



UNIVERSITA' DEGLI STUDI  
DI ROMA TOR VERGATA



UNIVERSITY ROME TOR VERGATA  
SCHOOL OF ECONOMICS PRESENTS

# **BUSINESS MODEL INNOVATION**

**A COURSE BY:**  
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# Lesson #6

## Generate Innovation Strategy

# Today

## NAUTILUS: The Innovation Management Methodology

- STEP 4 – Generate Innovation Strategy
- STEP 5 – Animate Creativity Process

## Case study session

- Competitive Landscape & positioning
- Modelling the market
- Creative Brainstorming

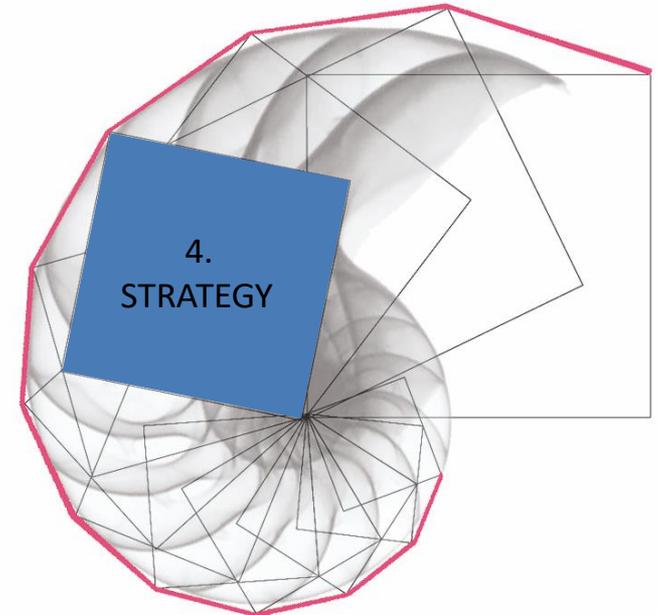
## STEP 4 DEFINE INNOVATION STRATEGY

### ACTIVITIES

- **Identify the strongest combination of Product-Services on the Market Opportunities**
- Analyse pros and cons of using different innovation approaches (Open Innovation):
  1. use of internal R&D,
  2. hire and retain the best human capital,
  3. ally with innovative companies,
  4. buy innovation through acquisitions.
- Design the Innovation Strategy Matrix

### DELIVERABLES

- Innovation Strategy Matrix (Product-Service/Market)



*"An innovation strategy is a plan to grow market share or profits through product and service innovation. When it comes to creating the solution, an innovation strategy must also indicate whether a product improvement, or a disruptive or breakthrough innovation approach is best."*

*... "A plan made by an organization to encourage advancements in technology or services, usually by investing in research and development activities."*

# Identify the strongest combination of Product-Services/Market

Product/ Market	M1	M2	M3	M4	M5	...
P1						
P2						
P3			P/M			
P4						
...						

# How to verify a product/market (p/m) combination

- **Investment efforts and costs (FTV analysis) \*\***  
Considering the Functions-Technologies-Values combination, how many completely new items will be needed, and how does this translate into investments.
- **Direct Income (Product/Market Business Plan) \*\***  
Considering just this new product/market combination what sort of income generation can I expect over time.
- **Indirect Income**  
What income will be generated for my other product/market combinations.
- **Overall ROI (Company Business Plan) \*\***  
Complete Return on Investment analysis. Comparison with other combinations and also that of NOT developing new p/m combinations
- **Strategic Fit**  
How well does this new p/m combination fit my overall company strategy and values
- **Risks Analysis (Brainstorming)**  
What are the inherent risks connected with this new development. What are the unseen dangers (competition, loss of image etc.)

# Investment efforts and costs (FTV analysis)

- **Human Resource Costs**

Will investments in new resources or training of existing resources be necessary. Will this cost be absorbed over what period of time. Could it be a continuous or recurring costs.

- **Outsourcing**

Will obtaining technology or creating new functions involve purchasing or partnerships. What cost will they have, and what risks may be introduced (Supplier power)

- **New technology**

Will new technology have to be developed. What development and production costs are involved. Will the IPR have to be protected (patent costs)

- **Values**

Does the new m/p fit my current values. If not could this damage my image and consequently my existing business

# Direct Income (Product/Market Business Plan)

- **Determine product sales price**  
Look at competition, consider competitive advantage and test price hypothesis. Consider price trends over time.
- **Estimate overall market size**  
Look at current sales figures for competition and consider trends. Select geographic areas, and possible extension strategy.
- **Set a market share growth for next 5 years**  
Keep the initial market entry relatively low, and be reasonable about the final share target, considering the number of players in the market
- **Calculate direct production costs**  
Consider person time, consumables, hardware, software, energy, and purchases
- **Calculate income from product sales**  
Sales price less direct production costs.

# Overall ROI (Company Business Plan)

- **Consider market entry costs**  
Product launch costs. Marketing, publicity, promotion and sales costs
- **Consider equipment and building investment costs**  
Remember to do this based on your target market share and consequent production volume
- **Include cost of financing**  
Look at the cost and method of raising capital, including how long it will be needed. Carry out hypothesis testing to cover risks.
- **Check that ROI gives a positive NPV**  
Otherwise don't do it OR do it if value is generated in other ways for the company

# What is the strongest combination of Product-Services/Market ?

Product/ Market	M1	M2	M3	M4	M5	...
P1						
P2					P/MO	
P3			P/M			
P4						
...	PO/M				PO/MO	



# Strongest combination of Product-Services/Market

Product/ Market	M1	M2	M3	M4	M5	...
P1						
P2						
P3			P/M			
P4						
...					PO/MO	

Could they develop a commodity product (other brand for a mass market?)

**NETFLIX**

# Strongest combination of Product-Services/Market

Product/ Market	M1	M2	M3	M4	M5	...
P1						
P2					P/MO	
P3			P/M			
P4						
...						

Could develop its morning and afternoon market (gym classes for housewives?)



# Opportunity areas

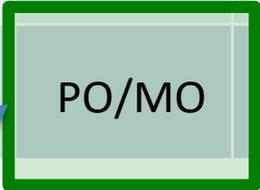
Product/ Market	M1	M2	M3	M4	M5	...
P1						
P2						
P3			P/M			
P4	PO/M					
...						

Direct delivery of motor cars



# Opportunity areas

Product/ Market	M1	M2	M3	M4	M5	...
P1						
P2						
P3			P/M			
P4						
...					PO/MO	



Introducing 5G technology/services



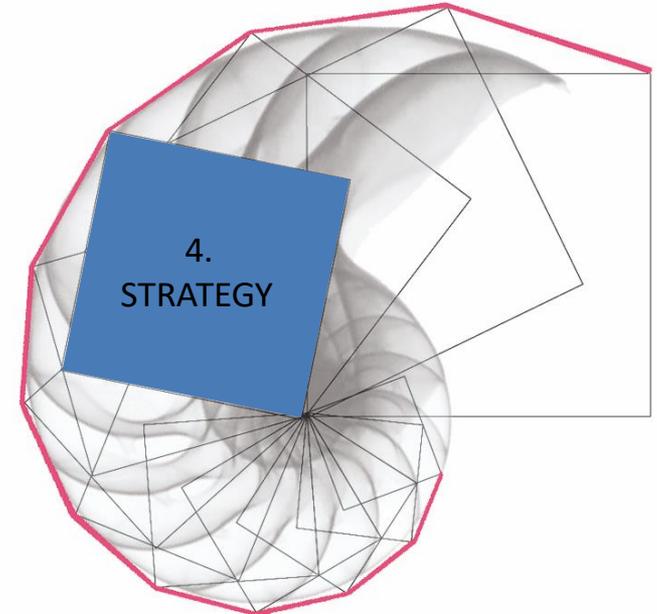
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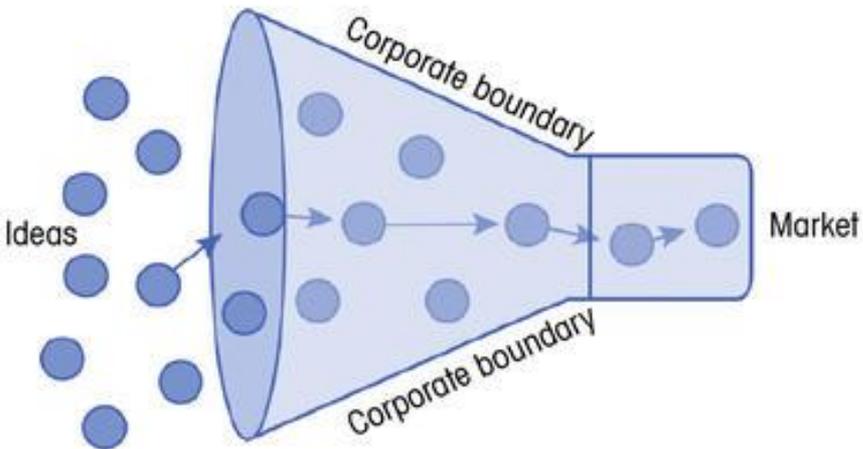


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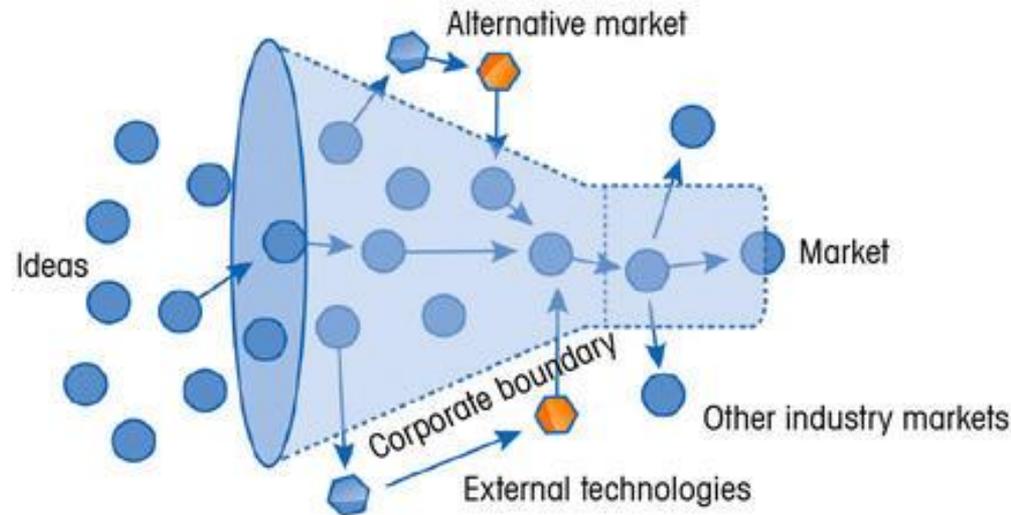
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# Closed vs Open Innovation

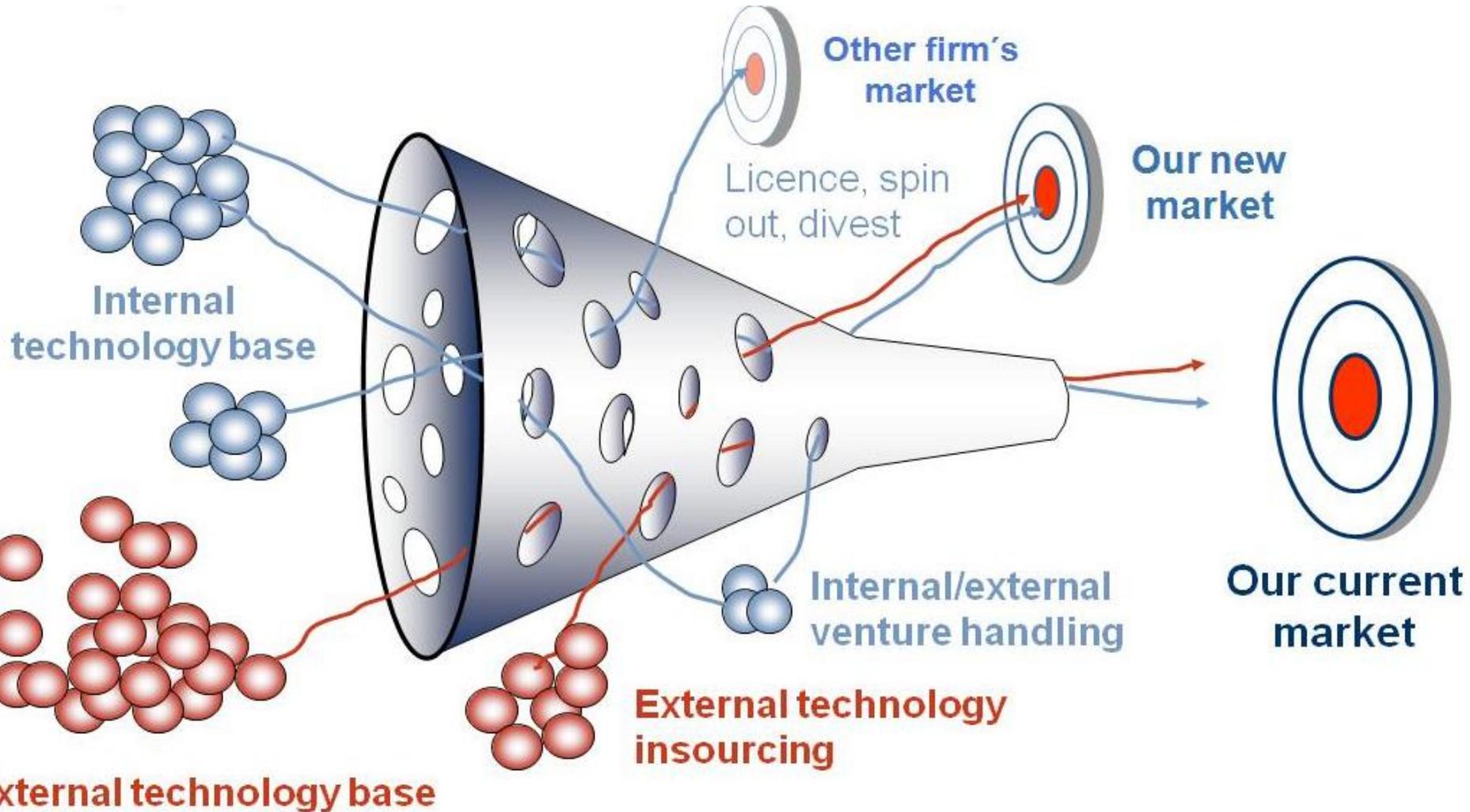
**Closed Innovation model**



**Open Innovation model**



# The Open Innovation Concept



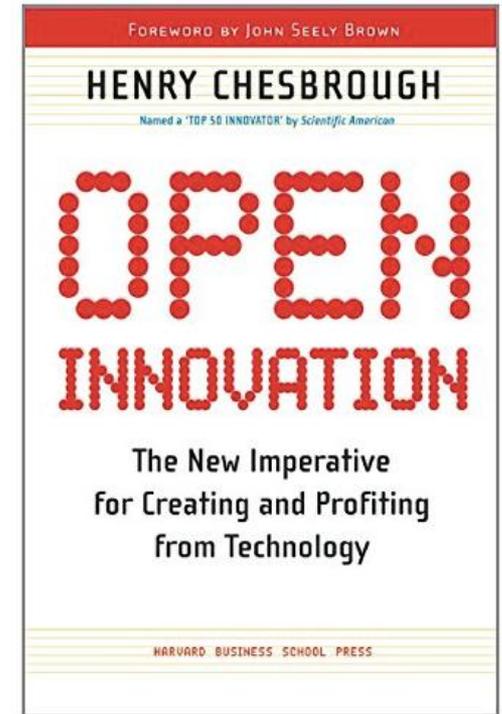
# Open Innovation pros/cons

## Advantages

- Reduced cost of conducting research and development
- Potential for improvement in development productivity
- Incorporation of customers early in the development process
- Increase in accuracy for market research and customer targeting
- Potential for synergism between internal and external innovations
- Potential for viral marketing

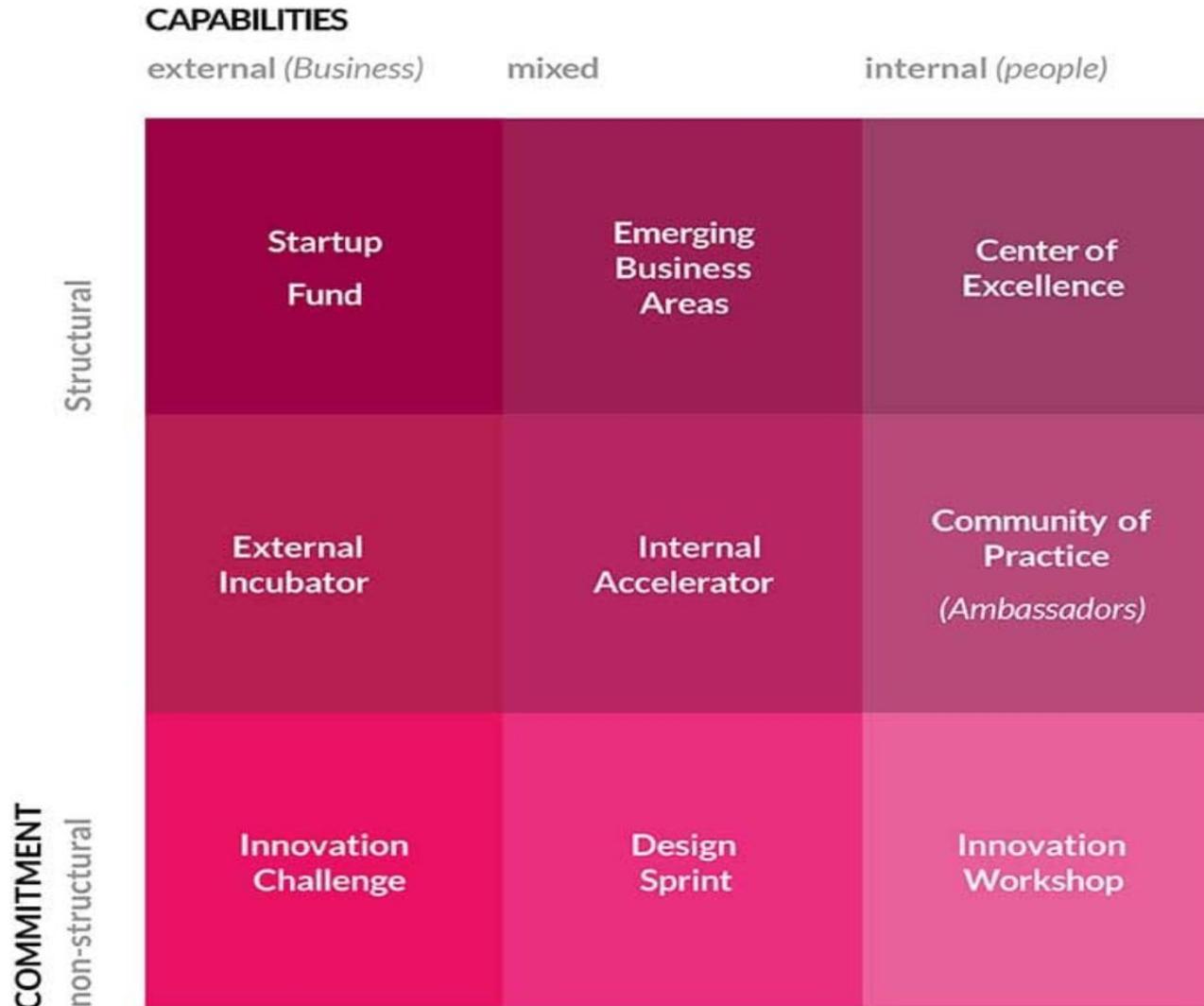
## Disadvantages

- Possibility of revealing information not intended for sharing
- Potential for the hosting organization to lose their competitive advantage as a consequence of revealing intellectual property
- Increased complexity of controlling innovation and regulating how contributors affect a project
- Devising a means to properly identify and incorporate external innovation
- Realigning innovation strategies to extend beyond the firm in order to maximize the return from external innovation



Henry W Chesbrough (2006)

# Innovation Tools



# Innovation Strategy Tools

## *Structural*

- 1. Startup Fund.** A startup fund is a corporate fund that invests in external opportunities. It aims to generate growth through external capabilities in line with the strategic objectives of an organization.
- 2. Emerging Business Areas.** Emerging (or New) Business Areas are sandbox environments where new business initiatives can grow before they prove their profitability and potentially enter an actual business unit, or become a new business unit.
- 3. Center of Excellence.** A center of excellence is a formal group in the organization that coordinates innovation initiatives to ensure that innovation is structurally embedded in the organization.

# Innovation Strategy Tools

## *Structural to Non Structural*

- 4. External Incubator.** An external startup incubator is a corporate initiative to support, grow and evaluate external startups for a specific period of time.
- 5. Internal Accelerator.** An innovation accelerator is an internal innovation program to free up time for intrapreneurs to develop, test and grow new business ideas outside of organizational processes and deliverables.
- 6. Community of Practice.** A community of practice is a cross-functional group of people within an organization with common interests and goals who share expertise within the organization.

# Innovation Strategy Tools

## *Non Structural*

**7. Innovation Challenge.** An innovation challenge is an open initiative to get external expertise to solve organizational or societal challenges.

**8. Design Sprint.** A Design Sprint is a (five-day) process for answering critical business questions through design, prototyping, and testing ideas with customers. It is an ad-hoc initiative that forces employees to interact closely with the outside world.

**9. Innovation Workshop.** An innovation workshop is a (1+ days) session through which employees are invited to create new ideas or business concepts outside of the normal work process.

# Open Innovation choices

	<b>TESLA</b> Could develop a commodity product (other brand for a mass market?)	<b>NETFLIX</b> Could develop its morning and afternoon market (gym classes for housewives?)	<b>AMAZON</b> Could deliver cars directly to customers (different logistics/sales operation)	<b>HUAWEI</b> Could develop 5G technologies and services
use of internal R&D	Collaborating with alliance partner	=	=	Collaborating with top R&D centres
hire and retain the best human capital	=	=	=	=
ally with innovative companies	Alliance with Nissan	=	Alliance with car sales network to form backbone	=
buy innovation through acquisitions	=	Acquire existing gym content	=	=

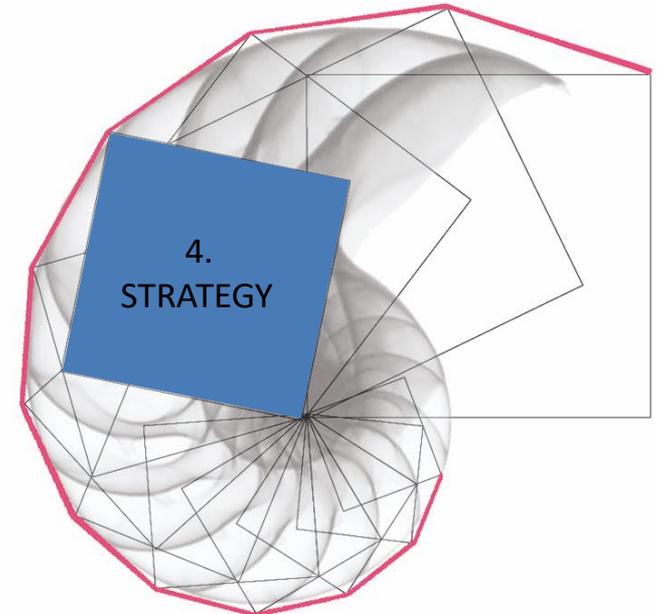
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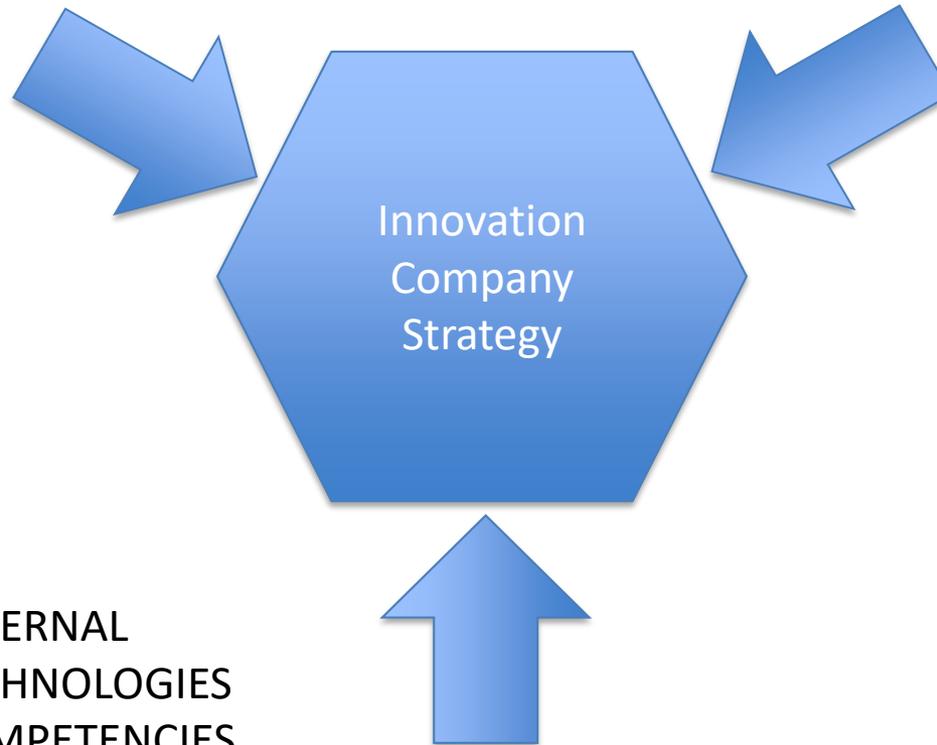


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# Innovation Strategy Building – Consider your Ecosystem

INTERNAL  
TECHNOLOGIES  
COMPETENCIES  
What can you  
use/do  
internally



MARKET  
What does the  
market want  
How can you  
meet those needs

EXTERNAL  
TECHNOLOGIES  
COMPETENCIES  
(Open Innovation)  
What can you find and involve from the outside

# Selecting the market/product combination



## STEP 5

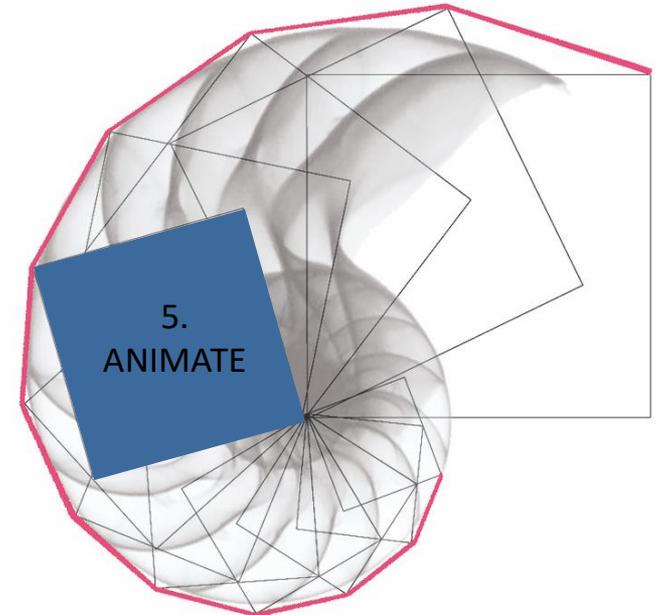
# ANIMATE CREATIVITY PROCESS

### ACTIVITIES

- Explore relevant and disruptive Technologies and Trends
- Scan/soliciting external communities (Universities, Research Centers, startups, new patents)
- Conduct Innovative ideas generation Workshop
- Use Creative Problem Solving methods

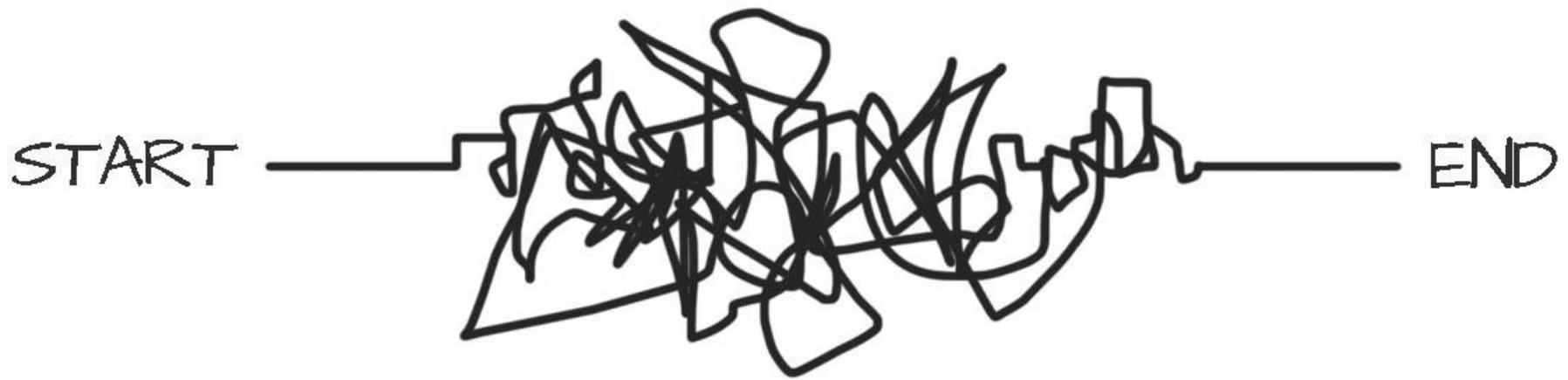
### DELIVERABLES

- List of relevant ideas (3 to 10) for innovative products or services
- Preliminary Business Case for selected ideas



*The creative process is a fundamental step for a successful Innovation Strategy. Creativity, however, must be put into a specific context and focused in identifying specific solutions, otherwise there is a concrete risk to have useless and time consuming brainstorming sessions.*

# THE CREATIVE PROCESS



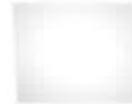
# The Creativity Engine



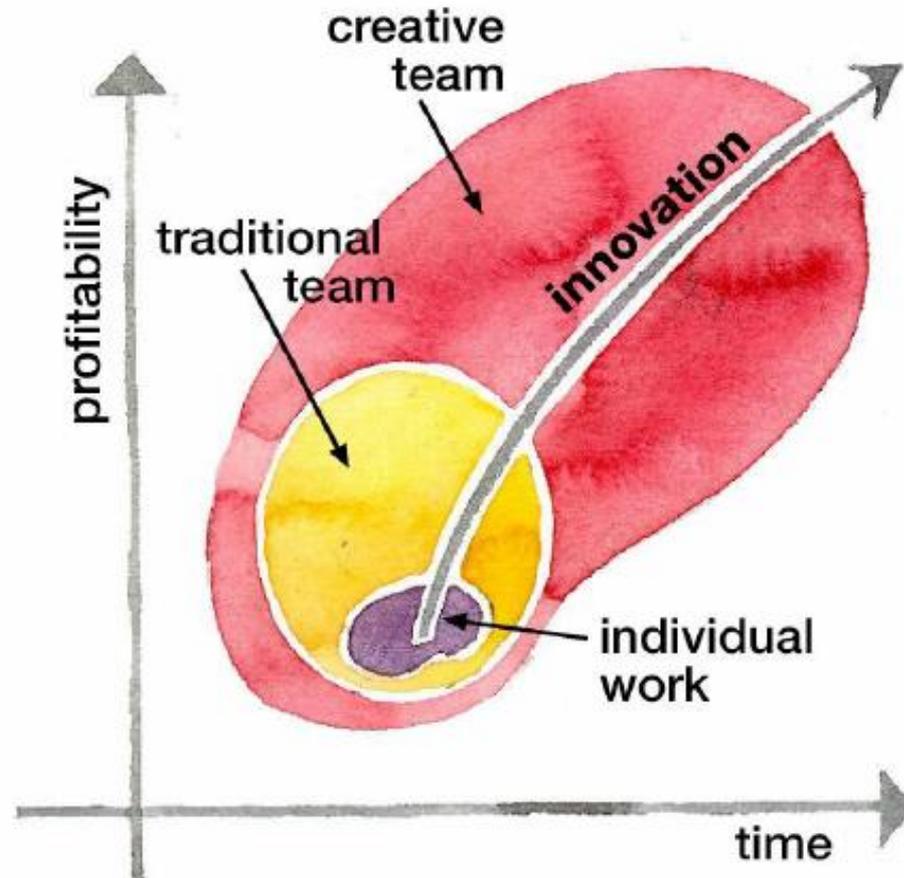
# Celebrate

# **TED<sup>x</sup>** Stanford

x = independently organized TED event

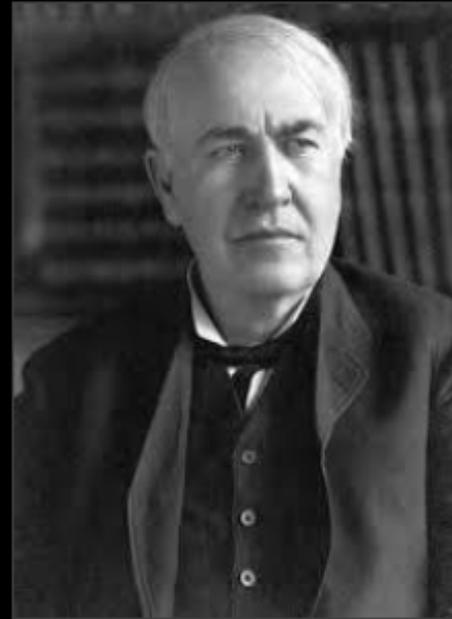


# The Creative Team





*“I haven’t failed.  
I’ve just found  
10.000 ways  
that don’t work”*



*Edison*

## PROCESS



### Blue Hat - Process

Thinking about thinking.  
What thinking is needed?  
Organizing the thinking.  
Planning for action.

## CREATIVITY



### Green Hat - Creativity

Ideas, alternatives, possibilities.  
Solutions to black hat problems.

## FACTS



### White Hat - Facts

Information and data.  
Neutral and objective.  
What do I know?  
What do I need to find out?  
How will I get the information I need?

## BENEFITS



### Yellow Hat - Benefits

Positives, plus points.  
Why an idea is useful.  
Logical reasons are given.

## FEELINGS



### Red Hat - Feelings

Intuition, hunches, gut instinct.  
My feelings right now.  
Feelings can change.  
No reasons are given.

## CAUTIONS



### Black Hat - Cautions

Difficulties, weaknesses, dangers.  
Spotting the risks.  
Logical reasons are given.



# The Four Rules of Brainstorming

- Suspend judgement
- Quantity, quantity, quantity
- The craziest ideas are welcome
- Combine own ideas with others



# Basic problem solving tools

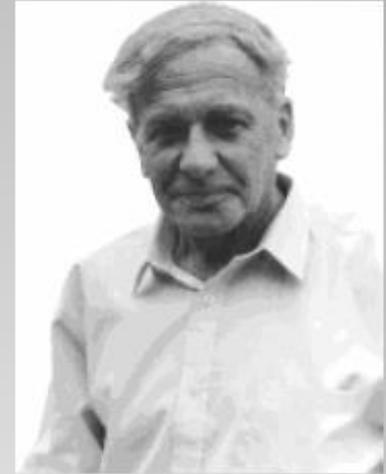
- Psychology more than technology
- Highly dependent upon facilitation skills
- Fine for simple problems
- Can be easily learned
- **Limited by knowledge in the room!!!**



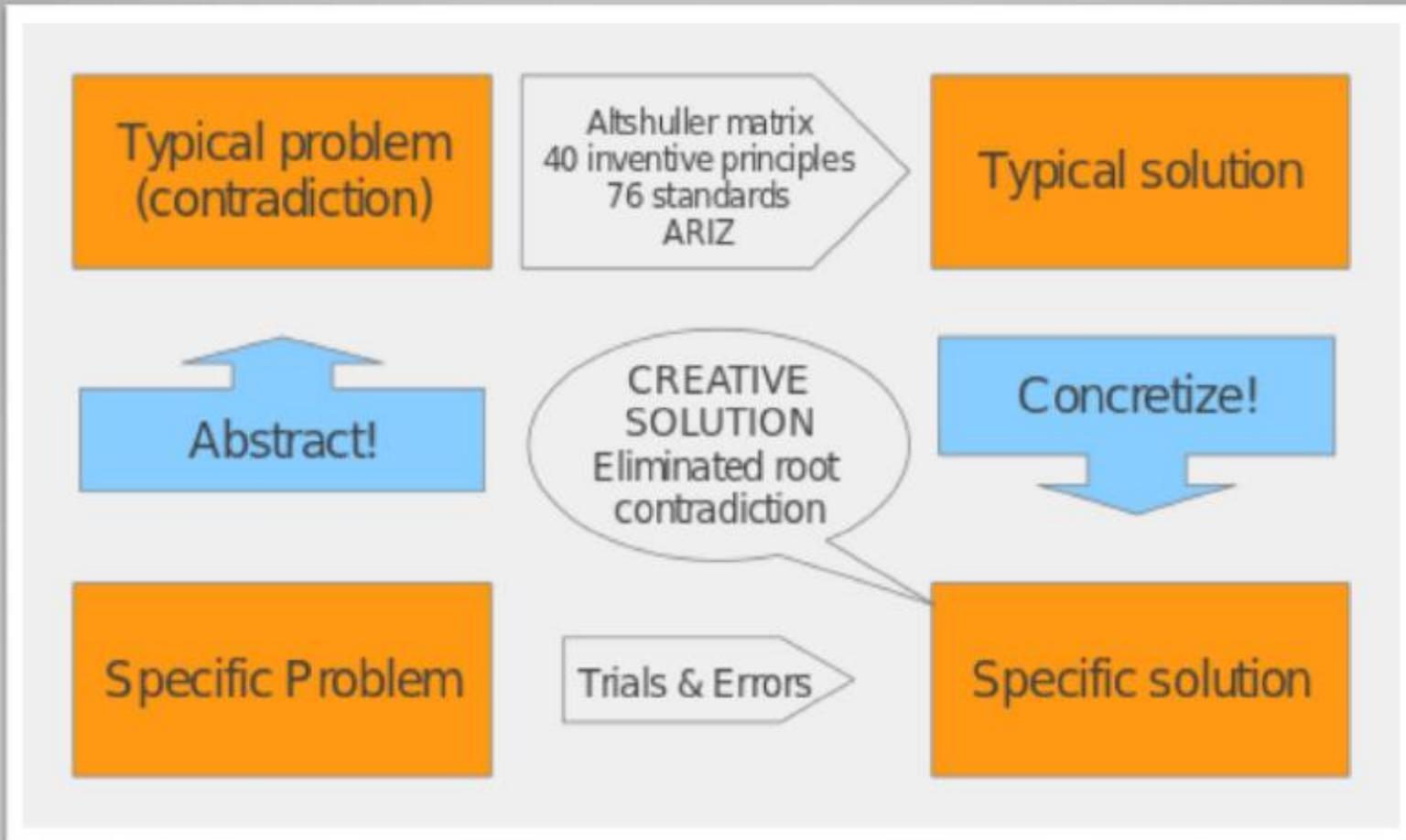
# TRIZ

## Theory for the inventive solution of engineering problems

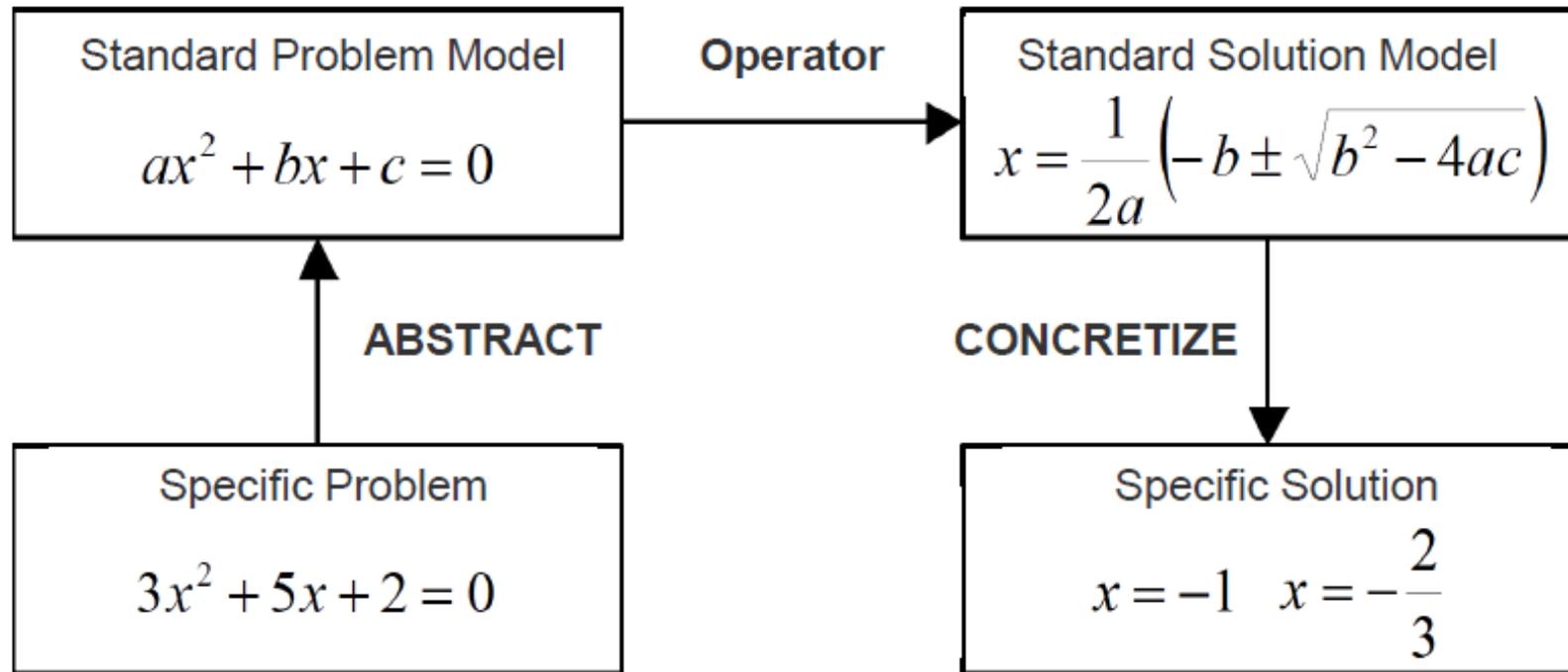
- TRIZ was developed in USSR in the 40's
  - Genrich Altschuller (1926–1998)
- Analyzing hundreds of patents he understood that:
  - Problems and Solutions **transversally repeat** in Industry and Science
  - The Evolution of Technology has a **unique structure** common to all fields of technology and science
  - Innovations use scientific effects coming **from outside** the original technology field



# TRIZ Approach for Creative problem solving



# Example



# TRIZ

## TRIZ understands that:

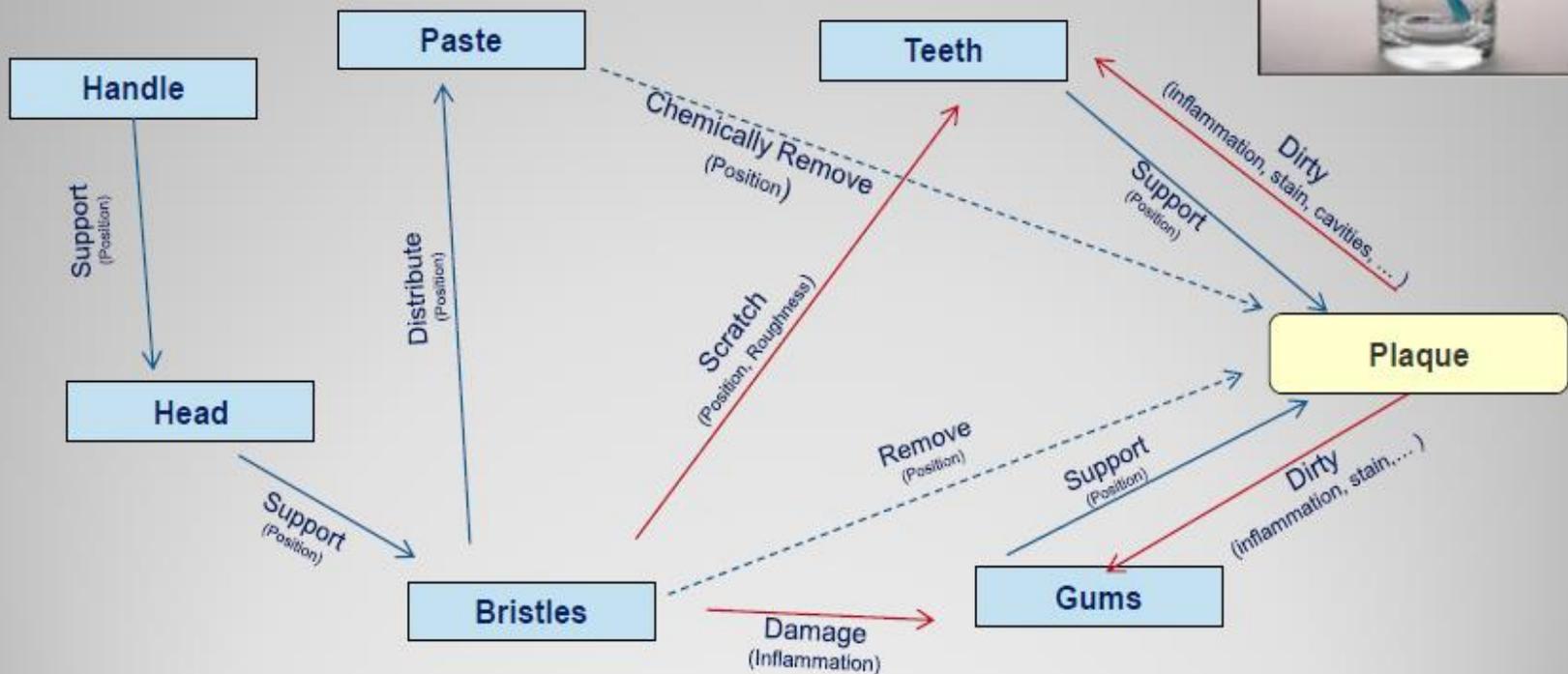
Technological systems  
evolve towards an  
ideal state of perfection by overcoming  
contradictions with the introduction of  
minimal (external) resources.

...that means...

## ***To solve problems in a inventive way, we need to:***

1. disassemble the problem in a model (function analysis)
2. imagine the ideal solution (trimming)
3. identify contradictions and overcome them (TRIZ)

# 1. Problem Model (example)



# Function Model - Basic RULE

A ***function*** directly  
***modifies*** (or maintains)  
a ***parameter*** in the object



## 2. Ideal Final Result (IFR)

The “Ideal Solution” of a problem is what will  
**Maximize functionalities**  
**Minimize costs and problems**

$$\text{Value} = \frac{\text{Functionality}}{\text{Costs} + \text{Problems}}$$

It DOES NOT EXIST as a physical entity, it EXISTS as a functionality

# Ideal Solution



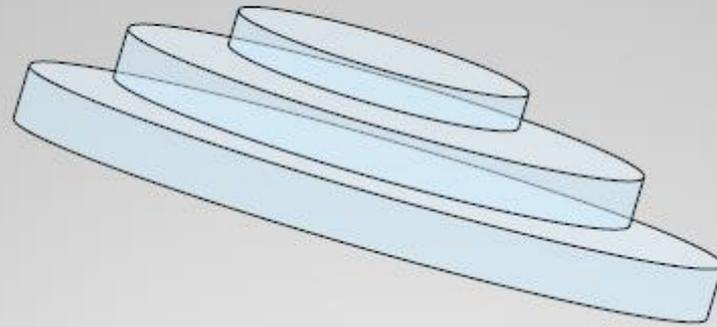
# Example

- Skeet shooting. During skeet shooting games, small disks of clay are launched.



- *After the shooting, target debris need to be collected; this is an expensive operation*

# Ideal Solution



*Ice target*

- Target dissolves by itself

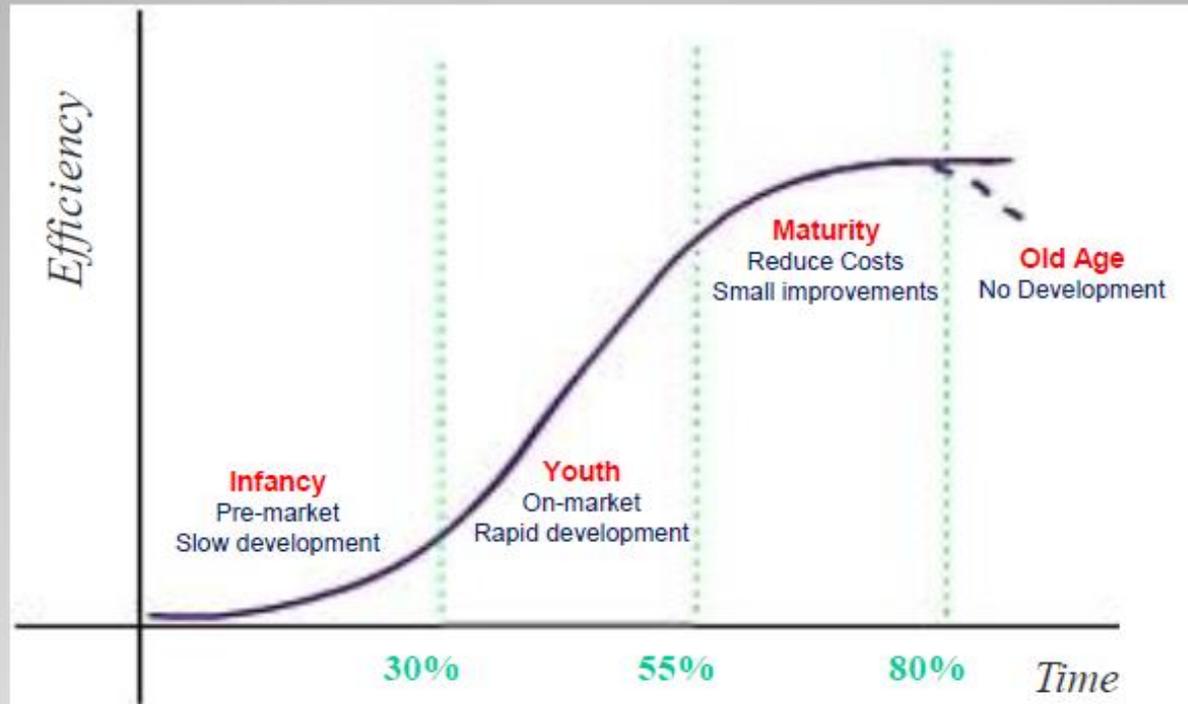
# Laws of evolution

## *The S-Curve*

- IFR (Ideal Final Result) is not a fixed point  
It will always move forward as soon as the technology will be close to reach it.
- When the technology reaches the end of its life, a new technology will take its place in the evolution.

# Laws of evolution

*The S-Curve - Genrich Altshuller and Vladimir Petrov 1973-1984*



Genrich Altshuller and Vladimir Petrov 1973-1984



No! I can't be bothered by any crazy **INNOVATOR**.  
We've got a battle to fight!



# Creativity Analysis

## Some Ideas

- AI vs Autonomous driving
- Natural language communication
- Long life batteries (Graphene Supercondensator)
- Automatic recharge management
- Rooftop renewable energy opportunity
- Emergency detection
- State of driver control
- ...

The Netflix logo, consisting of the word "NETFLIX" in a bold, red, sans-serif font, is positioned in the top-left corner of the slide against a black background.

# Creativity Analysis

## Some Ideas

- Connecting relating content
- Natural language commands
- Alternative views (football matches, F1, ...)
- Forecast profiling
- Selective bookmarking
- MP4 vs MP?
- ...

# amazon Creativity Analysis

## Some Ideas

- Use other peoples similar buying trends to propose purchases
- Offer Amazon Prime free to people who buy at least six items in one year (with refund of delivery already paid)
- Special discounts for lower income families (poor)
- Charity donation options for higher cost purchases (public image)
- Pay taxes in the countries where purchases are made (public image)
- ...



# Creativity Analysis

## Some Ideas

- Introduce local digital centers for encouraging socially responsible use of technology
- Let phones recognize which finger is being used (finger print) for different functions
- Introduce a rotating orientable camera hardware with object detection and automatic tracking
- 2 headphone sockets !!
- Allow 3D picture building from twinned mobile phones
- ...

# Today's Case Study Objectives

- Case study session
  - Case analysis in groups
    - Innovation Strategy – Discuss and Plan
    - Creativity brainstorming – Use mind mapping to design your Innovation Strategy