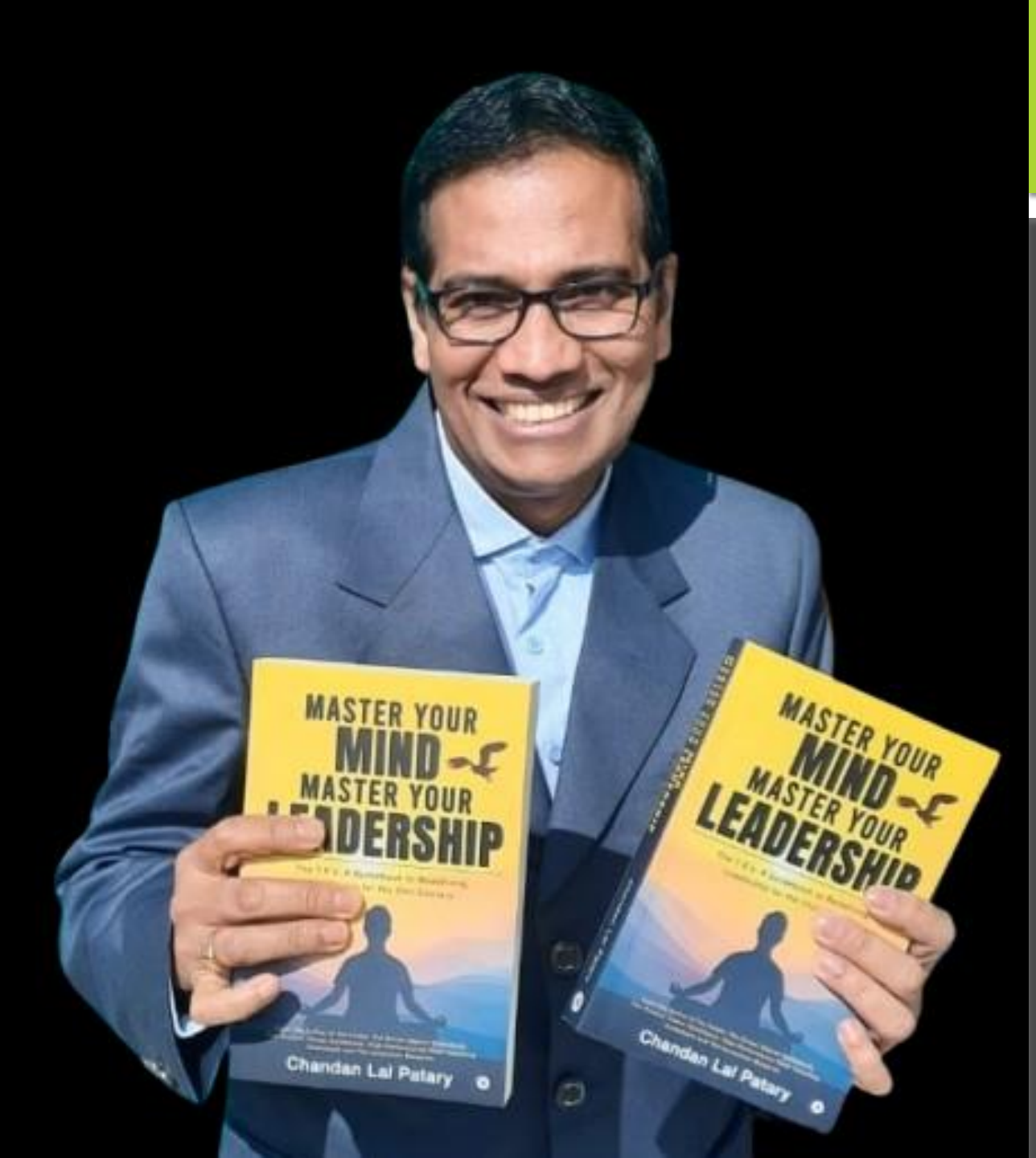
Innovation Lifecycle: How Ideas Become Market-Ready Solutions

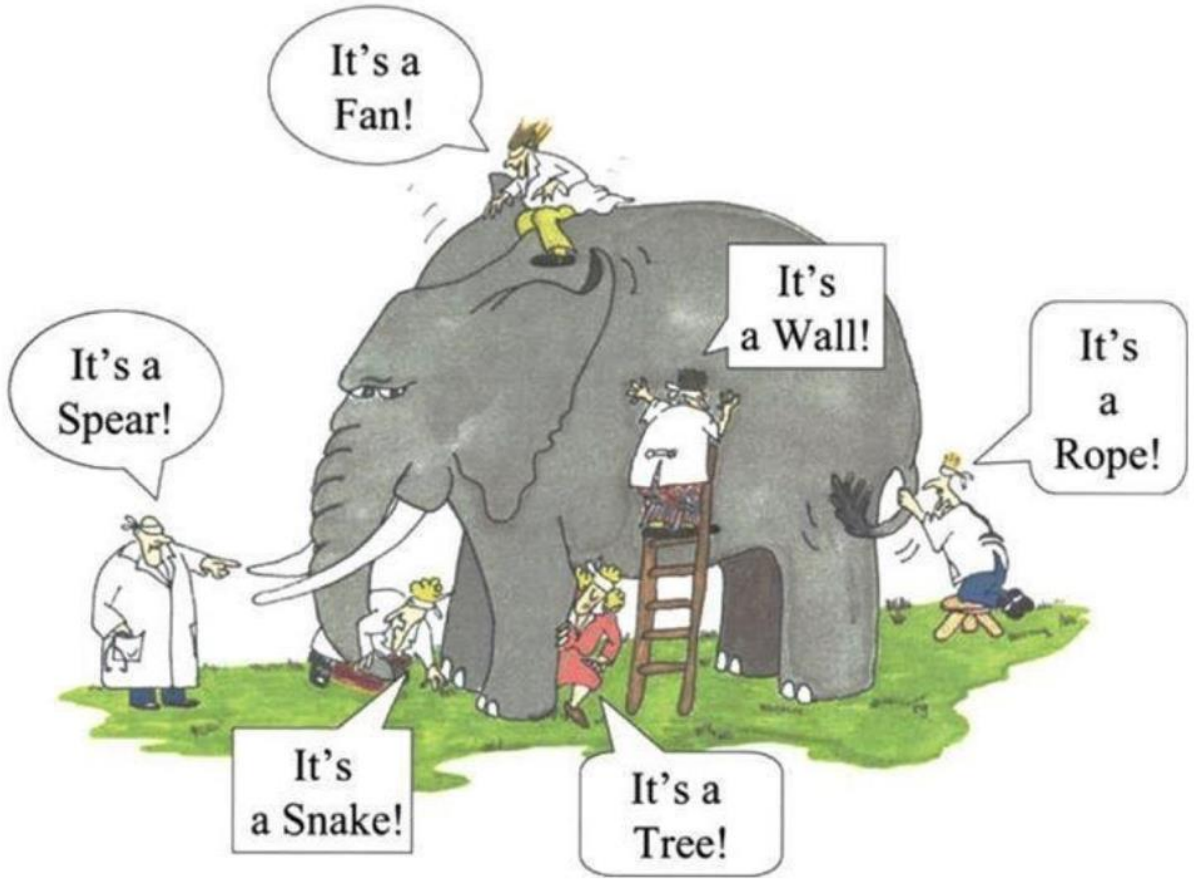


Enterprise Business Transformation Coach at H&M

GE Healthcare

Honeywell

ABB



I/We solve complex problem

• Retail (H&M)- 2 yr. +	• Consumer Electronics (Samsung India), 1 yr.	• Oil and Gas (Shell India) - 1.9 Yrs.
• Banking software (Société Generele)– 2.9 yrs.	• Industrial Automation & Power Automation Software - (ABB, India), 6.3 Yrs.	• Aerospace Software, (Honeywell, Bangalore), 4 yrs.
• Building Automation Management System (Honeywell)- 1.5 yrs.	• HealthCare System (Kshema Tech- GE Medical- 3.4 yrs.	• IT-Training, Entrepreneurship, Start-up (System Domain) - 1.3 yrs.

For the past 25 years, I've been diving deep into these labs, exploring, experimenting, and uncovering insights that might just change the way we think about Enterprise Business Transformation.

Curious about what I've discovered?


MASTER YOUR MIND, MASTER YOUR LEADERSHIP
Chandan Lal Patary
THE PRODUCT OWNER GUIDEBOOK
A PRAGMATIC REFERENCE MANUAL FOR MATURING PRODUCT COACHING
CHANDAN LAL PATARY
THE INNOVATION BLUEPRINT
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BUSINESS METAMORPHOSIS
50 Tools to Coach Your Way to Success
CHANDAN LAL PATARY
THE AGILIST'S GUIDEBOOK
Chandan Lal Patary
101 ENTERPRISE BUSINESS TRANFORMATION CASE STUDIES
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THE SCRUM MASTER GUIDEBOOK
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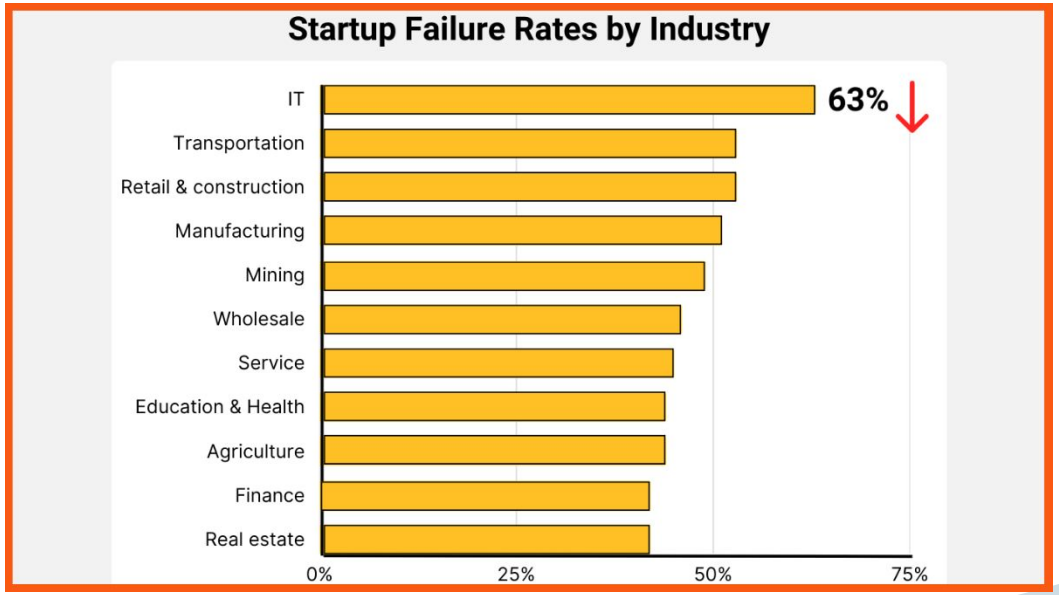
Transformation Guidebooks

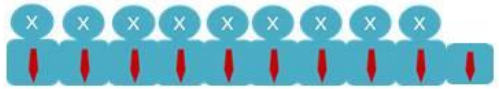
My Journey


More than 90% startup
in India fail in
their first 5 years
Source: IBM Study

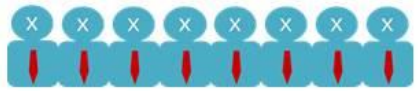

Startup Failure Rates by Industry
IT
Transportation
Retail & construction
Manufacturing
Mining
Wholesale
Service
Education & Health
Agriculture
Finance
Real estate
63%
0%
25%
50%
75%

FAILURE RATES OF STARTUPS

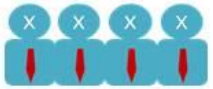
95% FALL SHORT OF MEETING PROJECTIONS



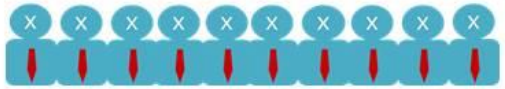
80% FAIL TO SEE PROJECTED RETURN ON INVESTMENT



40% LIQUIDATE AND LOSE MOST OR ALL INVESTMENT

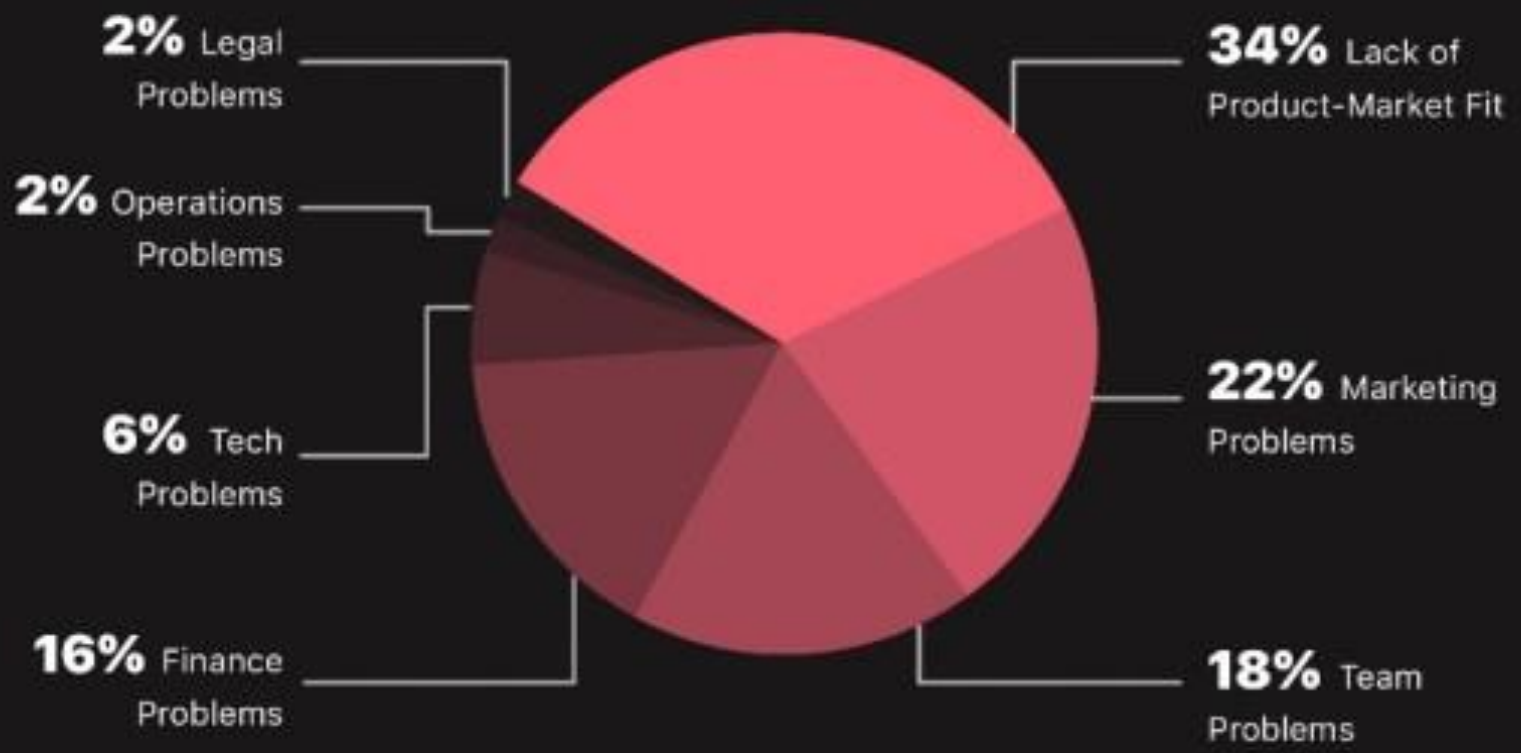


99% OF REASON FOR FAILURE IS LACK OF PLANNING & EXPERIENCE



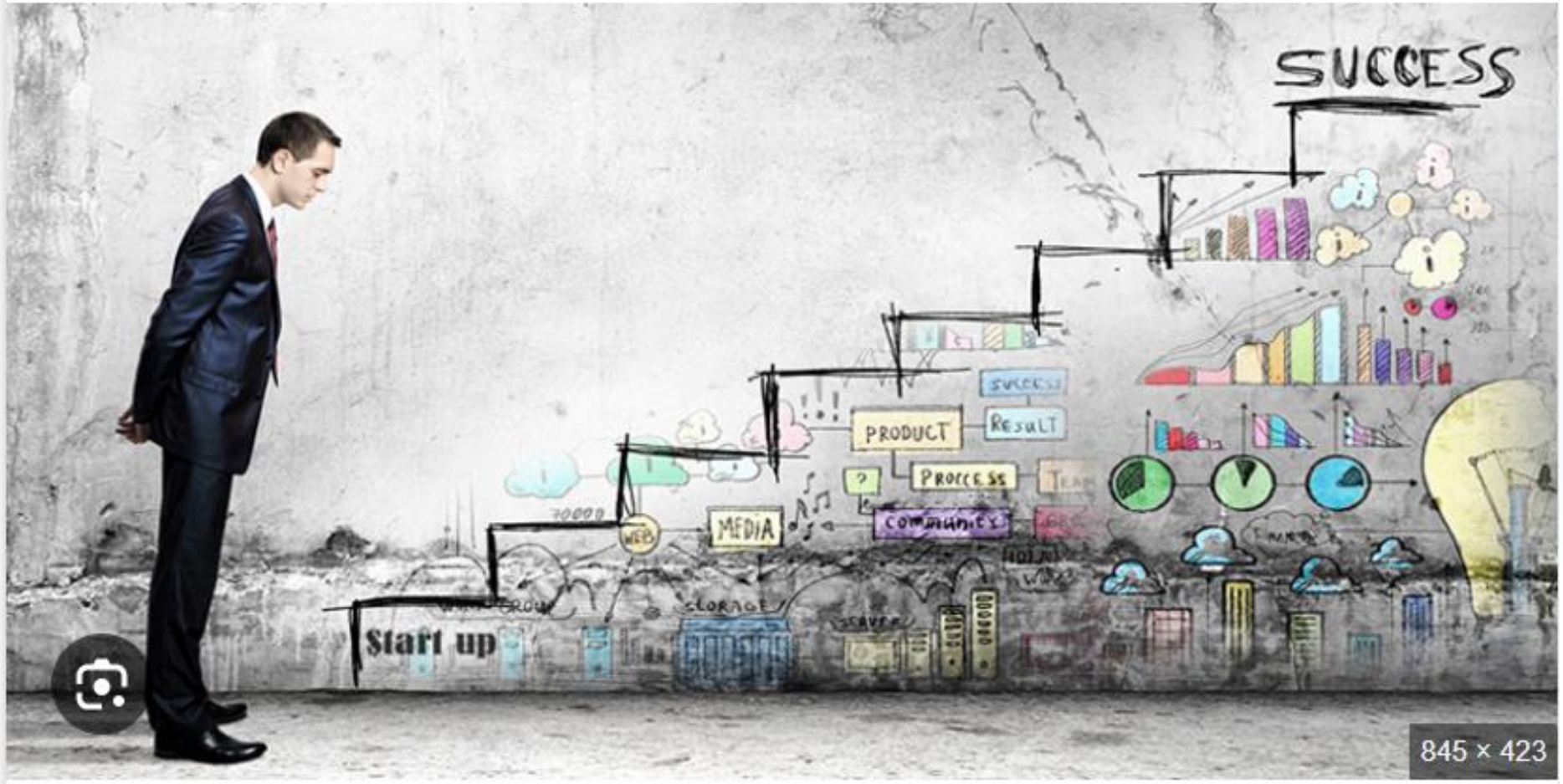
Data from various sources including Harvard Business School, University of Tennessee Research, StatisticBrain.com, and others.

Common Reasons For Startup Failure



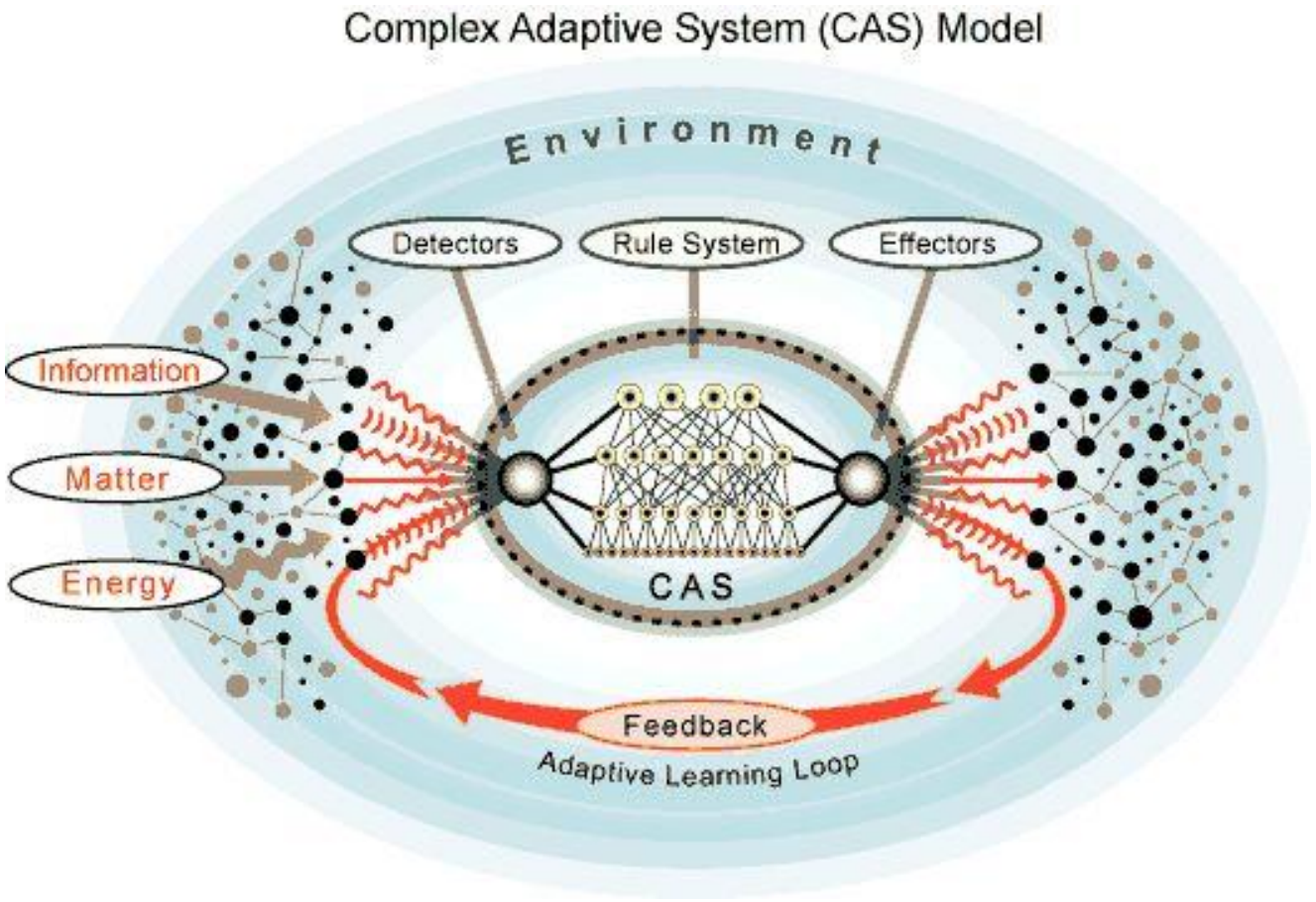
Information from 80+ failed startup interviews we've carried out.

Sunday Guardian



Start-ups in India failing due to lack of innovation - The Sunday Guardian Live

Visit



Complex Adaptive System

Top 10 skills on the rise

1. Creative thinking
2. Analytical thinking
3. Technological literacy
4. Curiosity and lifelong learning
5. Resilience, flexibility and agility
6. Systems thinking
7. AI and big data
8. Motivation and self-awareness
9. Talent management
10. Service orientation and customer service

Type of skill

Cognitive skills | Self-efficacy | Management skills | Technology skills | Working with others | Engagement skills

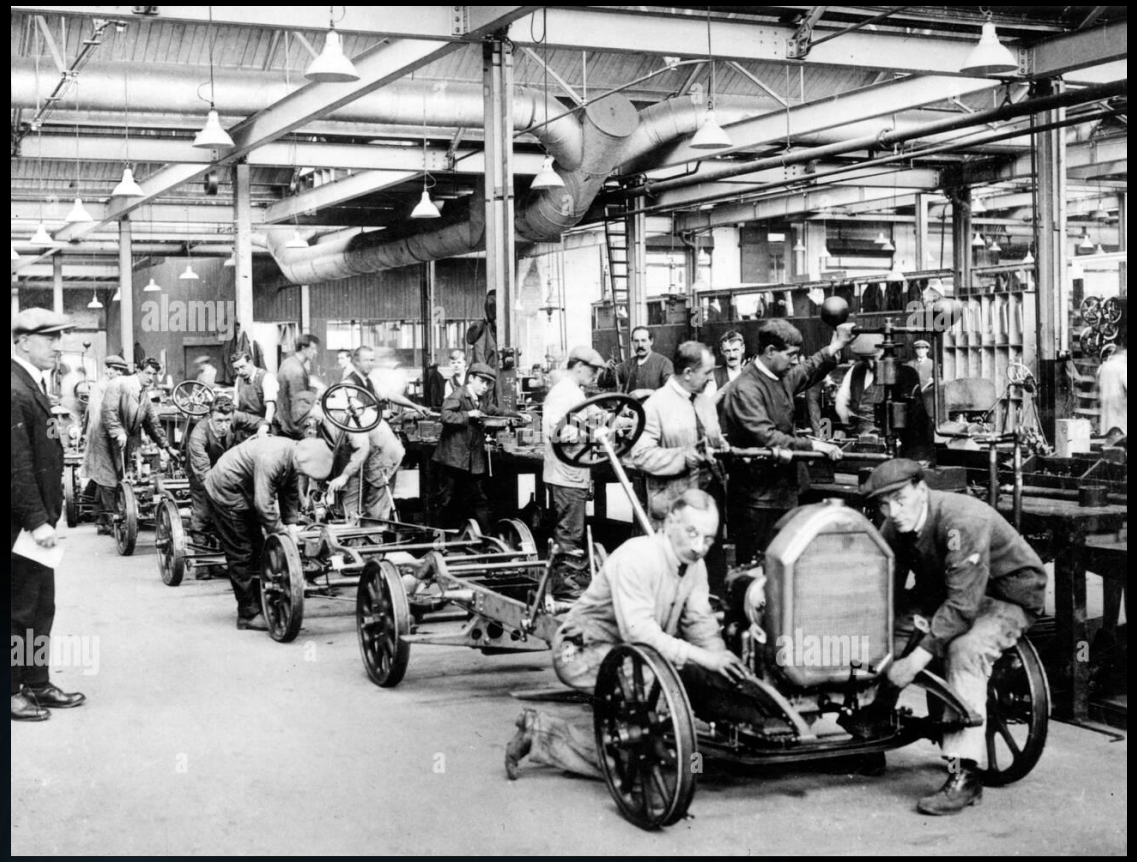
Source
World Economic Forum, Future of Jobs Report 2023.

Note
The skills judged to be increasing in importance most rapidly between 2023 and 2027

Next time you see a “spark” of an idea, don’t ignore it

- One day, while striking rocks to make tools, a spark flew out, and a small fire ignited in dry grass nearby.
  - **Observation Leads to Discovery**
  - Curiosity Drives Progress
  - Experimentation Fuels Innovation

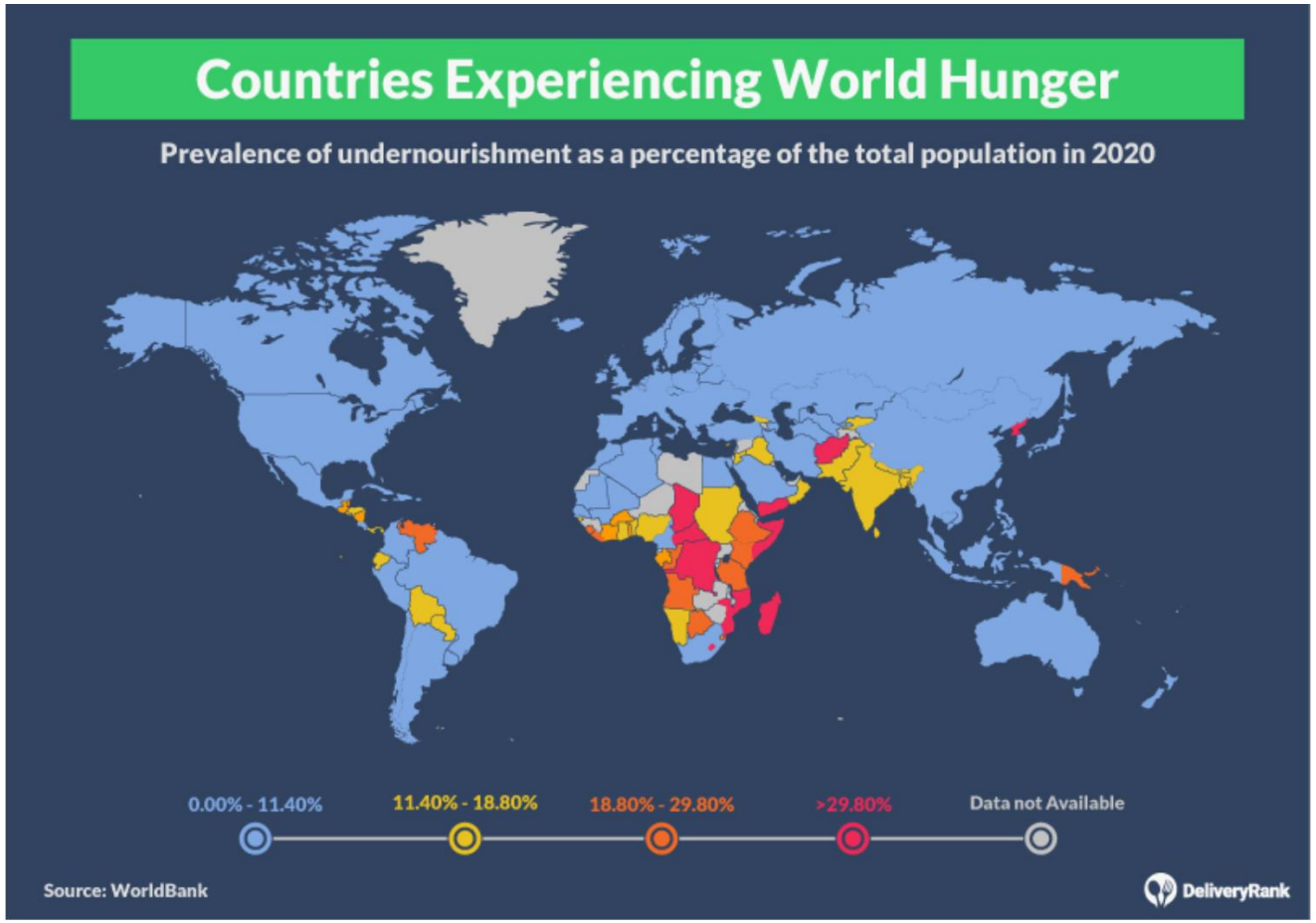
This story reminds us that even the smallest sparks of curiosity can lead to the greatest innovations.



What happens when innovation stops?
The answer might be extinction—sooner than we think.
Are we ready to embrace change before it's too late?

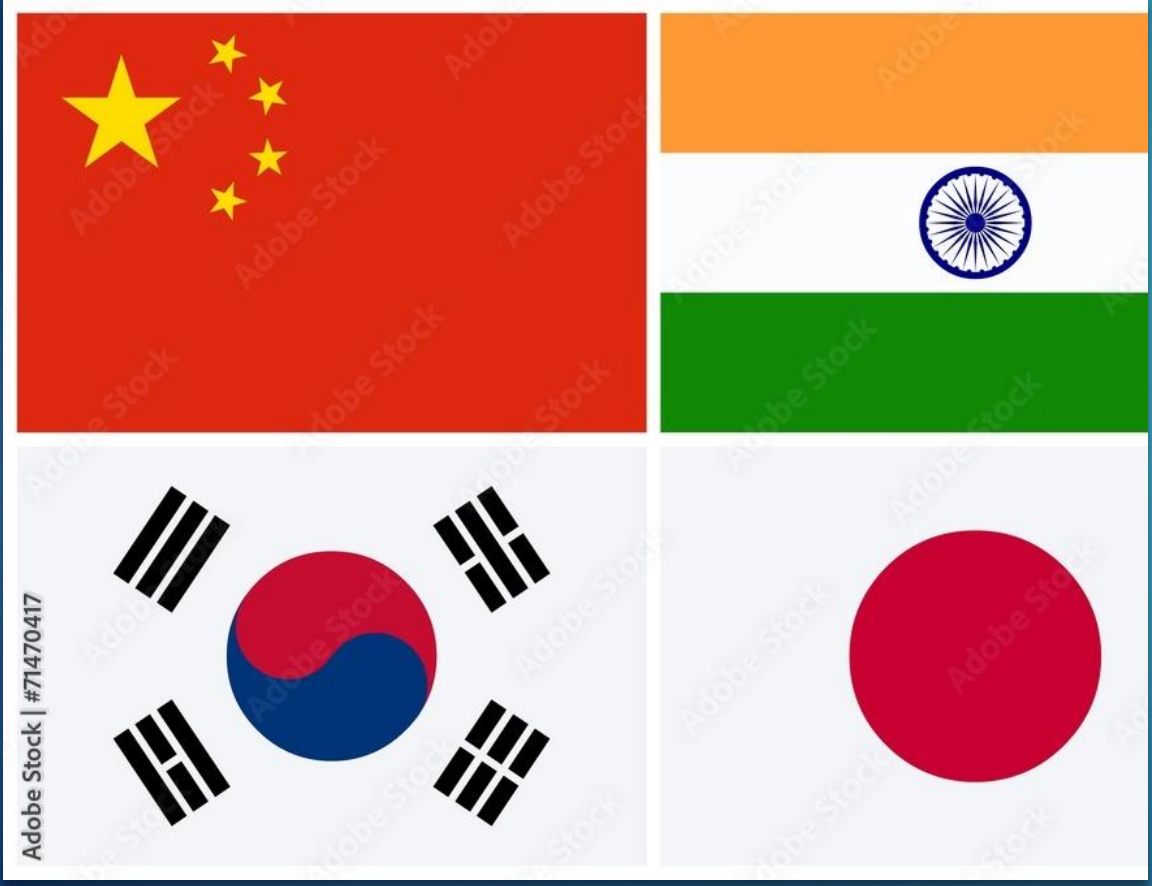
How can I contribute?

- **"To eradicate hunger, we need to reimagine the way we feed the world. It requires innovative thinking."** – José Graziano da Silva, former Director-General of the FAO



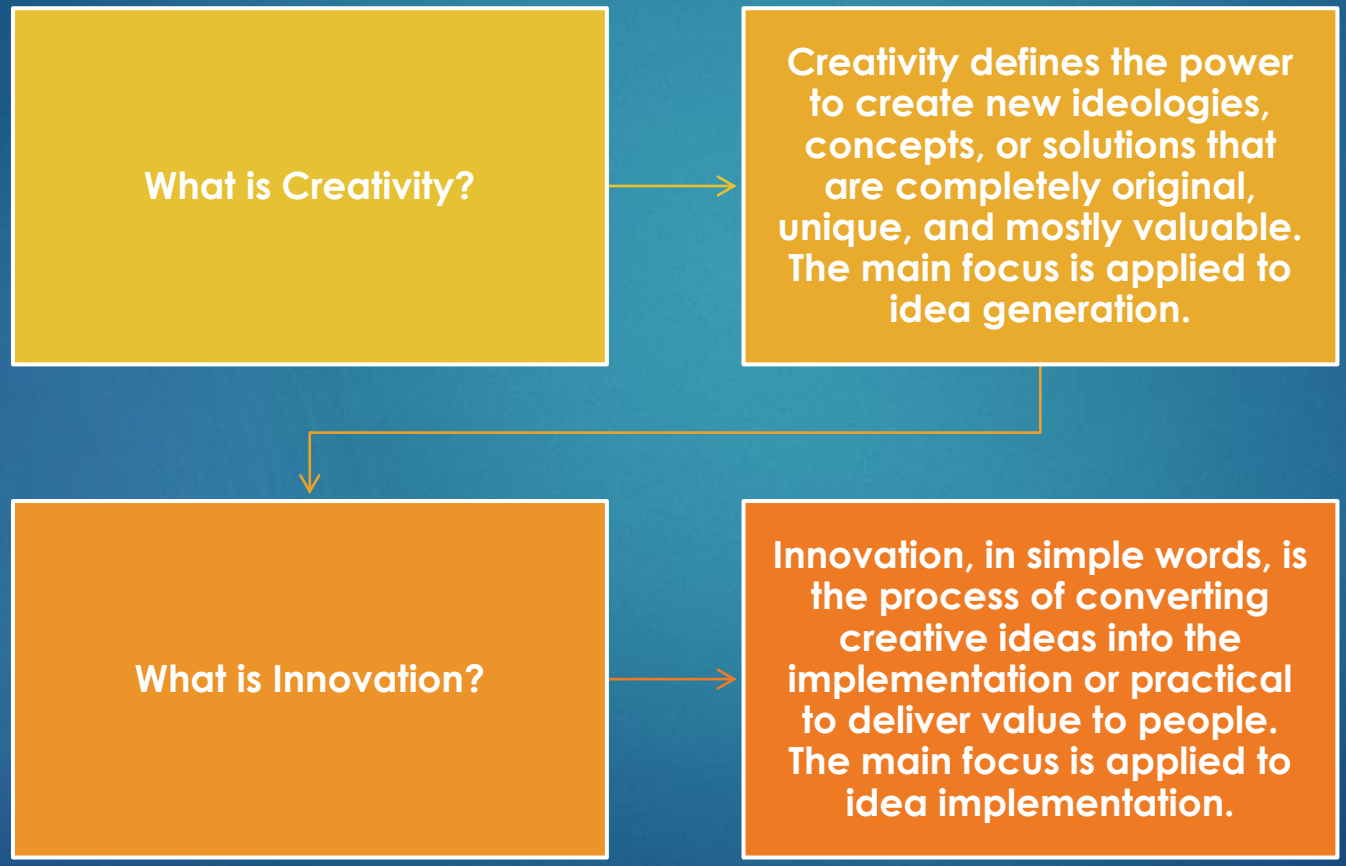
Hunger has an impact on every nation across the world.
Even in developed countries, hunger is an issue, with many families unable to afford enough food.

These nations play pivotal roles in the global economy, contributing significantly to international trade, technology, and cultural exchange.



- As of the latest available data, the top Asian countries by Gross Domestic Product (GDP) are:
  - China: With a GDP of approximately $17.7 trillion, China stands as the largest economy in Asia and the second-largest globally.
  - Japan: Japan's GDP is around $4.2 trillion, making it the second-largest economy in Asia and the third-largest worldwide.
  - India: India holds the third position in Asia with a GDP of about $3.9 trillion, ranking fifth globally.
  - South Korea: South Korea's GDP is approximately $1.87 trillion, placing it fourth in Asia and tenth globally.
  - Indonesia: With a GDP of around $1.2 trillion, Indonesia ranks fifth in Asia and is among the top 20 economies worldwide.

Creativity & Innovation?



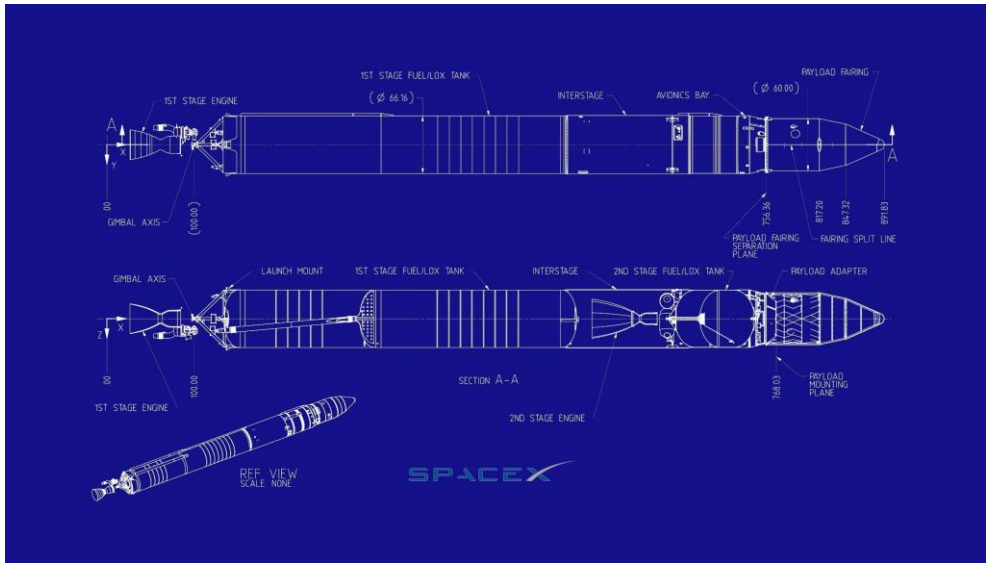
Innovation Development: The journey from idea generation to a viable product, service, or solution.

A structured process ensures concepts are transformed into impactful and scalable outcomes.

- **Types of Innovation:**
- **Product Innovation:** Example – The iPhone revolutionized mobile communication.
- **Process Innovation:** Example – Toyota's lean manufacturing streamlined efficiency.
- **Service Innovation:** Example – Airbnb enhanced global travel experiences.
- **Business Model Innovation:** Example – Netflix shifted entertainment to subscription streaming.
- **Social Innovation:** Example – Solar-powered water purifiers improving access to clean water.

The Story of SpaceX Falcon X

Idea → Prototyping → Validation → Commercialization → Scaling



Idea:
Vision:

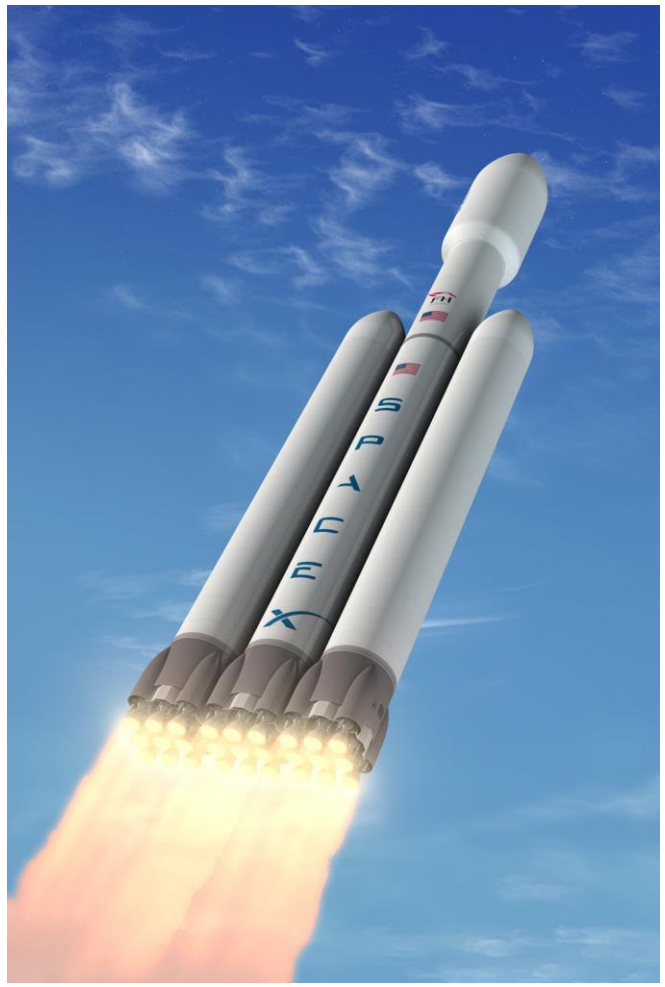
Elon Musk envisioned reusable rockets to reduce space exploration costs and make space travel more accessible.

Prototyping: Execution:

SpaceX engineers built multiple prototypes of the Falcon 1, experimenting with materials and rocket engines.

Validation: Proof of Concept:

After three failed launches, the fourth attempt succeeded, validating the technology and proving the concept of reusable rocket parts.



Commercialization Market Entry:

SpaceX secured contracts with NASA and commercial satellite providers, offering lower-cost launch services.

Scaling->
Growth:

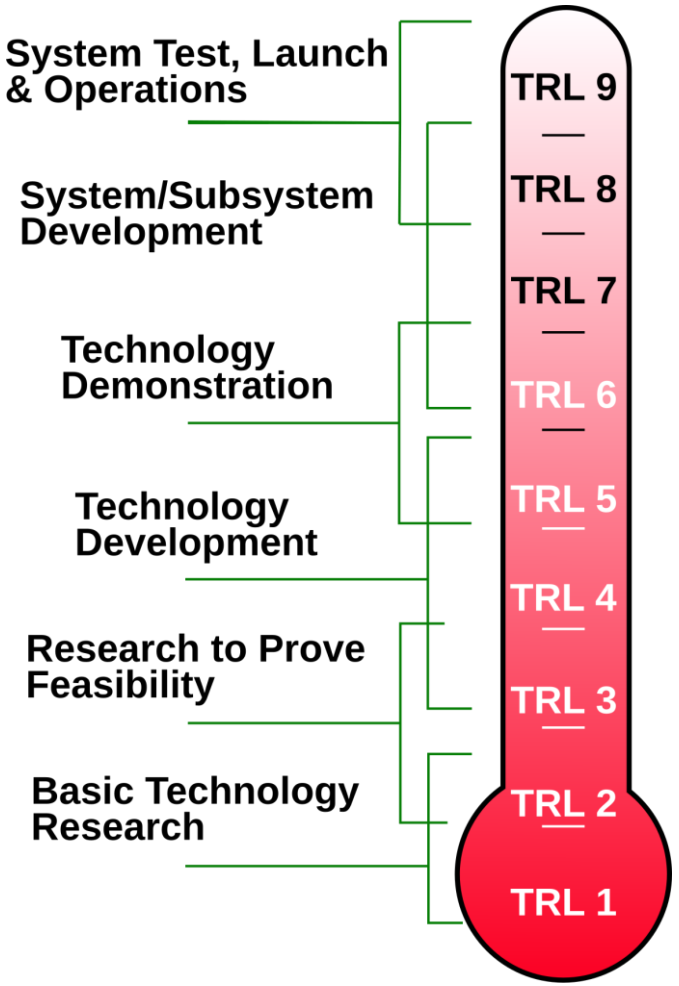
Built on Falcon 1's success to develop Falcon 9 and Falcon Heavy, expanding capabilities to larger payloads and crewed missions.

SpaceX Falcon story is a testament to how embracing failure, challenging conventions, and leading with vision can ignite groundbreaking innovation and creativity.

- 1. Embrace Failure as a Stepping Stone to Success
  - Lesson: Failure isn't the end—it's a critical part of the innovation process. Creativity thrives when risks are taken, mistakes are embraced, and lessons are learned.
- 2. Break Conventional Barriers with First Principles Thinking
  - Lesson: Innovation requires breaking free from assumptions, questioning the norm, and reimagining what's possible from the ground up.
- 3. Visionary Leadership Drives Creative Teams
  - Lesson: Great innovation stems from a compelling vision that inspires individuals to think creatively, push boundaries, and work collectively toward a transformative goal.

Technology Readiness Levels (TRLs):

From Concept to Deployment



The development of the Pfizer-BioNTech COVID-19 vaccine

TRL 1: Basic Principles Observed	**Observation**: Initial research on mRNA technology and its potential use in vaccine development.
TRL 2: Concept Formulated	**Formulation**: The concept of using mRNA to target the spike protein of SARS-CoV-2 was proposed.
TRL 3: Experimental Proof of Concept	**Proof of Concept**: Experimental vaccines were created and tested in laboratory settings to confirm immune responses in cells.
TRL 4: Laboratory Testing of Prototype Components	**Testing**: mRNA formulations and delivery mechanisms (lipid nanoparticles) were refined in controlled lab conditions.
TRL 5: Validation in a Relevant Environment	**Validation**: Vaccine prototypes underwent Phase 1 clinical trials to assess safety and immune response in humans.
TRL 6: Demonstration in a Relevant Environment	**Demonstration**: Expanded Phase 2/3 clinical trials were conducted to confirm safety and efficacy in a broader population.
TRL 7: Prototype Demonstration in an Operational Environment	**Operational Testing**: Large-scale manufacturing and logistics systems were tested to ensure quality and consistency.
TRL 8: System Completed and Qualified	**Completion**: Regulatory approval was granted for emergency use, confirming the vaccine met all safety and efficacy standards.
TRL 9: Full Deployment and Commercial Use	**Deployment**: The vaccine was distributed and administered worldwide, becoming a critical tool in combating the pandemic.

Development of a Self-Driving Car

TRL 1-3: Basic Research & Concept:	**TRL 1:** Basic research on sensors (LiDAR, radar, cameras), artificial intelligence (AI) algorithms (object detection, path planning), and vehicle dynamics. **TRL 2: Concept formulation**: Defining the core functionalities of a self-driving car (e.g., lane keeping, obstacle avoidance, traffic signal recognition). **TRL 3: Proof-of-concept:** Demonstrating basic functionalities in a simulated environment or a very controlled setting.
TRL 4-6: Technology Validation & Proof of Concept:	**TRL 4: Component validation**: Testing individual components like sensors, processors, and actuators in a laboratory setting. **TRL 5: Component and/or breadboard validation in relevant environment**: Testing integrated components in a simulated environment that resembles real-world conditions. **TRL 6: System/model or prototype demonstration in a relevant environment**: Testing a prototype of the self-driving car in a controlled environment like a test track.
TRL 7-9: System Demonstration & Operational Use:	**TRL 7: System/model demonstration in an operational environment**: Testing the self-driving car in real-world traffic conditions with safety drivers. **TRL 8: System complete and qualified**: Conducting extensive testing and validation of the self-driving system in real-world conditions to ensure safety and reliability. **TRL 9: System proven in operational environment**: Commercial deployment of fully autonomous vehicles in real-world conditions.

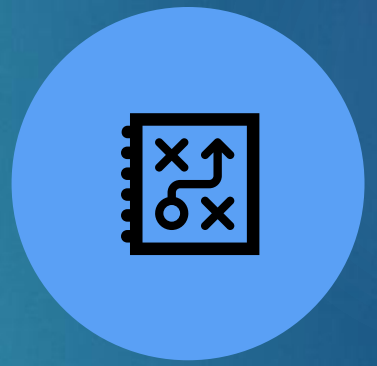
Father of the White Revolution: Amul is one of the most significant innovations in India's agricultural sector

- **Problem Identification & Vision (TRL 1): Kurien identified challenges in India's dairy sector and envisioned Amul as a cooperative model to bypass middlemen and empower farmers.**
- **Research & Innovation (TRL 2): Conducted research on cooperative models to streamline milk procurement and processing, ensuring fair pricing for farmers, and began developing early innovations.**
- **Technological & Supply Chain Development (TRL 3): Introduced dairy technologies like pasteurization and refrigeration, while creating an integrated system for milk collection, processing, and distribution.**
- **Pilot & Expansion (TRL 4-6): The successful pilot in Anand led to scaling Amul across Gujarat and nationally, building infrastructure for large-scale milk processing.**
- **National Success & Global Leadership (TRL 7-9): Amul became a household name, making India the world's largest milk producer and setting a model for rural innovation and cooperative systems.**

Challenges in Innovation and Technology Readiness Level (TRL) Progression

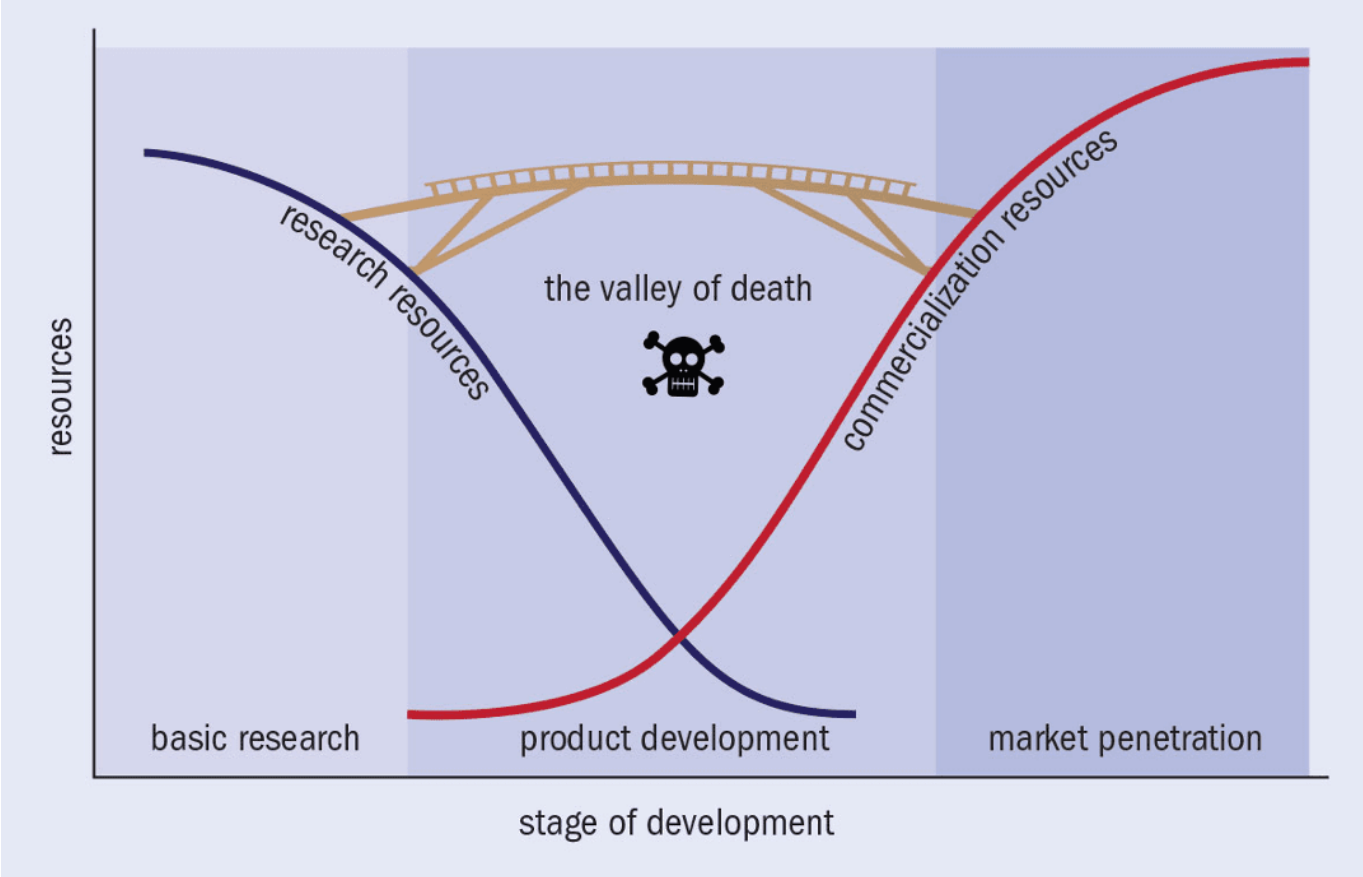
CHALLENGE 1: BRIDGING THE VALLEY OF DEATH

CHALLENGE 2: RESOURCE CONSTRAINTS



CHALLENGE 3: RISK MANAGEMENT

Challenge 1: Bridging the Valley of Death




No thanks!
We are too busy.

Collaboration, strategic investment, and innovation in risk management helped Moderna overcome challenges to deliver a life-saving solution.

- Early mRNA vaccine research (TRL 1-3) faced funding and support issues due to skepticism about the technology's feasibility.
- Limited expertise in mRNA production and distribution at scale posed significant challenges.
- Fast-tracking clinical trials (TRL 5-7) meant balancing safety, efficacy, and regulatory compliance under tight timelines.

Failure to Success Story – Post-it Notes by 3M from 1960 to 1980

- **TRL 1-3:** Dr. Silver's discovery and refinement of the adhesive
- **Validation Phase (TRL 5-6):**
  - The adhesive was tested as a potential solution for note-taking and organizing, but initial market research showed lukewarm interest.
- **Learning from Setbacks:**
  - Early trials with consumers failed to show traction because people didn't understand how to use the product.
  - The team pivoted by distributing free samples to office workers to demonstrate its usefulness, which generated excitement.
- **Commercial Success (TRL 7-9):**
  - 3M rebranded the product as Post-it Notes and launched it in 1980.
- It quickly became one of the most successful and iconic office products in history, proving the value of embracing failure and iterative testing.

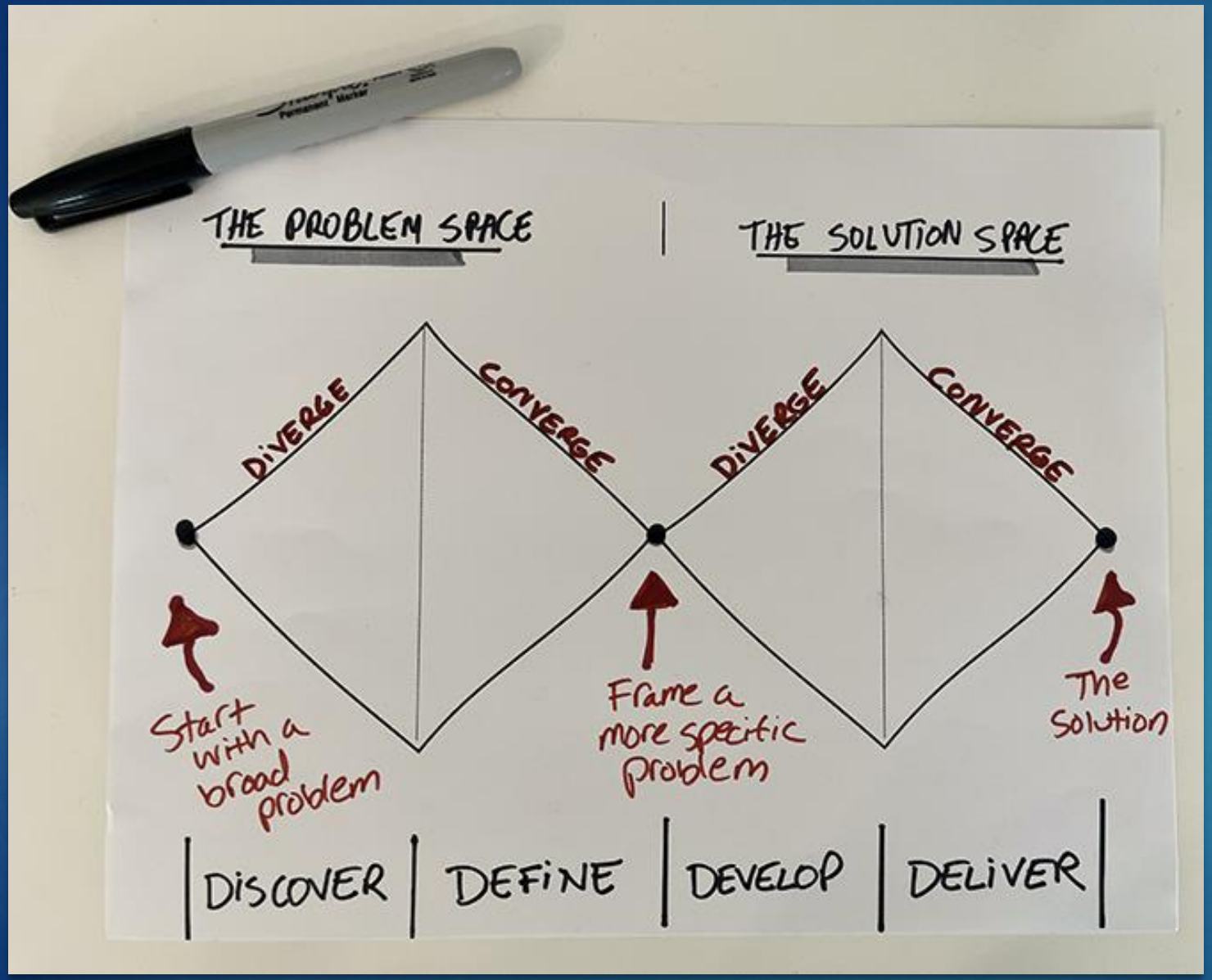

LOOK WHAT I'VE INVENTED!
WHAT USE IS IT?
GRIND

Failed adhesive → Bookmark prototype → Market testing → Global success.

Key Takeaways for the Post-it:

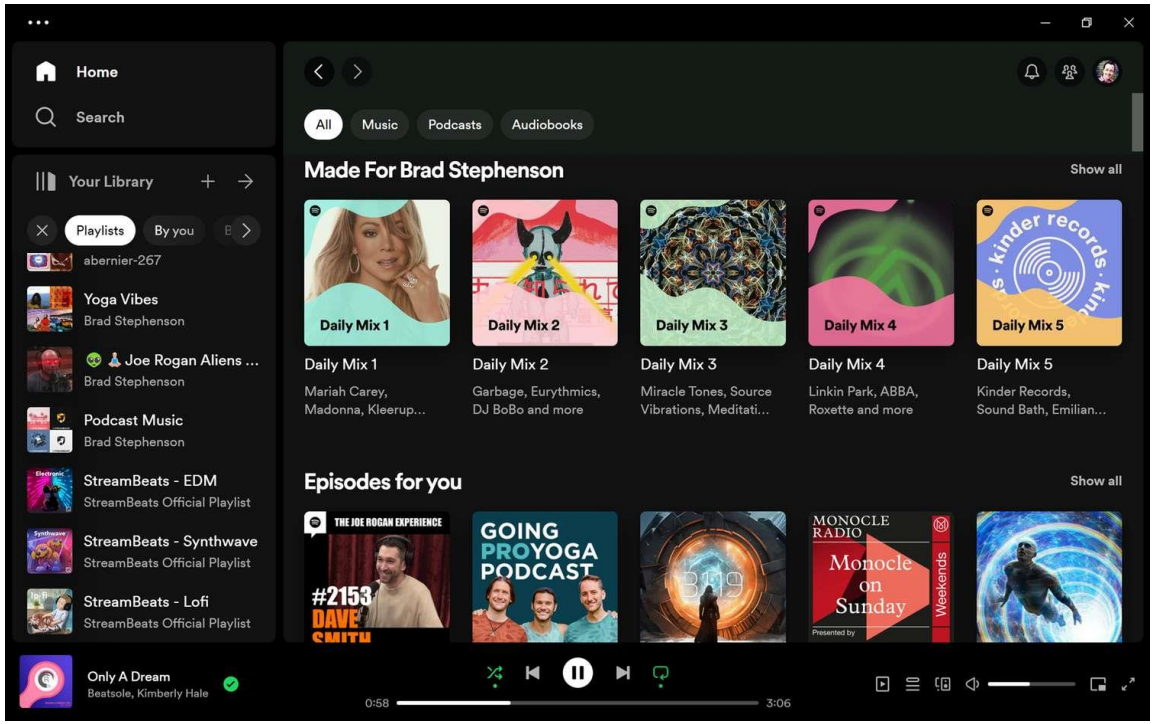
A failed adhesive became one of the world's most successful office products.

- Innovation Doesn't Follow a Straight Path:
A failed adhesive turned into a breakthrough product by identifying a new use case.
- Validation Requires Creativity:
Consumer trials and sampling were essential to prove the product's value and overcome initial skepticism.
- Embracing Failure is Essential:
Setbacks in the lab and market research led to creative thinking and ultimately a huge commercial success.



Tool- Design Thinking

Design Thinking & Spotify

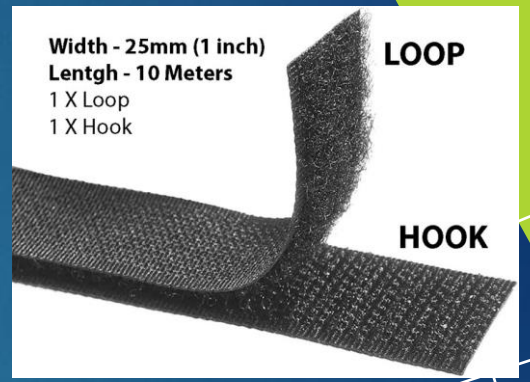


- **Empathy**: Spotify's founders saw that music lovers struggled with purchasing and organizing their music libraries. They wanted to create a solution that would give users access to music instantly, without needing to own it.
- **Define**: The challenge was to provide a legal, high-quality, and user-friendly music streaming platform that could rival illegal downloads.
- **Ideate**: Spotify's team experimented with various models, including freemium features, playlists, and smart recommendations, to find the right combination of value and accessibility.
- **Prototype & Test**: Spotify went through several iterations of the app, focusing on user experience, seamless streaming, and features that made the platform interactive (e.g., collaborative playlists).

Spotify revolutionized the music industry by offering a **personalized**, **easy-to-use platform** that allows millions of users to stream music on-demand. It is now one of the largest music streaming services globally.

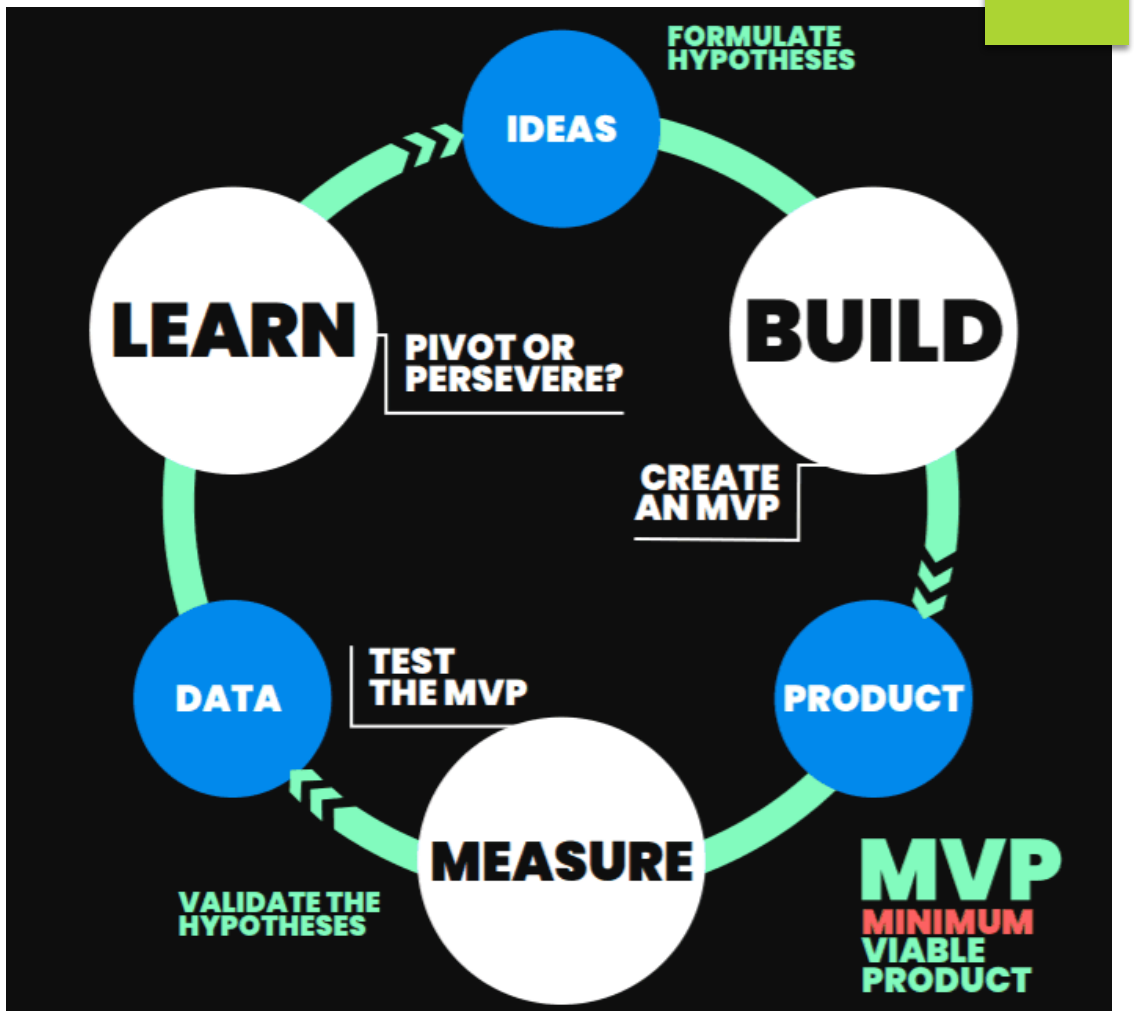
Innovation Through Cross-Pollination

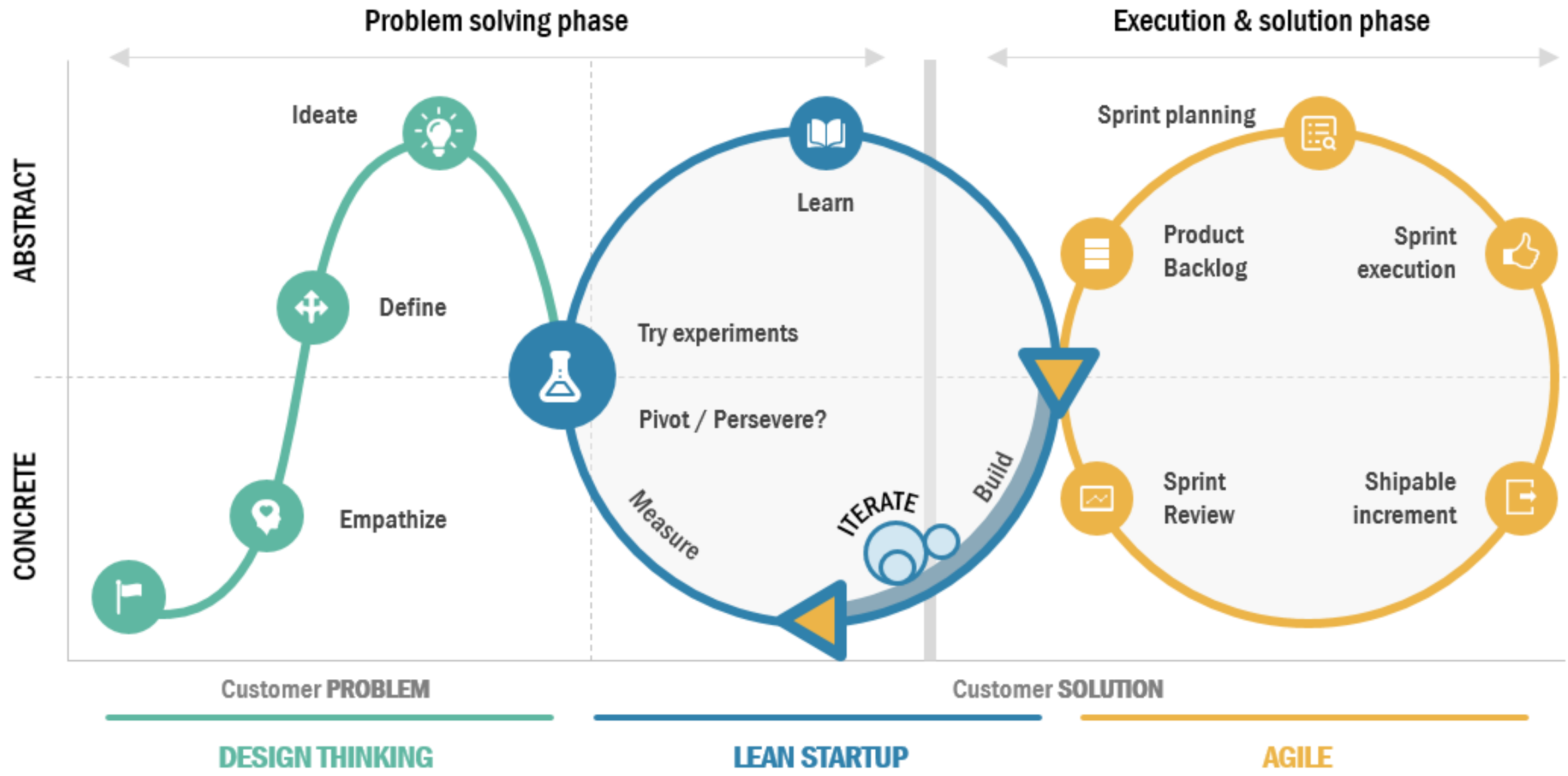
- James Dyson adapted cyclone technology from **sawmills** to design a vacuum cleaner without bags.
- Inspired by burrs **sticking** to clothing, Velcro was created by mimicking the tiny hooks found in nature.
- Borrowed **knitting** techniques from the textile industry to create lightweight, form-fitting shoes.

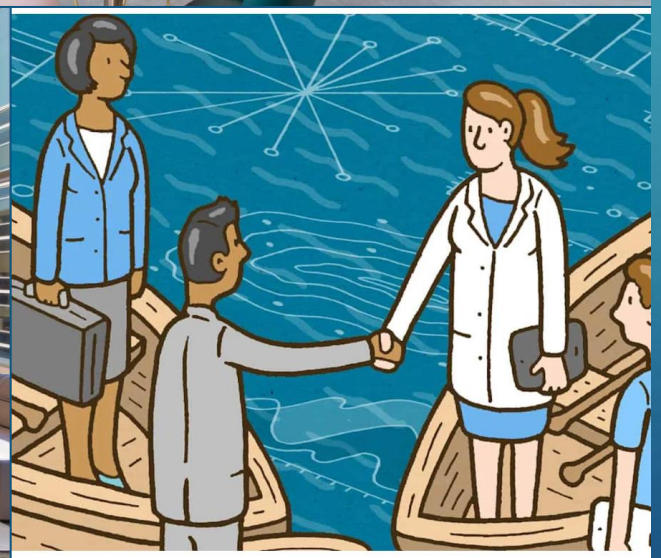


Tool: Lean Startup

- **Zappos:**
- The founder, Nick Swinmurn, tested the concept by creating a website and manually fulfilling orders by buying shoes from local stores.
- This validated demand before scaling operations.



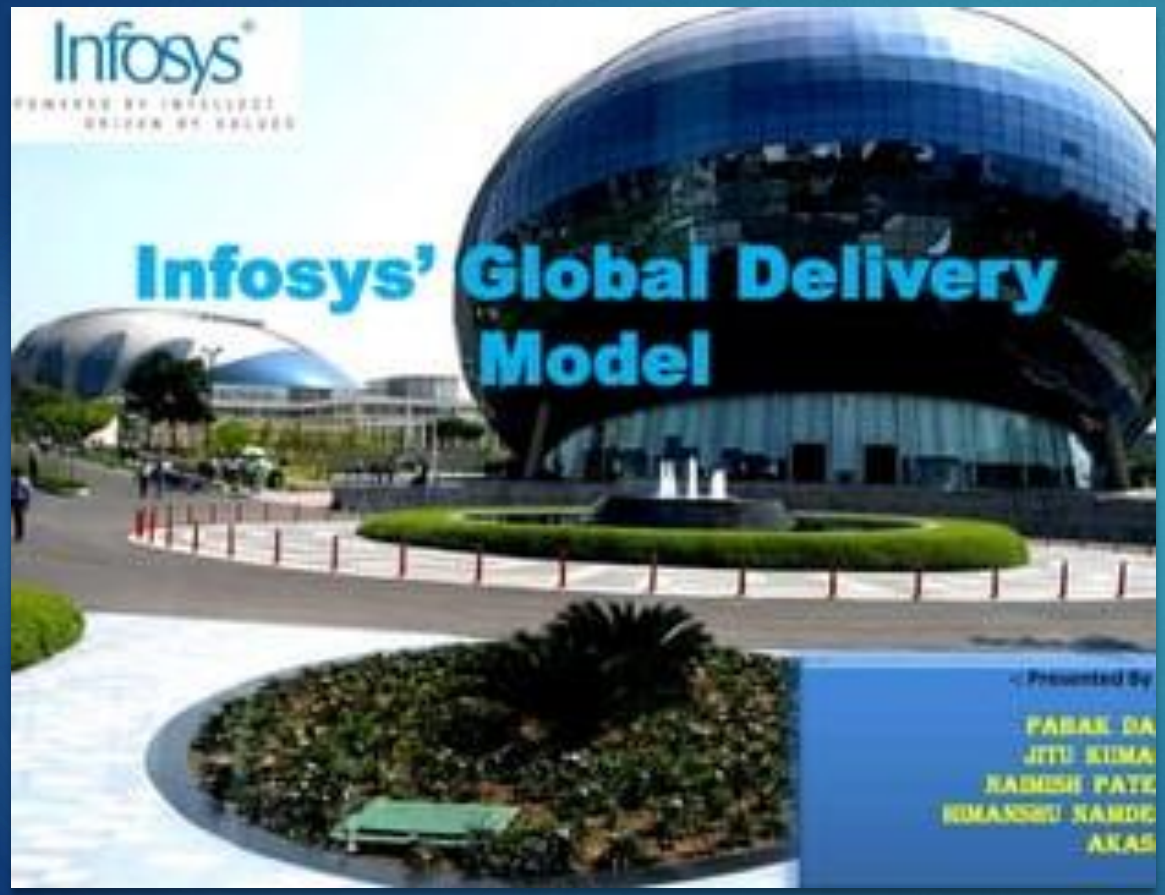

Problem solving phase
Execution & solution phase
ABSTRACT
CONCRETE
Ideate
Define
Empathize
Learn
Try experiments
Pivot / Persevere?
Measure
ITERATE
Build
Sprint planning
Product Backlog
Sprint execution
Sprint Review
Shipable increment
Customer PROBLEM
Customer SOLUTION
DESIGN THINKING
LEAN STARTUP
AGILE



Innovation **space** for collaboration

- Great things are not accomplished by one person alone, but through collaboration with others and the tools they bring.
- Creative space, structure, and industry collaboration play significant role

The Creative Spark: The Global Delivery Model

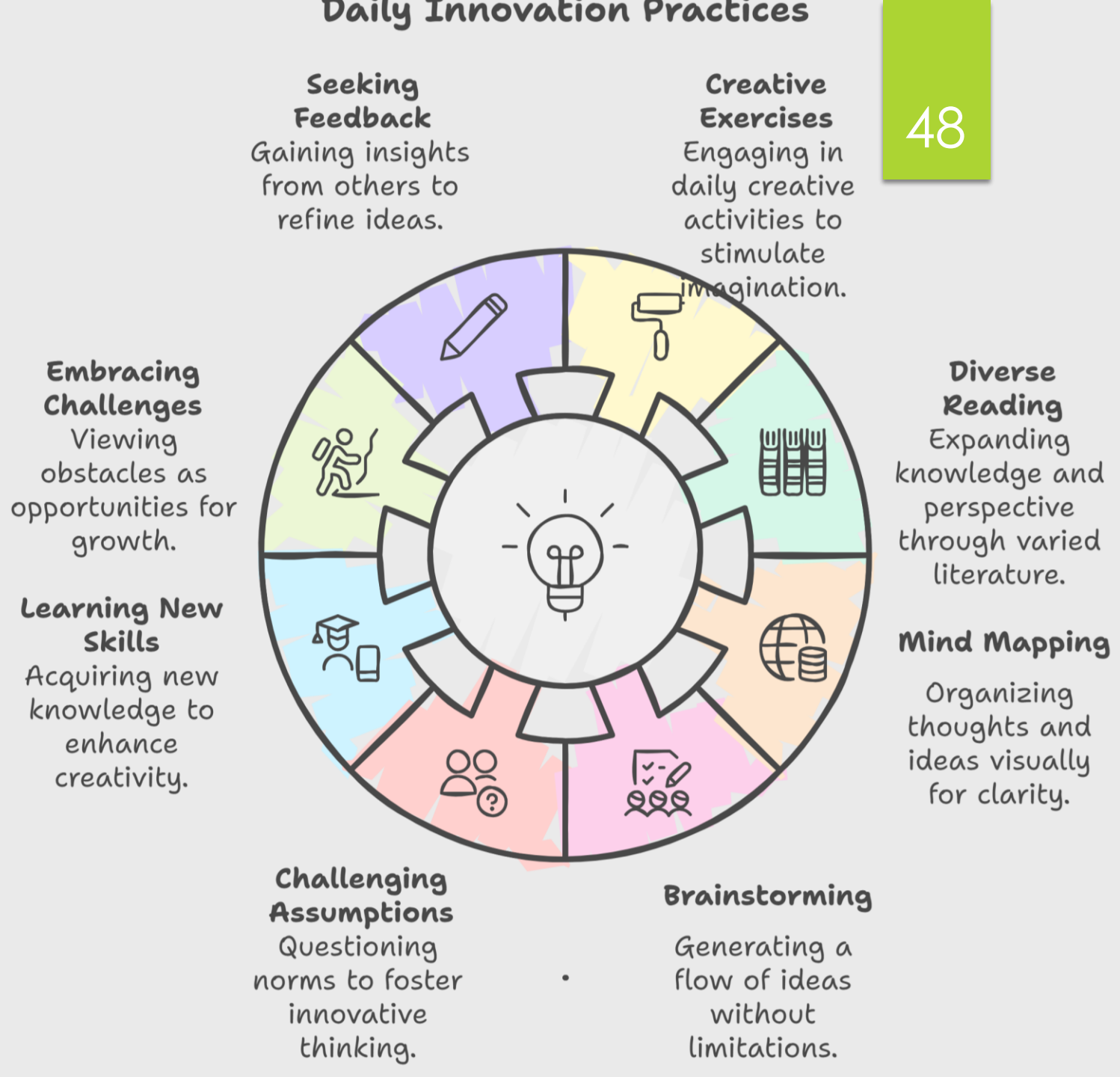


- 1981 by Narayana Murthy and six others, had to think differently to compete globally while operating from India.
- India for Development and Testing
- On-Site for Customer Interaction
- Seamless Coordination
- Infosys introduced innovative practices like:
  - 24/7 work cycles
  - Quality Assurance
  - Training Ecosystem

6 Pillars of innovation Agility

- Collaboration
- Resilience
- Exploration
- Ambition (Thinking, with a forward-driving mindset)
- Tenacity
- Energy (for sustaining creative drive)

How can we better at Innovation by daily practice?



Key Takeaways

- Most Innovations Are Born from **Constraints**, Not Abundance(The Apollo 13 mission's use of duct tape and other materials onboard to solve life-threatening problems)
- **Failure** Is a Prerequisite for Innovation (**James Dyson**: 5,127 failed prototypes before creating the Dyson vacuum)
- The Best Ideas Often Come from **Outside** Your Industry (The **Velcro** fastener was inspired by burdock burrs clinging to clothing.)
- Ideas Are Overrated – **Execution** Is Everything (Facebook wasn't the first social media platform (MySpace was bigger), but its execution redefined user experience.)
- **Collaboration** Outperforms Lone Genius (The iPhone was the product of cross-functional collaboration, not Steve Jobs alone)
- The Most Creative People **Copy** First, Innovate Later (Apple borrowed heavily from Xerox's GUI to create the Mac)
- Your Brain Is Wired to **Resist** Creativity
- Your Best Ideas Will Come When You're **Not Working**(Archimedes' "Eureka!" moment happened in a bathtub.)
- The Creative Process Isn't **Linear**
- **Incremental** Improvements Beat Revolutionary Ideas


zepto


Women's Store
Be fashion forward
Clothing
Jewellery
meesho


SKYROOT
INDIAN PRIVATE ROCKET


#10 YEARS OF Inc42
BharatPe


The Success Story of
boAt
FIFTH LATEST
Wearable Brand in the
world

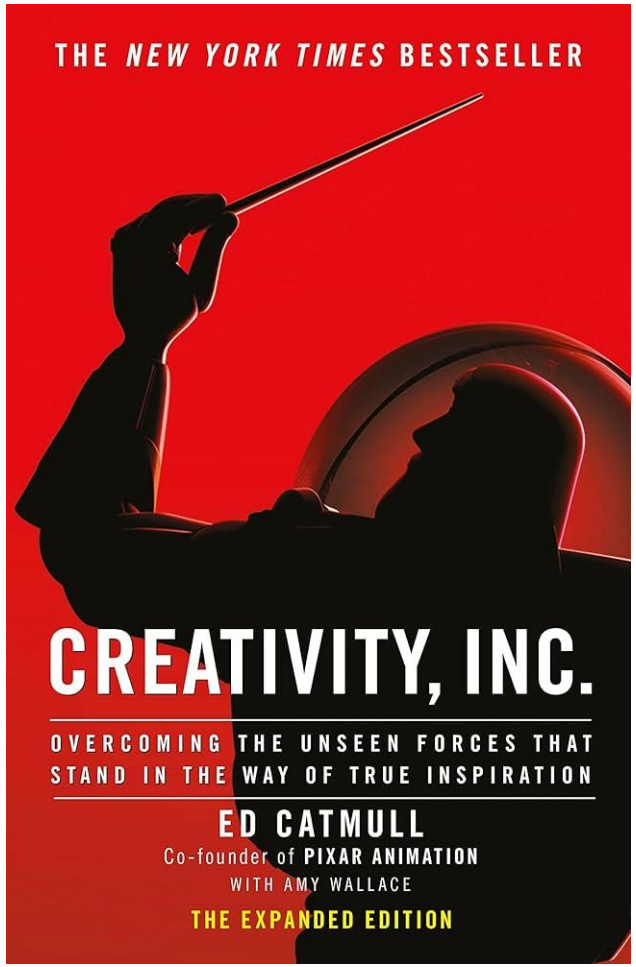

UC
Urban Company
UC Urban Beauty
UC Urban Painting
UC Urban Repairs
UC Urban Spa
UC Urban Grooming
UC Urban Cleaning

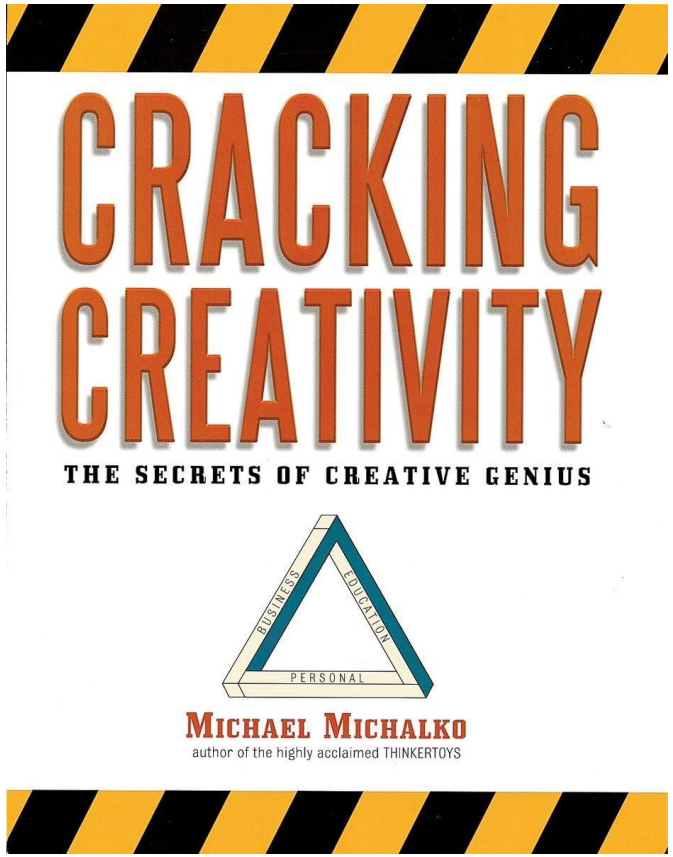

practo


zomato


OLA

Books on Creativity That Have Inspired Me!





Chandan Lal Patary

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