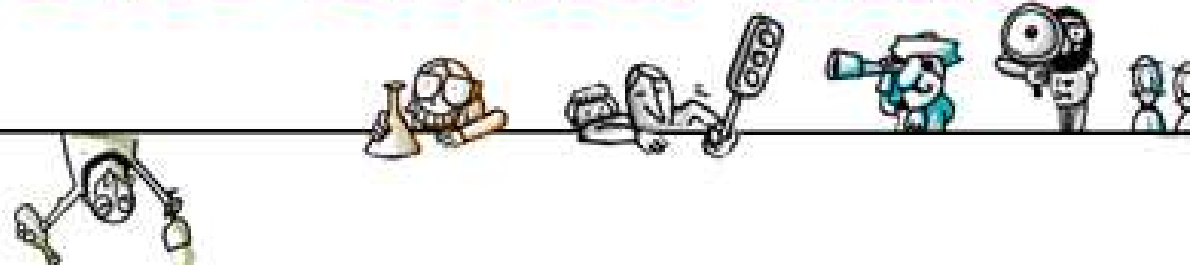# CT436
Advanced Professional Skills

WEEK 1: INTRODUCTION TO CT436

Dr. Owen Molloy

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TOP 10 SKILLS FOR 2025	
1. Analytical thinking and innovation	6. Leadership and social influence
2. Active learning and learning strategies	7. Technology use, monitoring and control
3. Complex problem solving	8. Technology design and programming
4. Critical thinking and analysis	9. Resilience, stress tolerance and flexibility
5. Creativity, originality and initiative	10. Reasoning, problem solving and ideation

Table 1: Top 10 Skills. Source: WEF Future of Skills 2025

https://www.weforum.org/agenda/2020/10/top-10-work-skills-of-tomorrow-how-long-it-takes-to-learn-them/

Innovation is the cornerstone of sustained economic growth and prosperity

Address a challenge Achieve value

Innovation - using new technology and new ways of thinking to add value to an existing idea or product and to make substantial changes in society

4 MISINTERPRETATIONS OF INNOVATION

1. Innovation = Invention

An invention is a creative idea while an innovation makes that idea feasible and turns it into a product or service that satisfies customers' needs
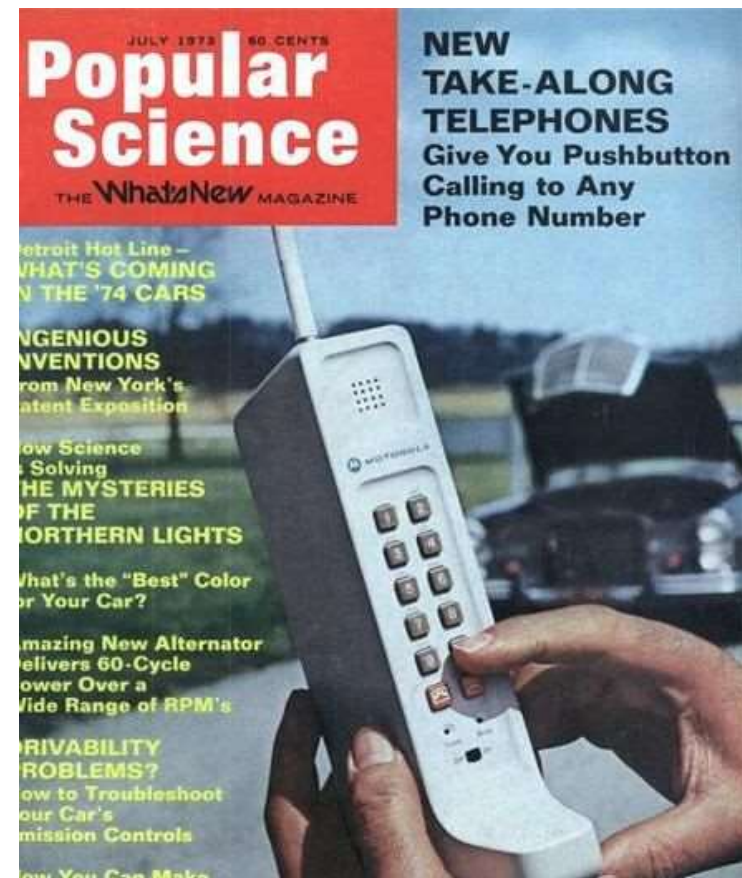
TOP 10 INVENTIONS

What did it take to get them from the 'lab' into everyday use?

- Printing press
- Light bulb
- Airplane
- Personal computer
- Vaccines
- Automobile
- Clock
- Telephone
- Refrigeration
- Camera

- Did the mobile phone create a need in the market?

1973 – Martin Cooper – Motorola – cellular technology -New York
11 inches high, 1 1/2 inches across, and 4 inches deep weighing 2.5pounds

NOT JUST THE PHONE

- Infrastrcture

- Technology

- Capacity

- Ireland – first mobile service – 1985

MISINTERPRETATIONS OF INNOVATION

Innovation = New Products AND / OR Services)

Innovation has rightly been associated with many cases of new product development,
however, innovation can concern other new developments e.g. new markets or new marketing methods

In 1968, Dr. Spencer Silver, a scientist at 3M in the United States, was attempting to develop a super-strong adhesive. Instead he accidentally created a "low-tack," reusable, pressure-sensitive adhesive
1979
1980 USA
1981 - EU

1979

NEW DEVELOPMENT E.G. NEW MARKETS OR NEW MARKETING METHODS

Introduced in 1930 for the Industrial packaging market - 3M's adhesive tape

MISINTERPRETATIONS OF INNOVATION

Innovation = original

Innovation often builds on old existing ideas and resources

For example, originally introduced in 1930 for the Industrial packaging market, the Scotch Tape was later resold as Sellotape (complete with tape and dispenser) as an office commodity.

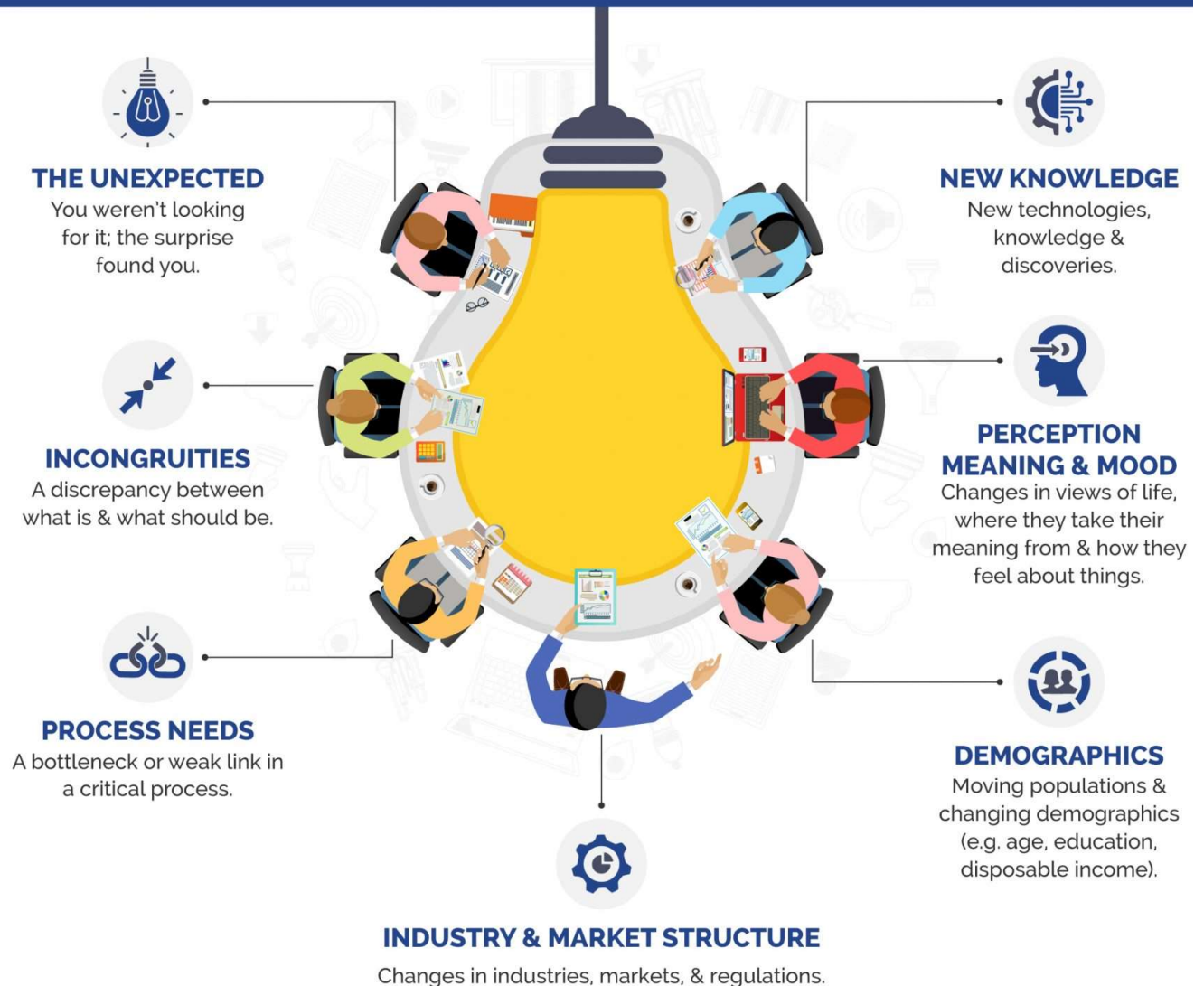# MISINTERPRETATIONS OF INNOVATION

Innovation = one off inspiration

Unlike the one sudden flash of inspiration, innovation is a gradual process that takes place over a period of time (or incubation)

SOURCES OF INNOVATION

- Innovators are generally attentive to changes which give them clues to what opportunities may come in future

DRUCKER'S
7 SOURCES OF INNOVATION

THE UNEXPECTED
You weren't looking for it; the surprise found you.

NEW KNOWLEDGE
New technologies, knowledge & discoveries.

INCONGRUITIES
A discrepancy between what is & what should be.

PERCEPTION MEANING & MOOD
Changes in views of life, where they take their meaning from & how they feel about things.

PROCESS NEEDS
A bottleneck or weak link in a critical process.

DEMOGRAPHICS
Moving populations & changing demographics (e.g. age, education, disposable income).

INDUSTRY & MARKET STRUCTURE
Changes in industries, markets, & regulations.

Source: Peter Drucker's book Innovation & Entrepreneurship (198

KRISTIN ARNOLD | LEADING THE EXTRAORDINARY TEAM.

www.ExtraordinaryTeam.com

SUMMARY OF SOURCES OF INNOVATION

- Would-be innovators must also go out and look, ask, and listen

- Above all, innovation is work rather than genius

- It requires knowledge. It often requires ingenuity. And it requires focus

Change is the only constant in life (Heraclitus)

TYPES OF INNOVATION

Type	Description
Invention	Totally new product, service, or process
Extension	New use or different application of an already existing product, service, or process
Duplication	Creative replication of an existing concept
Synthesis	Combination of existing concepts and factors into a new formulation or use

The Rolling Bench

After a rainy day, this is the place for you!
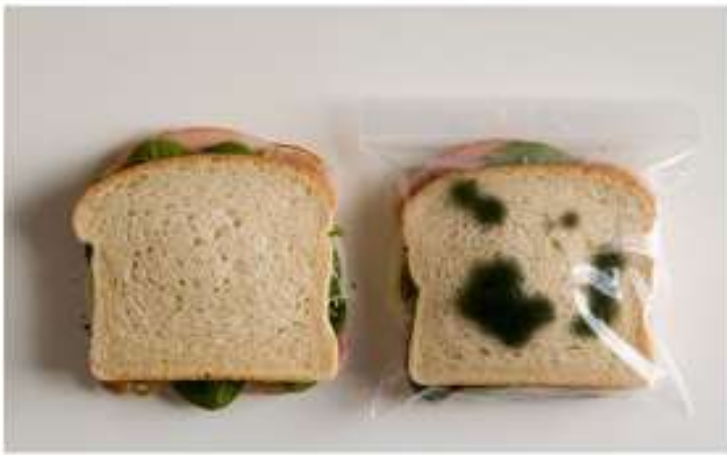
DEFINE THE INNOVATION TYPE

Are you creative?

Creative thinking has been a buzzword for quite some time, but in today's climate, it relates to personal and corporate survival

Problems – questions - innovations

Business leaders: creative thinkers ?

Businesses that invest in creativity are more likely to increase employee productivity by 73% and foster innovation by 83%

Creativity is the process of

- Problem Finding & Solving
- Relevance
- Value
- Novelty

Calf Feeder Bucket Round
€9.95

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ENTREPRENEURSHIP

Creation of new businesses

….trying is the first step towards failure

Homer Simpson

WHAT IS ENTREPRENEURSHIP?

It has the ability to improve standards of living and create wealth

- The formation of a new venture that produces a product/offering that creates some value to make it economically sustainable

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In contemporary markets, entrepreneur act as:

innovators or developers who identify and capture opportunities

transform the opportunities into merchandisable concepts

create value through multiple stakeholders and resources

take risks whilst seeking rewards for their ventures and efforts (Kuratko, 2016)

Entrepreneurship is an "act of establishing a new venture" Christensen et al, (2000, p.4)

However, "an entrepreneurial organisation is that which pursues opportunity, regardless of resources currently controlled" Stevenson & Jarillo (1990, p.23).

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ENTREPRENEURIAL PROCESS

Identify an opportunity

Establish a vision

Persuade others

Gather resources

Create new venture, product or market

Change/adapt with time

Further Refinement of this Definition

Entrepreneurship

SME Revenue, Cash Flow, Jobs over Time

Revenue / Cash Flow / Jobs

time
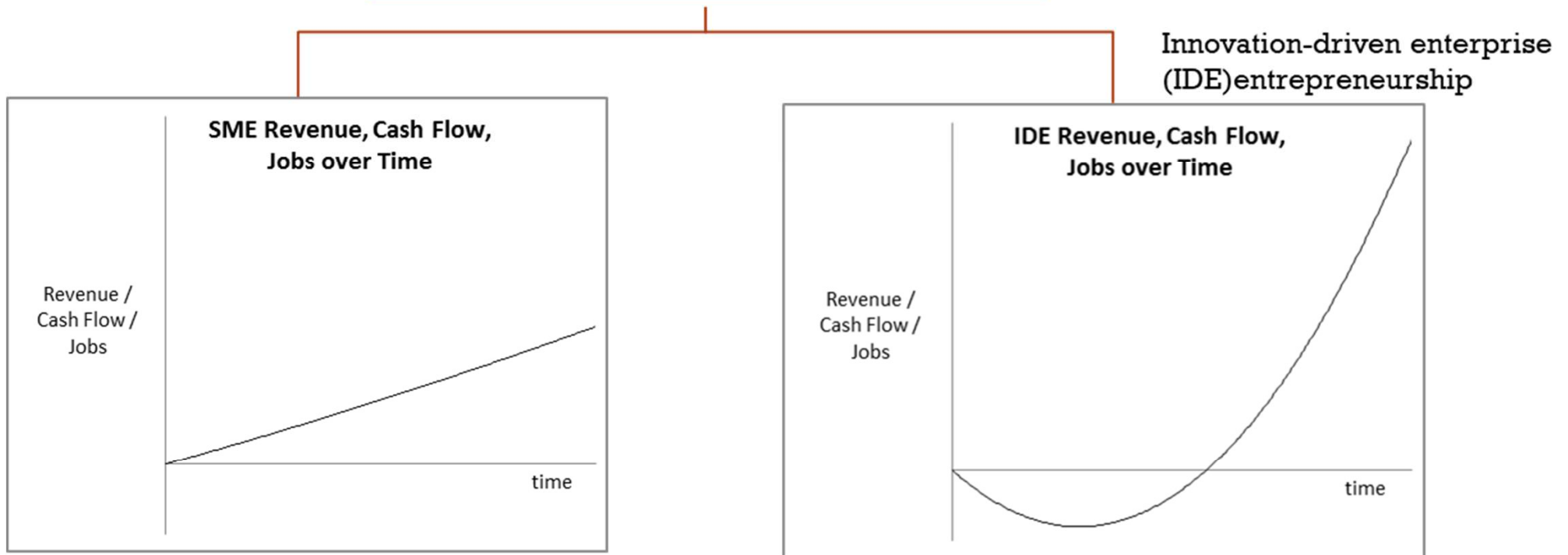
- Δt is short
- Linear growth (capped)
- Less investment required

Innovation-driven enterprise (IDE) entrepreneurship

IDE Revenue, Cash Flow, Jobs over Time

Revenue / Cash Flow / Jobs

time

- Δt is long
- Exponential growth (uncapped)
- A lot of investment required

- The formation of a new venture that produces a product/offering that creates some value to make it economically sustainable

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CAN ENTREPRENEURSHIP BE TAUGHT?
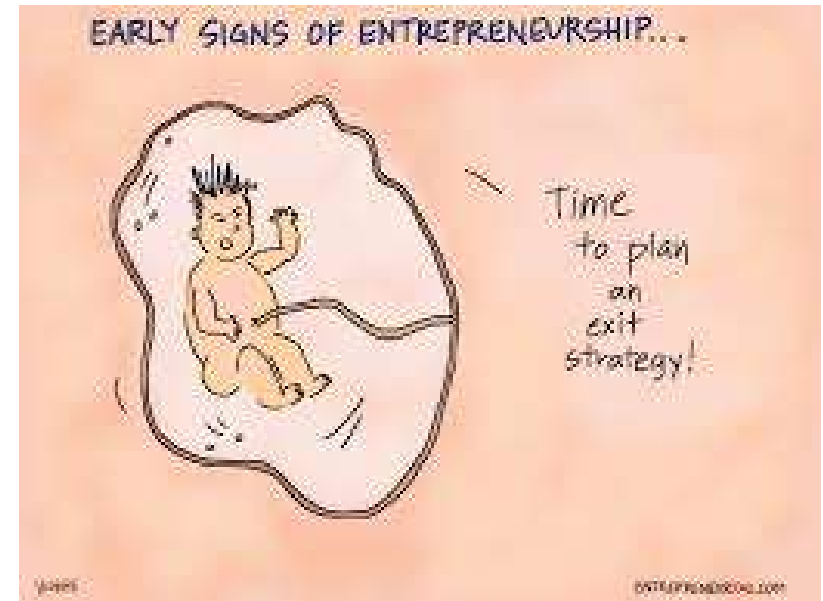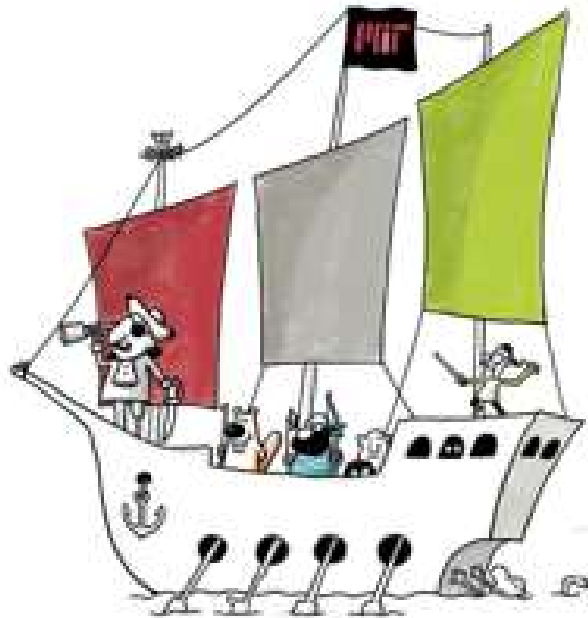
THE TRUTH
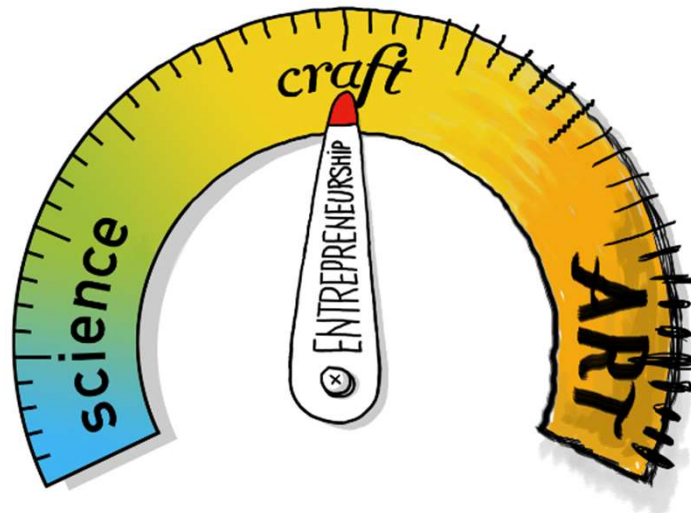
THE TWO ENDS
OF THE SPECTRUM

SUCCESSFUL ENTREPRENEURSHIP

Spirit
of a pirate

+

Skills
of a Navy Seal
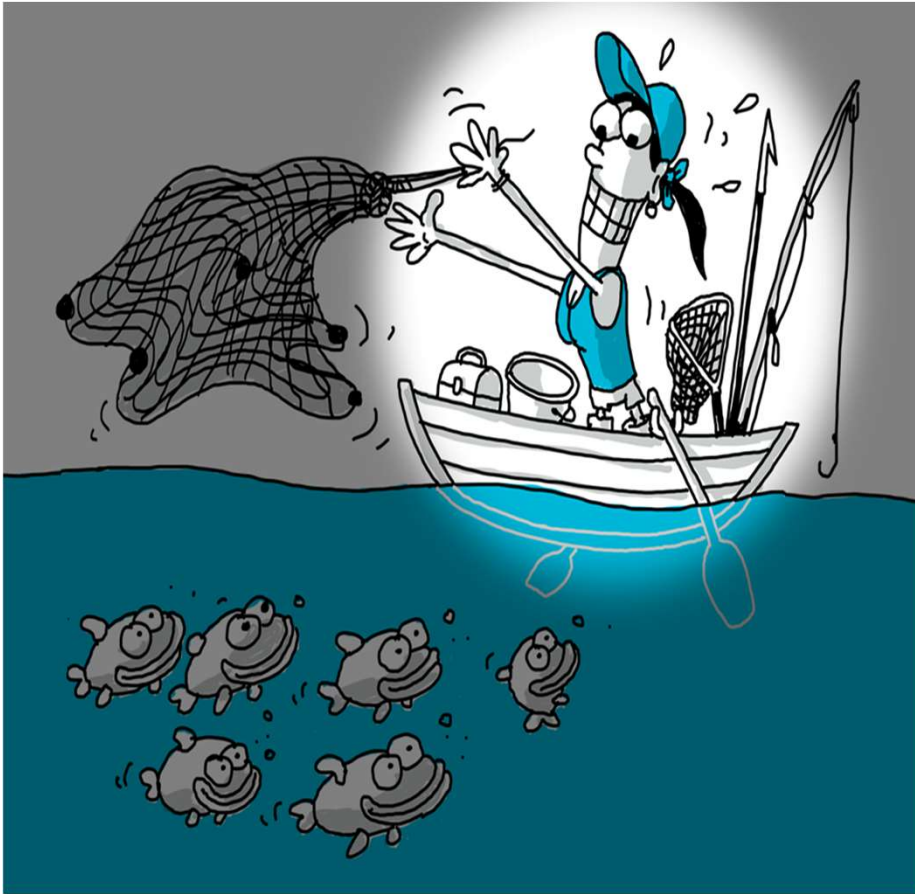
Spirit + Skills

OBJECTIVES OF THE COURSE

**PRIMARY GOAL IS
NOT TO GIVE A FISH**

Chinese proverb

OBJECTIVES OF THE COURSE

PRIMARY GOAL IS <u>TO TEACH</u> HOW TO FISH

INNOVATION

"New, organic value creation by applying creativity, in-depth relationships with consumers and customers, and new thinking"
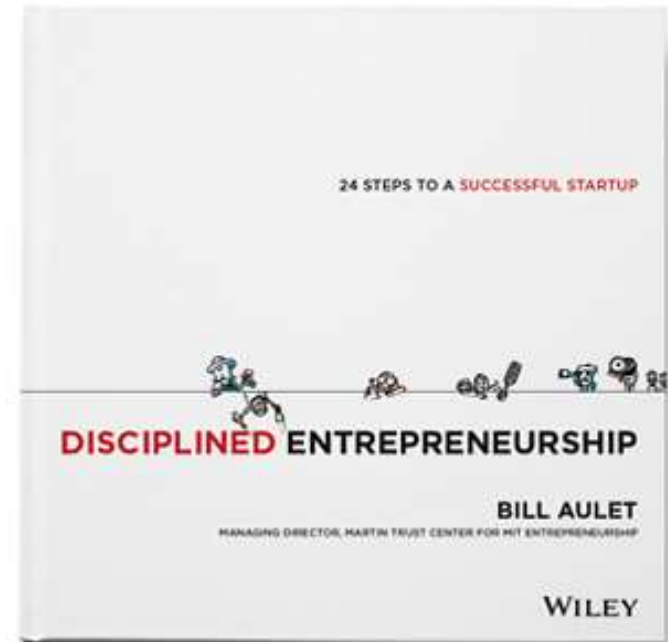
Innovation = Invention*Commercialization

MOST USEFUL BOOK

DISCIPLINED ENTREPRENEURSHIP

- Substantially increases your odds of success

- Provides more structure to one of the two critical elements in starting a company

- Common language

- Identifies questions & weak points

24 STEPS TO A SUCCESSFUL STARTUP

DISCIPLINED ENTREPRENEURSHIP

BILL AULET
MANAGING DIRECTOR, MARTIN TRUST CENTER FOR MIT ENTREPRENEURSHIP

WILEY

WORK ON AN IDEA THAT YOUR TEAM IS EXCITED ABOUT

- You will enjoy the class a lot more and will gain much better understanding of the material

- Take the ideation and team formation phase very seriously- it can greatly determine your experience with the class

- If you find that your idea hits a dead end, do not be afraid to change it mid-way through the semester!

WHAT DO YOU NEED TO START A SUCCESSFUL NEW VENTURE?

1. Idea

2. Team

3. Process

IMAGINE...

- You are Thomas Edison

- You have just invented the light bulb

- Now build a plan for a business - How would you do this?

- ## What is the problem?
- ## Who is the market?
- ## What is the competition?
- ## What is your USP?

GOOD ENTREPRENEURIAL BUSINESS IDEAS ARE:

Market Driven

- Solve a problem
  - Find a market need
  - Customer focused not product driven

- Targets an identified sizeable market segment

GOOD ENTREPRENEURIAL BUSINESS IDEAS ARE:

Feasible

- Attractive – there is a demand

- Achievable – it can be done

- Durable – it lasts

- Value creating – it is worth something

- Safe

- Affordable

GOOD ENTREPRENEURIAL BUSINESS IDEAS ARE:

Unique

- Faster/Better/Cheaper

- Differentiated (vs. commodity)

- They have a "Special Sauce"

GOOD ENTREPRENEURIAL BUSINESS IDEAS ARE:

Fundable

- Revenue stream

- Manageable risk

- Sustainable - Market exists with frequency of purchase

- Scaleable or Replicable

- Barriers to entry

- Growth potential

- Product pipeline

- Exit plan

- Innovative

GOOD ENTREPRENEURIAL BUSINESS IDEAS ARE:

Innovative

Invention	Totally new product/service/process
Extension	New use or different application of an already existing product/service/process
Duplication	Creating a replication of an existing concept
Synthesis	Combining existing concepts and/or factors into a new formula for use

39 WORKING IN TEAMS!

Which team would you prefer to work in?

40

GOOGLE PROJECT ARISTOTLE

Teams have a collective I. Q.

Two behaviors that good teams generally shared:

- members spoke in roughly the same proportion i.e. "equality in distribution of conversational turn-taking"
- members all had high "average social sensitivity" i.e. skill at intuiting how others felt based on their tone of voice, their expressions and other nonverbal cues etc.

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1 Psychological Safety
Team members feel safe to take risks and be vulnerable in front of each other.

2 Dependability
Team members get things done on time and meet Google's high bar for excellence.

3 Structure & Clarity
Team members have clear roles, plans, and goals.

4 Meaning
Work is personally important to team members.

5 Impact
Team members think their work matters and creates change.

re:Work

PSYCHOLOGICAL SAFETY

A sense that people will not be embarrassed or punished for speaking up.

TEDxHGSE

x = independently organized TED event

Translator: Gabriela Imhoff
Reviewer: Peter van de Ven

Play (k)

0:01 / 11:26

https://www.youtube.com/watch?v=LhoLuui9gX8

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WAYS TO START A NEW VENTURE
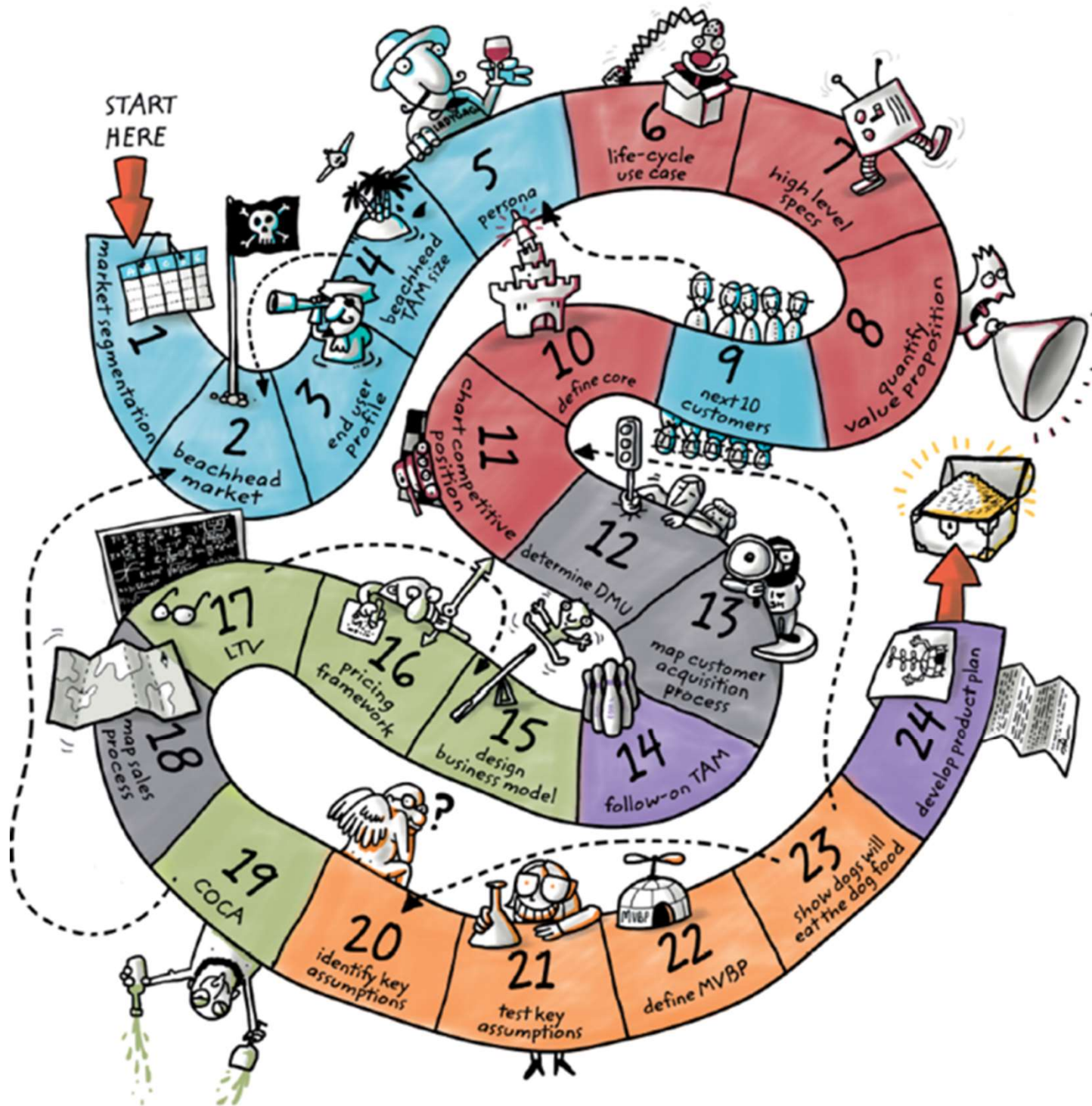
WHAT YOU NEED....

1. Idea
2. Team
3. Process

Process – e.g. Disciplined Entrepreneurship (Bill Aulet, MIT)

WHO IS YOUR CUSTOMER?

1 Market Segmentation

2 Select a Beachhead Market

3 Build an End User Profile

4 Calculate the TAM Size for the Beachhead Market

5 Profile the Persona for the Beachhead Market

9 Identify Your Next 10 Customers

WHAT CAN YOU DO FOR YOUR CUSTOMER?

6 Full Life Cycle Use Case

7 High-Level Product Specification

8 Quantify the Value Proposition

10 Define Your Core

11 Chart Your Competitive Position

HOW DOES YOUR CUSTOMER ACQUIRE YOUR PRODUCT?

12 Determine the Customer's Decision-Making Unit (DMU)

13 Map The Process to Acquire a Paying Customer

18 Map the Sales Process to Acquire a Customer

HOW DO YOU MAKE MONEY OFF YOUR PRODUCT?

15 Design a Business Model

16 Set Your Pricing Framework

17 Calculate the Lifetime Value (LTV) of an Acquired Customer

19 Calculate the Cost of Customer Acquisition (COCA)

HOW DO YOU DESIGN & BUILD YOUR PRODUCT?

20 Identify Key Assumptions

21 Test Key Assumptions

22 Define the Minimum Viable Business Product (MVBP)

23 Show That "The Dogs Will Eat the Dog Food"

HOW DO YOU SCALE YOUR BUSINESS?

14 Calculate the TAM Size for Follow-on Markets

24 Develop a Product Plan

MODULE OUTPUTS
(EXACT ORDER AND DETAILS TBD)

- Each team will maintain on online portfolio documenting their journey and linking with / containing their deliverables:
  - Idea Generation
  - Market Segmentation / Analysis
  - End-User Profiling
  - Customer Persona
  - Life-Cycle Use Case
  - Quantified Value Proposition
  - Product Brochure
  - Business Model Canvas / Business Plan
  - Video

- Submit video to EI student Entrepreneur awards

- Attendance

FOR THIS FRIDAY 1PM

Email to me (owen.molloy@universityofgalway.ie):

- Team name
- Team members + Student IDs

I will create team groups on Canvas

3-5 members/group
5 max

END