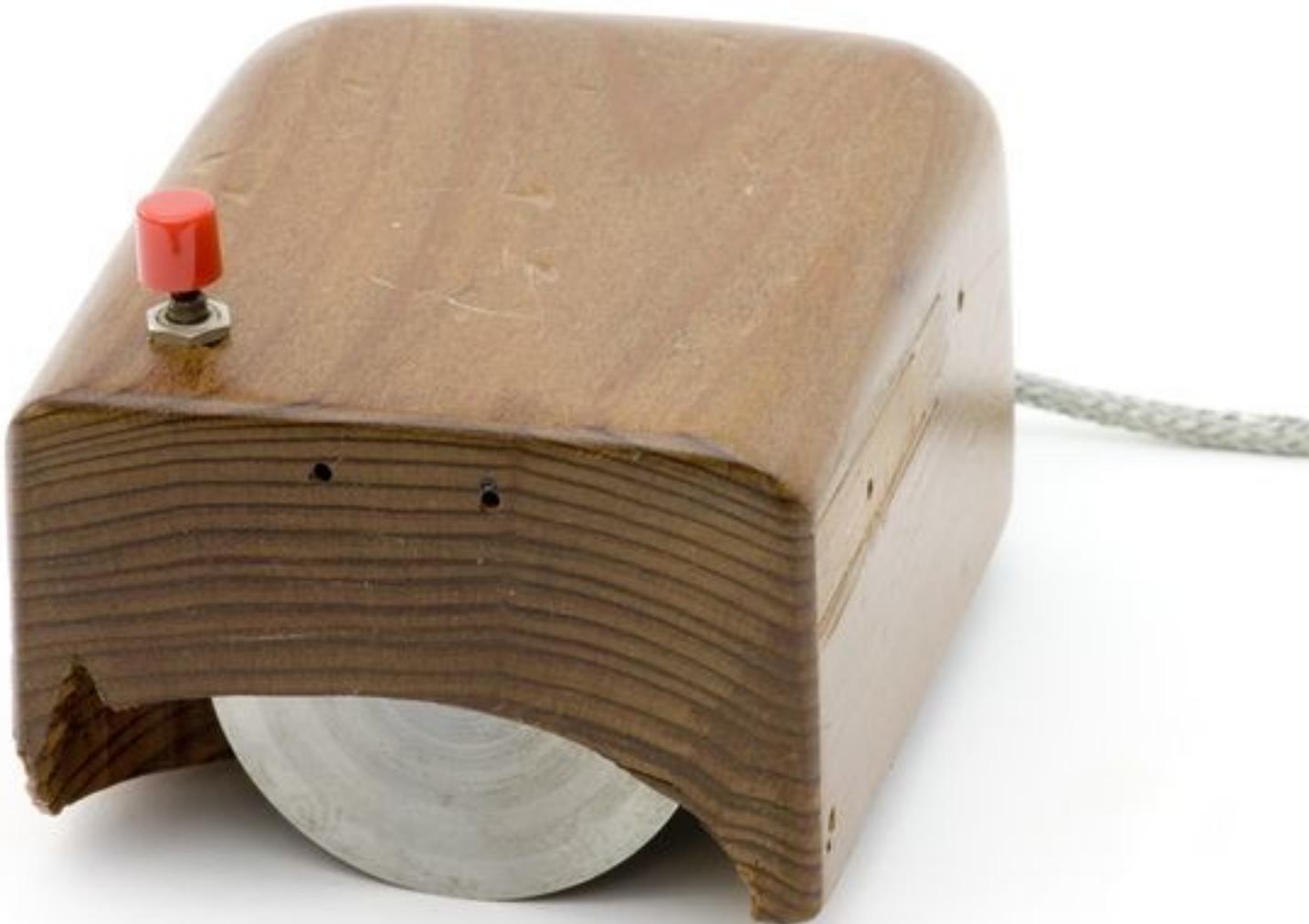


intangible



tangible

Invention



Innovation



Innovation



Types of Innovation

- Incremental vs. radical innovation
- Product vs. process innovation
- Business model innovation
- Social innovation

Types of Innovation:

Incremental & Radical Innovation:

Incremental innovation refers to small, incremental improvements made to an existing product or service. It is a gradual process that involves making small changes to a product or service, improving its performance or features.

Radical innovation refers to a complete overhaul of a product or service, resulting in a new offering that is significantly different from its predecessor. It often involves a breakthrough technology or a new business model that disrupts the market.

(Christensen, 1997)

Types of Innovation: Incremental

In each of these examples, the innovation is built upon an existing product, service, or process, and aims to make incremental improvements or additions to enhance its value or performance without fundamentally changing its core concept or functionality.

- **Introduction of a new variant** of an existing product, such as a new flavor of ice cream or a new color option for a smartphone.
- **Upgrades or improvements** to an existing software or application, such as adding new features or enhancing user experience.
- **Enhancements** to an existing manufacturing process to increase efficiency or reduce waste, such as optimizing a production line or implementing automation.
- **Improvements to a service** delivery process, such as streamlining customer service or enhancing online order tracking.
- **Incremental improvements** in a medical device, such as a new version of a prosthetic limb with improved functionality or comfort.

Types of Innovation: Radical

In each of these examples, the innovation is disruptive, transformative, and fundamentally changes the way an industry, market, or organization operates. It often requires a significant departure from existing norms, technologies, or business models, and has the potential to create entirely new opportunities, markets, and value propositions.

- Introduction of a completely new and disruptive technology or product that revolutionizes an industry, such as the invention of the smartphone or the development of electric vehicles.
- Transformation of an industry through a new business model, such as the rise of ride-sharing platforms that disrupted the traditional taxi industry.
- Development of a breakthrough medical treatment or therapy that revolutionizes the way a disease or condition is treated, such as the discovery of antibiotics or the invention of minimally invasive surgical techniques.
- Introduction of a new business process or system that fundamentally changes the way an organization operates, such as the implementation of a completely automated supply chain management system.
- Creation of a new market or customer segment through the identification of unmet needs or desires, and the development of innovative solutions to address them, such as the emergence of the gig economy.

real-world examples of radical innovation

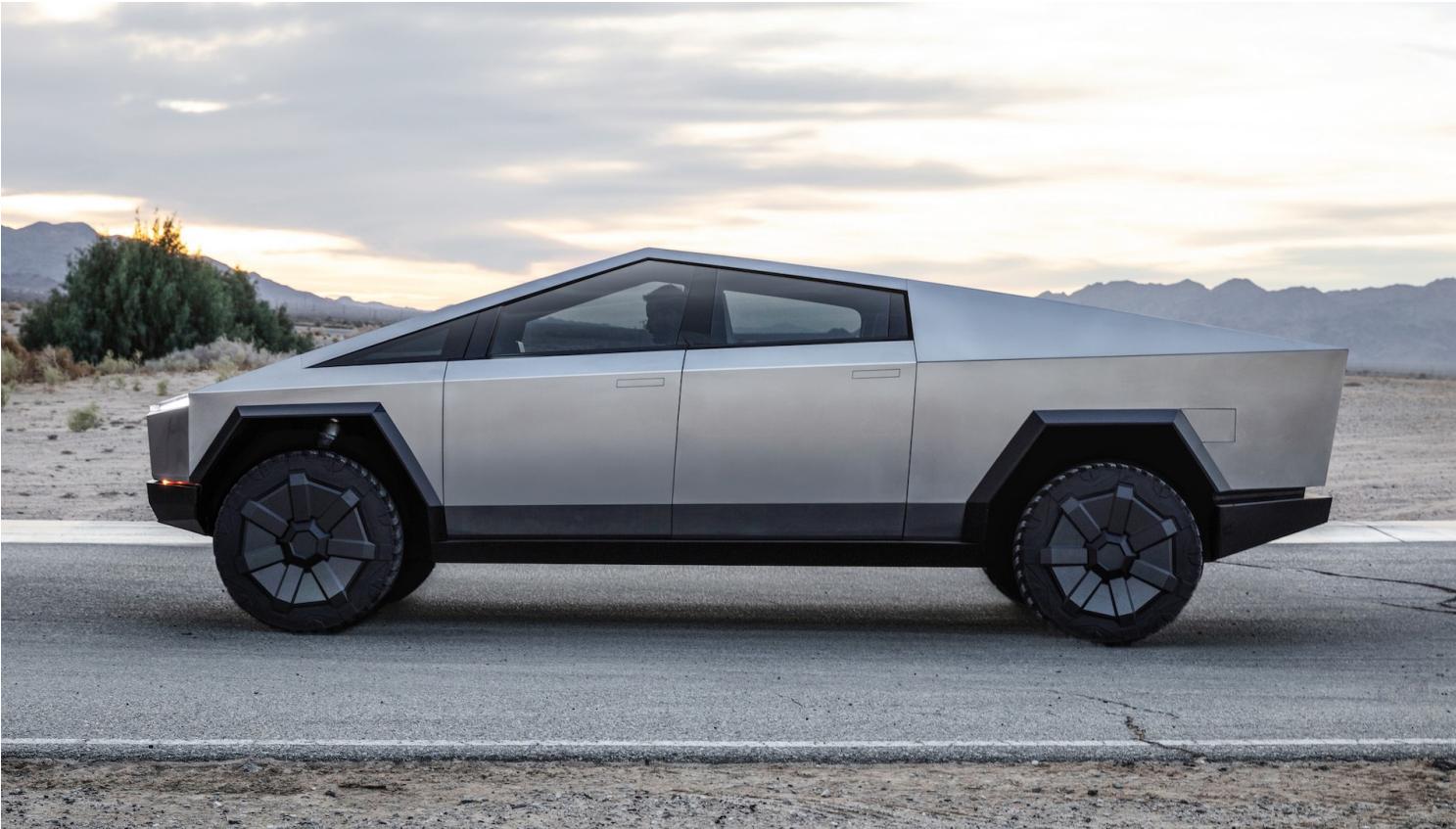
iPhone by Apple:

The introduction of the iPhone in 2007 revolutionized the telecommunications industry by combining a mobile phone, music player, and internet communication device into a single device. This radical innovation transformed the way people communicate, access information, and use technology, and disrupted the traditional mobile phone market.



real-world examples of radical innovation

Tesla electric vehicles: Tesla's electric vehicles have disrupted the automotive industry by introducing electric powertrains with long-range capabilities, advanced autonomous driving features, and a unique direct-to-consumer sales model. This radical innovation has challenged the dominance of traditional internal combustion engine vehicles and has accelerated the adoption of electric vehicles worldwide.



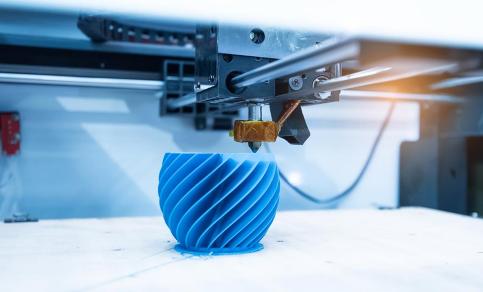
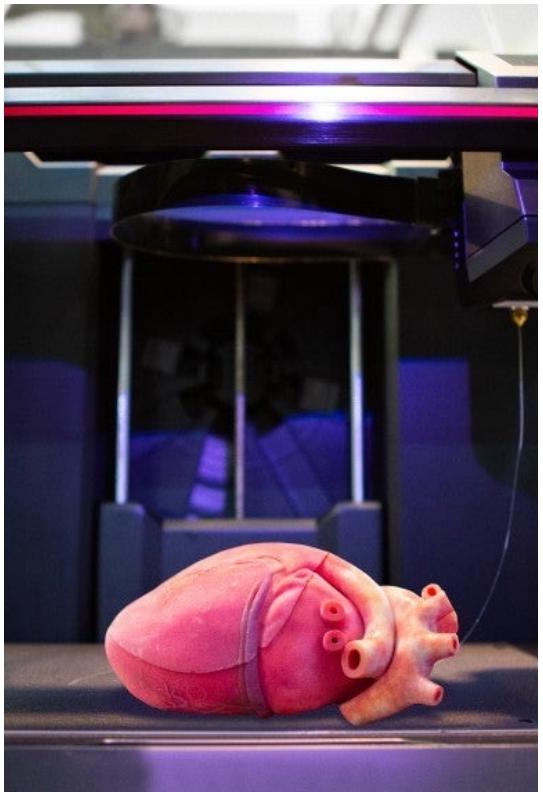
real-world examples of radical innovation

Airbnb: Airbnb disrupted the traditional hospitality industry by creating a platform that allows individuals to rent out their homes or spare rooms to travellers, challenging the traditional hotel industry. This radical innovation transformed the way people book accommodations and has created a new market for peer-to-peer lodging.



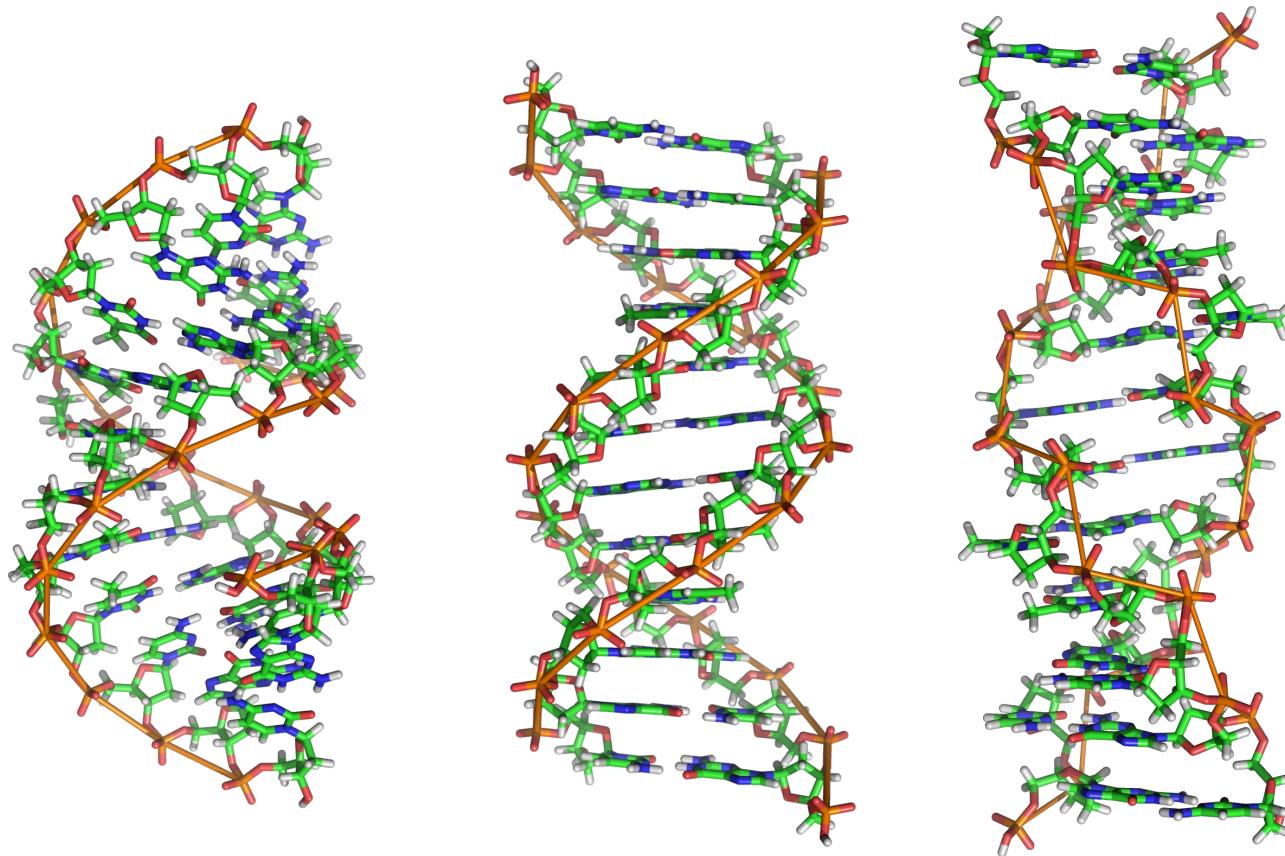
real-world examples of radical innovation

3D printing: 3D printing, also known as additive manufacturing, has revolutionized the manufacturing industry by enabling the production of complex and customized parts on demand, without the need for traditional tooling or molds. This radical innovation has disrupted traditional manufacturing processes and has the potential to transform industries such as aerospace, healthcare, and automotive.



real-world examples of radical innovation

CRISPR gene editing technology: CRISPR (Clustered Regularly Interspaced Short Palindromic Repeats) gene editing technology has the potential to revolutionize the field of biotechnology and healthcare by allowing scientists to precisely edit DNA sequences. This radical innovation has the potential to transform the treatment of genetic diseases, crop breeding, and other areas of life sciences.



types of innovation: Product Vs Process

Product vs. Process Innovation:

Product innovation refers to the development of new products or the improvement of existing ones. It involves introducing new features, functionalities, or designs to a product to meet changing customer needs.

Process innovation refers to the improvement of internal processes or operations. It involves developing new methods or technologies to streamline business processes, reduce costs, or improve efficiency.

what you do & how you do

(Tidd & Bessant, 2018)

Types Of Innovation: Product

Product Innovation:

Product innovation refers to the development of new products or the improvement of existing ones. It involves introducing new features, functionalities, or designs to a product to meet changing customer needs.

1.Tesla electric cars: Tesla is known for its innovative electric vehicles (EVs) that have disrupted the traditional automotive industry. Tesla's EVs feature cutting-edge technologies, such as long-range batteries, regenerative braking, autopilot capabilities, and over-the-air software updates, which have redefined the concept of modern transportation.



Types Of Innovation: Product

Product Innovation:

Product innovation refers to the development of new products or the improvement of existing ones. It involves introducing new features, functionalities, or designs to a product to meet changing customer needs.

1.DJI drones: DJI, a Chinese technology company, has been a pioneer in consumer and professional drones, introducing innovative features such as high-resolution cameras, obstacle avoidance systems, long flight times, and advanced flight controls. DJI's drones have transformed industries such as aerial photography, videography, agriculture, and inspection.



Types Of Innovation: Product

Product Innovation:

Product innovation refers to the development of new products or the improvement of existing ones. It involves introducing new features, functionalities, or designs to a product to meet changing customer needs.

Dyson vacuum cleaners: Dyson is known for its innovative vacuum cleaners that incorporate advanced technologies, such as cyclone suction technology, HEPA filters, and bagless designs. Dyson's products have disrupted the traditional vacuum cleaner market and set new standards for performance, convenience, and user experience.



types of innovation: Process

Process Innovation:

Process innovation refers to the improvement of internal processes or operations. It involves developing new methods or technologies to streamline business processes, reduce costs, or improve efficiency.

These are just a few examples of process innovations from various industries. Process innovation involves improving the way work is done, optimizing operational processes, and finding more efficient and effective ways to deliver products or services. Process innovations can result in cost savings, improved quality, increased speed, and enhanced customer satisfaction, leading to competitive advantages for companies in today's rapidly changing business landscape.

types of innovation: Process

1. Mobile payment systems: The introduction of mobile payment systems, such as Apple Pay, Google Wallet, and Samsung Pay, has revolutionized the payment industry by offering innovative and convenient ways for consumers to make transactions using their smartphones. These systems have streamlined the payment process, eliminated the need for physical cards or cash, and enhanced the security of transactions through features like biometric authentication.



types of innovation: Process

1.Telemessaging and remote work: The COVID-19 pandemic has accelerated the adoption of remote work and telecommuting, which are process innovations that have transformed traditional work arrangements. Companies have implemented innovative technologies, such as video conferencing, cloud-based collaboration tools, and virtual team management systems, to enable remote work and maintain business continuity.



types of innovation: Process

1. Amazon Fulfilment Centre automation: Amazon, the e-commerce giant, has been at the forefront of process innovation in the logistics and supply chain management space. Amazon has invested heavily in automation technologies, such as robots, conveyor belts, and advanced data analytics, to streamline its order fulfilment processes, reduce costs, and improve delivery speed.



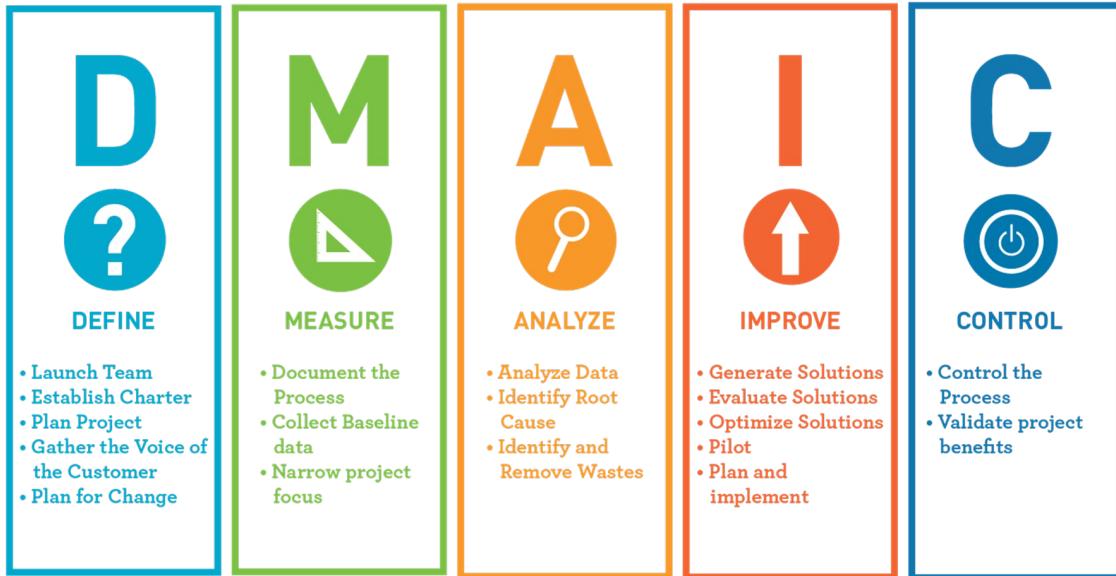
types of innovation: Process

1. Virtual reality (VR) and augmented reality (AR) in design and prototyping: VR and AR technologies have been increasingly used in product design and prototyping, allowing companies to create virtual 3D models and simulations for testing, validation, and visualization purposes. These technologies have shortened product development cycles, reduced costs, and improved the accuracy of design iterations.



types of innovation: Process

1. Six Sigma: Six Sigma is a process improvement methodology that focuses on reducing defects and improving the quality of products or services. It involves using statistical tools and data-driven decision-making to identify and eliminate process variations and improve overall process performance. Six Sigma has been successfully implemented by companies like General Electric, Motorola, and Ford, resulting in significant process improvements and cost savings.



6 σ

The term "six sigma" refers to a statistical measure of quality that is six standard deviations away from the mean. In other words, it represents a level of quality that is extremely high and corresponds to a defect rate of only 3.4 parts per million (PPM). This is achieved through a rigorous focus on identifying and reducing variation in processes and products, which is a key element of the Six Sigma methodology.

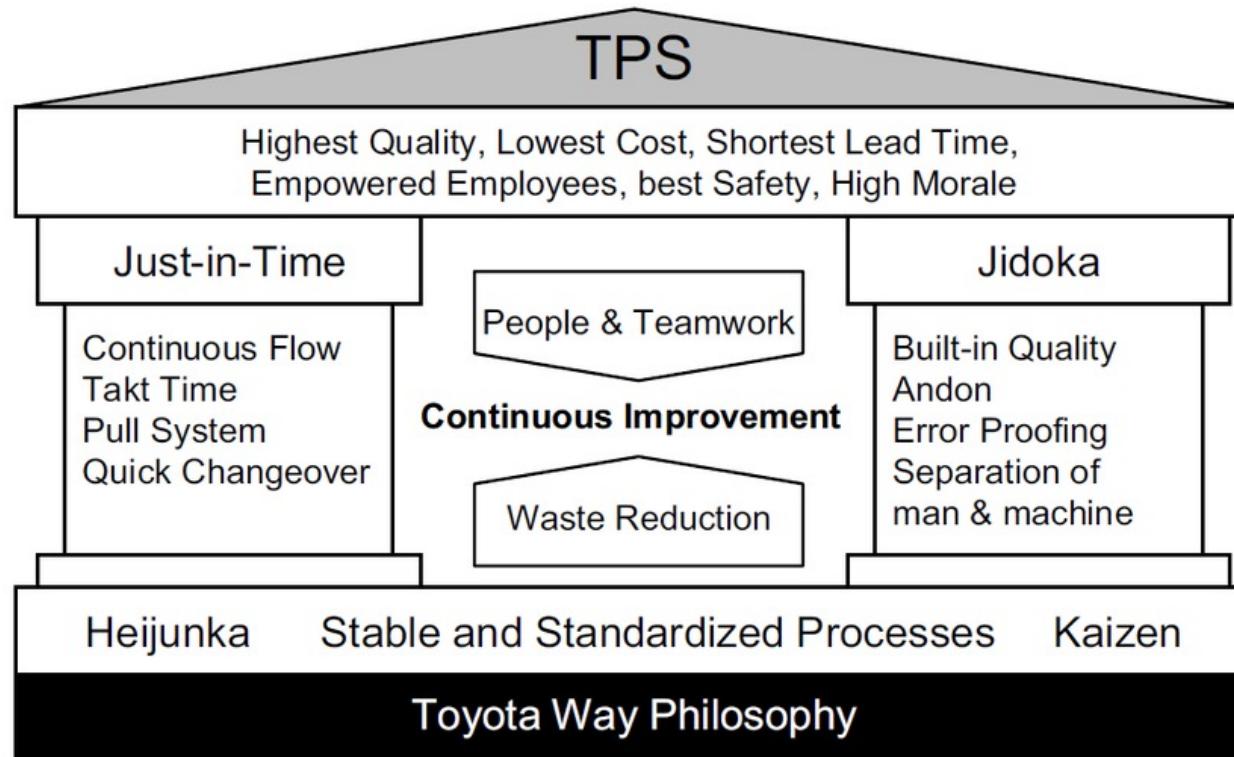
DMAIC (Define, Measure, Analyze, Improve, Control)
DMADV (Define, Measure, Analyze, Design, Verify)

types of innovation: Process

Process Innovation:

Process innovation refers to the improvement of internal processes or operations. It involves developing new methods or technologies to streamline business processes, reduce costs, or improve efficiency.

Toyota Production System (TPS): TPS, also known as Lean Manufacturing, is a process innovation developed by Toyota that focuses on improving the efficiency, quality, and flexibility of production processes. TPS is based on principles such as just-in-time (JIT) production, continuous improvement (kaizen), and waste reduction, and has been widely adopted by manufacturing companies around the world to improve their production processes.



types of innovation:

Business Model Innovation:

Business model innovation involves the creation of a new business model or the adaptation of an existing one. It involves rethinking the way a business creates, delivers, and captures value. A successful business model innovation can create new markets, disrupt existing ones, or create new revenue streams for the business. Examples of business model innovation include the subscription-based model adopted by Netflix and the freemium model adopted by many mobile apps. (Osterwalder & Pigneur, 2010)

Business model innovation involves creating new ways of creating, delivering, and capturing value in the market. Successful business model innovation can result in disruptive changes in the industry, creating new markets, and driving business growth and success.

sustain smart

types of innovation: Business Model

1. Netflix: Netflix is a prime example of business model innovation in the entertainment industry. Originally starting as a DVD rental-by-mail service, Netflix later shifted its business model to a subscription-based streaming service, disrupting the traditional video rental market. This innovative business model allowed Netflix to offer on-demand streaming of TV shows and movies, leading to its rapid growth and domination in the streaming industry.



types of innovation: Business Model

1.Uber: Uber is a well-known example of business model innovation in the transportation industry. Uber's business model disrupts the traditional taxi industry by providing a digital platform that connects riders with drivers using their own cars. This innovative business model enabled Uber to offer on-demand, convenient, and affordable transportation services through a smartphone app, transforming the way people hail and pay for rides.



types of innovation: Business Model

1. Amazon Web Services (AWS): Amazon's cloud computing service, AWS, is a prime example of business model innovation in the technology industry. AWS provides scalable and cost-effective cloud computing services to businesses, allowing them to rent computing power, storage, and other IT resources on-demand. This innovative business model has disrupted the traditional model of building and maintaining in-house IT infrastructure, enabling businesses to scale and innovate more rapidly.



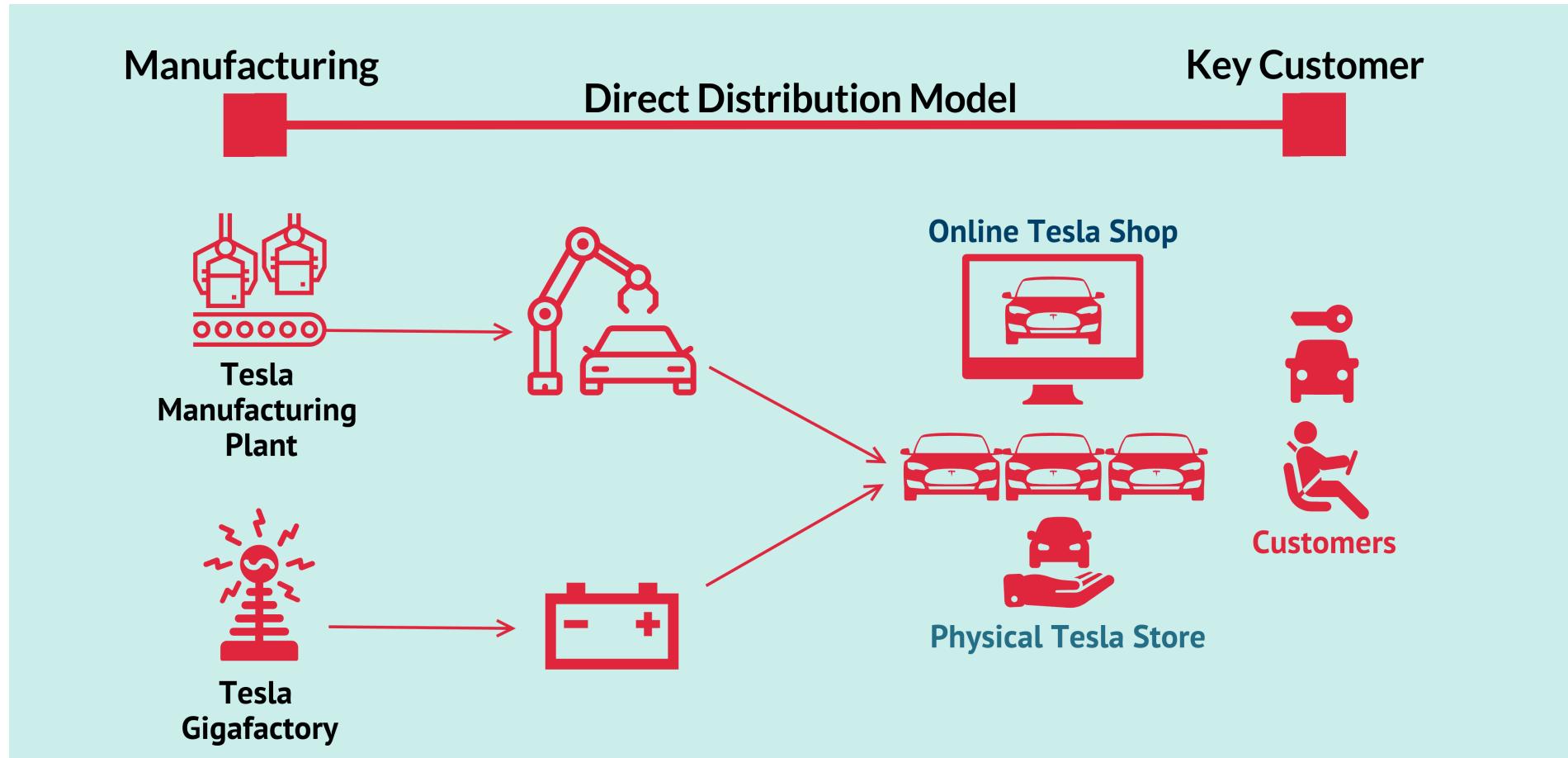
types of innovation: Business Model

1.Dollar Shave Club: Dollar Shave Club is a direct-to-consumer (DTC) subscription-based razor company that disrupted the traditional razor market. By offering a subscription-based business model where customers receive razors and grooming products on a regular basis, Dollar Shave Club disrupted the traditional razor market dominated by established brands. This innovative business model allowed them to offer affordable and convenient grooming products directly to consumers.



types of innovation: Business Model

1.Tesla: Tesla, the electric vehicle (EV) manufacturer, has innovated the traditional automotive business model in several ways. They have adopted a direct-to-consumer sales model, bypassing traditional car dealerships, and focused on building a network of fast-charging stations to address the issue of electric vehicle range anxiety. Tesla has also implemented a unique business model of offering over-the-air software updates to improve and enhance the features of their vehicles, creating ongoing revenue streams and customer loyalty.



types of innovation: Social Innovation

Social Innovation:

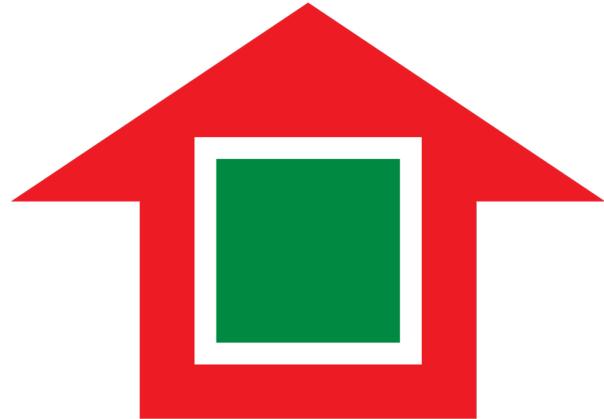
Social innovation refers to the development of new solutions to social and environmental challenges. It involves creating new products, services, or business models that address social needs, such as poverty, inequality, and environmental degradation. Social innovation can come from a range of sources, including businesses, non-profit organizations, and social enterprises. Examples of social innovation include microfinance, renewable energy, and affordable housing initiatives. (Murray et al., 2010)

Social innovation refers to the development of new ideas, solutions, or approaches that address social, cultural, or environmental challenges and create positive social impact. Here are some real-world examples of social innovation

empathy

types of innovation: Social Innovation

1.Grameen Bank: Grameen Bank, founded by Nobel Peace Prize winner Muhammad Yunus, is a prime example of social innovation. It is a microfinance institution that provides small loans, also known as microcredit, to poor individuals, especially women, in rural areas of Bangladesh. Grameen Bank's innovative approach to providing financial services to the underserved and empowering women has had a significant social impact, lifting millions of people out of poverty and promoting social inclusion.



Grameen Bank



types of innovation: Social Innovation

1.TOMS Shoes: TOMS Shoes is a footwear company that has adopted a unique social innovation business model. For every pair of shoes sold, TOMS donates a pair of shoes to a child in need. This "One for One" model has created a social impact by addressing the issue of footwear scarcity in impoverished communities and improving the health and well-being of children.



types of innovation: Social Innovation

1.Barefoot College: Barefoot College, located in India, is a unique social innovation organization that focuses on empowering rural communities through education and training. They provide hands-on training to rural women, particularly those from marginalized communities, in skills such as solar electrification, healthcare, and water management. This social innovation approach has empowered women, improved access to basic services, and enhanced the overall well-being of rural communities.



barefoot college
INTERNATIONAL

types of innovation: Social Innovation

Khan Academy: Khan Academy is an online educational platform that provides free educational resources and tools to learners worldwide. This social innovation initiative has disrupted traditional educational models, making quality education accessible to millions of people, particularly in underserved communities, and promoting lifelong learning.



types of innovation: Social Innovation: India!

Self-Employed Women's Association (SEWA): SEWA is a trade union and social enterprise that focuses on empowering informal sector workers, particularly women, through organizing, advocacy, and access to financial and social services. SEWA has been successful in empowering millions of women in India's informal economy by providing them with access to markets, credit, and social protection, thereby enhancing their economic and social well-being.



types of innovation: Social Innovation: India!

Akshaya Patra: Akshaya Patra is a non-profit organization that runs one of the world's largest school meal programs, providing nutritious meals to millions of school children in India. Their innovative approach of using technology and centralized kitchens to provide cost-effective and hygienic meals has had a significant impact on improving child nutrition, school attendance, and retention rates.



types of innovation: Social Innovation: India!

1.Aravind Eye Care System: Aravind Eye Care System is a social enterprise that provides high-quality, affordable eye care services to underserved populations in India. Through its innovative business model that combines cross-subsidization and high-volume, high-quality services, Aravind has been able to provide eye care services to millions of people, including those from economically disadvantaged communities, and has played a crucial role in addressing the issue of preventable blindness in India.



types of innovation: Social Innovation: India!

1.Pratham Education Foundation: Pratham Education Foundation is a non-governmental organization that focuses on providing quality education to underprivileged children in India. Pratham's innovative approach of using low-cost, scalable, and technology-driven interventions, such as the "Read India" campaign, has significantly improved basic literacy and numeracy skills among millions of children, particularly in rural and urban slum areas.



types of innovation: Social Innovation: India!

1.SafetiPin: SafetiPin is a mobile app that crowdsources information about safety in public spaces, particularly for women and marginalized communities. The app allows users to rate and share information about the safety of various locations, thus creating a database of safety information that can be used by individuals, communities, and policymakers to improve safety measures and address issues related to gender-based violence and harassment.

