



Università degli Studi di Cagliari

# Innovation Management

Economia Manageriale - International Management

What is innovation? II

# Who we are today?



- Enhancing the class climate: «Defining innovation» teamwork II, III, IV and V
- Toward a multidimensional definition of Innovation and surrounding concepts
- The impact of innovation on society
- Syllabus and Exams Q&As

# Definitions of innovation



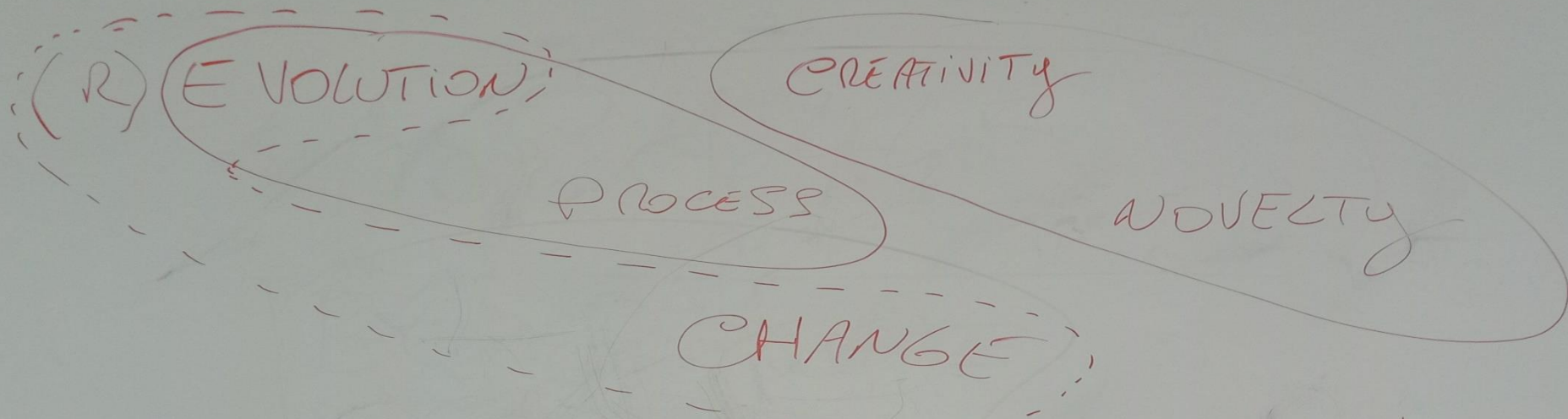
So...What is innovation?

- Duration: about 20'-25'
- International teams (Preferably 3 members)
- Use of the book and all devices is **NOT** permitted.
- Begin by “exploiting” your personal knowledge and then share

# Teamwork activity (25')



- I. Think of one word that better defines innovation
- II. Coin a definition of innovation using that one word
- III. Please, send me the definitions you coined at: [manuel.castriotta@unica.it](mailto:manuel.castriotta@unica.it)
- IV. Pitch and share



A creative evolution that adapts to rapid changes and necessities

New, easier and relevant way of doing something that improves an already existing process providing benefits.

A Motivation or drive to change the environment or reality, whether it's good or bad  
 Introduce novelty to cope with existing challenges and/or enhance current state-of-art.

Innovation is a continuous process influenced by environment and capacity of the actors involved

# Teamwork activity (25')



Think of one word that better defines innovation:

- Creative evolution, adaptation, rapid changes
- New..., an already existing process
- A motivation or drive
- Novelty, existing challenges, state of the art
- Continuous process influenced by capacity of involved actors

# Teamwork activity



From which point of view did you participate in the exercise?

Have you been an entrepreneur, a manager or a finance expert?

# Teamwork activity II (20-25')



- I. Now, the group members have different roles
- II. For example, Head of R&D, marketing, production, supply chain, accounting, finance, human resources, production, design...
- III. Repeat the task, and coin another definition of innovation
- IV. Please, send me the definitions you coined at: [manuel.castriotta@unica.it](mailto:manuel.castriotta@unica.it)
- V. Pitch and share

**Are innovators born or  
become?  
Discussion...**

# Lesson learned?



- I. What exactly is the meaning of the often used term innovation?
- II. Do you think you're more conscious/aware of innovation now?
- III. How have your definitions changed over time?
- IV. ...?

# What is innovation?



## **Preliminary definition of innovation:**

**A process of intentional change made to create value by meeting opportunity and seeking advantage. It is the commercialization of a novel idea.**

# What is innovation?



- **Process:** Innovation is a process (implying, among other things, that it can be learned and managed)
- **Intentional:** That process is carried out on purpose
- **Change:** It results in some kind of change
- **Value:** The whole point of the change is to create value in our economy, society and/or individual lives
- **Opportunity:** Entrepreneurial individuals enable tomorrow's value creation by exploring for it today

# What is innovation?



- **Advantage:** At the same time, they also create value by exploiting the opportunities they have at hand
- **Commercialization:** having ideas, turning ideas into marketable insights and seeking ways to meet opportunities

# What is innovation?



## **Preliminary definition of innovation:**

A process of intentional change made to create value by meeting opportunity and seeking advantage. It is the commercialization of a novel idea.

# Teamwork activity IV



- I. Draw an image of what innovation is.
- II. Each group have to present their pictures.



# Teamwork V (5')



What is the most creative endeavor you have launched or assisted in the creation of?

# Lesson learned?



- I. What exactly is the meaning of the often used term innovation?
- II. Do you think you're more conscious/aware of innovation now?
- III. How have your definitions changed over time?
- IV. ...?

# What is innovation?



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# What is innovation?



## **Preliminary definition of innovation:**

A process of intentional change made to create value by meeting opportunity and seeking advantage. It is the commercialization of a novel idea.

Innovation is conceived as a means of changing an organization, either as a response to changes in the external environment or as a pre-emptive action to influence the environment.

Hence, innovation is here broadly defined to encompass a range of types, including new product or service, new process technology, new organization structure or administrative systems, or new plans or program pertaining to organization members.

# What is innovation? Gault, 2018



An innovation is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organization or external relations.

# What is innovation? Gault, 2018



- A product innovation is a product, made available to potential users, that is new or significantly changed with respect to its characteristics or intended uses.
- A production or delivery innovation is the implementation of a new or significantly changed production or delivery process. This includes significant changes in inputs, infrastructure within the institutional unit, and techniques.
- An organisational innovation is the implementation of a new or significantly changed organisational method in the business practice, workplace organisation or external relations of the institutional unit.
- A marketing/communication innovation is the implementation of a new or significantly changed method of promoting products of the institutional unit.

# What is innovation? Windrum, 2008



- 1. Services innovation
- 2. Service delivery innovation
- 3. Administrative or organisational innovation
- 4. Conceptual innovation
- 5. Policy innovation
- 6. Systemic innovation

Ultimately some 60 definitions of innovation were collected from the various disciplinary literatures, as shown in the following:

- . Business and management: 18 definitions from 1966 to 2007.
- . Economics: nine definitions from 1934 to 2004.
- . Organization studies: six definitions from 1953 to 2008.
- . Innovation and entrepreneurship: nine definitions from 1953 to 2007.
- . Technology, science and engineering: 13 definitions from 1969 to 2005
- ...

# What is innovation? Baregheh et al., 2009



	Business and management	Economy	Innovation and entrepreneurship	Technology/science/engineering	Knowledge management	Marketing	Organization study
Nature	New, 16 Change, 4	New, 24 Improved, 4	New, 10 Change, 2	New, 11 Challenge, 2 Change, 2	New, 2 Improve, 1	New, 3 Change, 2 Improve, 1	New, 4
Type	Product, 7 Process, 5 Service, 5 Program, 2	Product, 9 Process, 6 Service, 3 Technical, 3	Product, 4 Service, 4 Technical, 3	Product, 10 Service, 8 Process, 7 Technical, 3	Product, 2 Incremental, 1 Process, 1 Radical, 1 Service, 1 Technical, 1 Creation, 2	Product, 2 Process, 1 Service, 1	Product, 4 Process, 3 Service, 3
Stages	Adoption, 3 Creation, 4 Design, 2 Implementation, 2 Development, 2	Production, 4 Introduction, 3 Manufacturing, 3 Development, 2 Commercialization, 3	Generation, 3 Application, 2 Development, 2 Implementation, 2 Acceptance, 1 Creation, 1	Adoption, 7 Development, 3 Generation, 7 Implementation, 2 Introduction, 2 Commercialization, 4 Creation, 2 Organization, 12	Decision, 1 Design, 1 Development, 1	Learning, 1 Communication, 1	Adoption, 3 Application, 2 Development, 2 Program, 2
Environment	Organization, 7 Firm, 6 Customer, 2 Developer, 2 External, 2 System, 2 Users, 2	Organization, 2 Actor, 1 Consumer, 1 Customer, 1 Social system, 1	Organization, 2 Users, 2 Customers, 1 Employee, 2	Organization, 12	Group, 1 Internal, 1 Organization, 1	Organization, 1	Firm, 5 Organization, 4 Group, 2 Unit, 2
Means	Idea, 5 Resource, 4 Invention, 3 Technology, 3 Investment, 2 Market, 2 Creativity, 1	Economy, 2 Equipment, 2 Idea, 2 Industry, 2 Market, 2 Technology, 2	Idea, 5 Creativity, 5 Invention, 2 Innovativeness, 1	Market, 6 Technology, 6 Creativity, 4 Invention, 4 Idea, 2 Innovativeness, 1	Knowledge, 2 Idea, 1 Market, 1	Technology, 1 Invention, 1	Idea, 3 Innovativeness, 3
Aims	Superior, 4 Advantage, 2 Value, 2 Competition, 2 Influence, 2 Sustain, 2 Differentiation, 2	Economic, 2 Compete, 3	Economy, 2 Need, 2 Compete, 2 Success, 2	Economic, 2 Success, 2 Differentiation, 1	Business, 1	Superior, 1	

# What is innovation? Baregheh et al., 2009



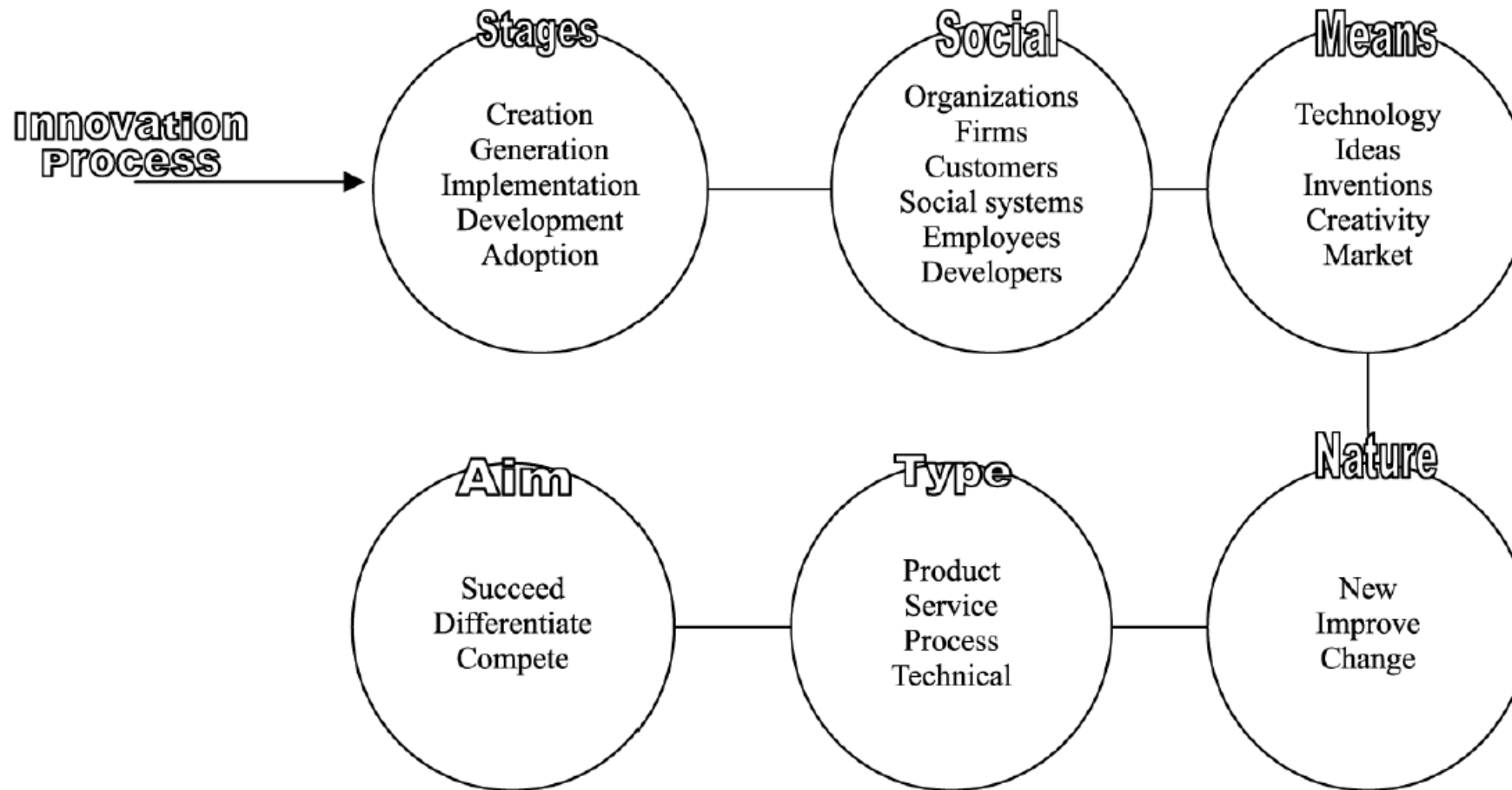
Attribute	Word frequency count
Nature of innovation	New, 76 Change, 10
Type of innovation	Improve, 6 Product, 40 Service, 25 Process, 23 Technical, 10
Aim of innovation	Competition, 7 Success, 6 Economy, 6 Superiority, 5 Differentiation, 3 Advantage, 2
Social context	Value, 2 Organization, 29 Firm, 11 Customer, 4 Group, 3 Unit, 2 Developer, 2 Employee, 2 External environment 2 Social system, 2 Workforce, 1 Consumer, 1
Means of innovation	Internal environment, 1 Idea, 22 Invention, 12 Technology, 12

Summary of attributes frequency

Type of innovation, 98  
Nature of innovation, 92  
Means of innovation, 69  
Innovation and people, 60  
Stages of innovation, 48  
Aim of innovation, 31

**Table III.**  
Summary of word  
frequencies grouped by  
attributes

# What is innovation? Baregheh et al., 2009



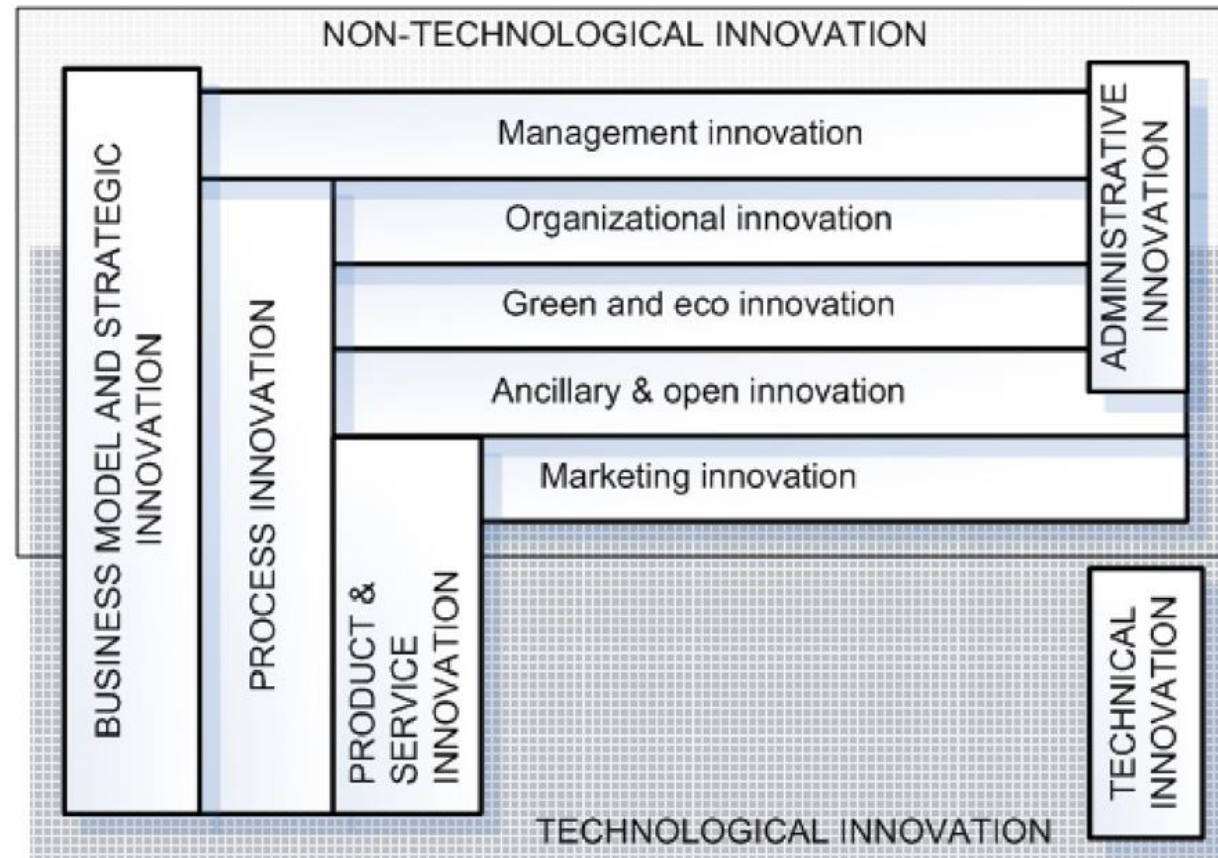
**Figure 1.**  
A diagrammatic definition  
of innovation

Innovation is the multi-stage process whereby organizations transform ideas into new/improved products, service or processes, in order to advance, compete and differentiate themselves successfully in their marketplace.

# What is innovation? Cerne et al., 2016



*M. Černe et al./Scandinavian Journal of Management 32 (2016) 69–85*



**Fig. 5.** Conceptual overlap among the non-technological innovation types identified in the literature review.

# What is innovation?



“Companies achieve competitive advantage through acts of innovation. They approach innovation in its broadest sense, including both new technologies & new ways of doing things”

Michael Porter

# What is innovation?



“Innovation is the specific tool of entrepreneurs, the means by which they exploit change as an opportunity for a different business or service. It is capable of being presented as a discipline, capable of being learned, capable of being practiced”

Peter Drucker



Innovation has to be managed actively

# Invention = innovation?



## INNOVATION ≠ INVENTION

**Invention:** refers to new concepts or products that derive from individual's ideas or from scientific research.

**Innovation:** represents the commercialization of the invention itself.



## **Do you have to invent to innovate?**

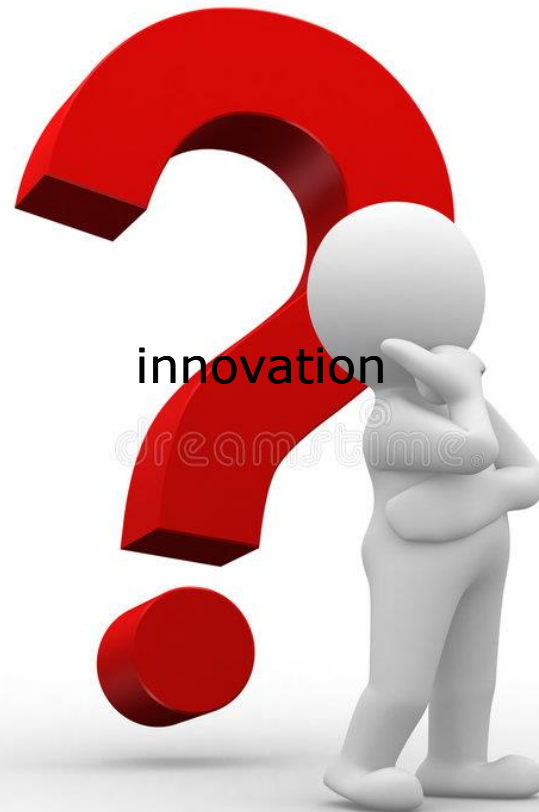
- Innovation is different from invention
- You don't need to invent to innovate

## **Do you have to invent to innovate?**

It is important to have this difference clearly outlined because:

- An invention may have little economic value
- In order to monetize an invention it is necessary to transform it into innovation
- Such transformation is possible once we find a target customer, application or market

# Innovation = creativity



## Do you have to invent to innovate?

**Creativity** is manifested in the production of a creative work (for example, a new work of art or a scientific hypothesis) that is both original and useful.

**Innovation** begins with creative ideas.

- Creativity by individuals and teams is a starting point for innovation; the first is a necessary but not sufficient condition for the second

## **Creativity? Invention? Innovation?**

**Creativity:** It is the capabilities or act of conceiving something original or unusual

**Invention:** It is the creation of something that has never been made before and is recognized as the product of some unique insight

**Innovation:** It is the implementation of something new

Creativity is a concept that is imported to organization management from psychology, where it has been studied primarily at the individual level.

Ford (1996) compared creativity with conformity and proposed a theory of creative individual actions as opposed to habitual individual actions. He defined *creativity* as the outcome of a particular individual action that is judged novel and valuable (Ford, 1996).

Amabile (1988) states that innovation is “creativity plus implementation.” She distinguishes creativity from innovation by relating creativity to the production of novel and useful ideas by individuals and small groups and innovation to the successful implementation of those ideas (Amabile, 1988)...

## **Discovery theory**

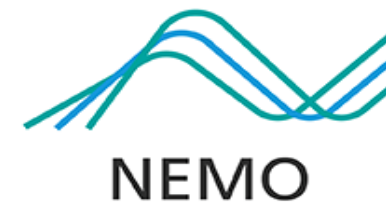
*(Venkarataman and Shane, 1997, 2000, 2012)*

## **Creation theory**

*(Alvarez & Barney, 2007, 2013)*

## **Overlaps or consequentiality?**

## **Why it matter...**







## Chapter 1

# The importance of technological innovation



Technological innovation as driver of competitive success

In many industries technological innovation is now the **single most important driver of competitive success** and because the **pace** of innovation has increased many firms now rely on **products developed within the prior five years** for a large portion of their sales and profits. This period is reduced to **three years** for firms in **fast-paced industries** such as computers, software and telecommunications.

# The importance of technological innovation



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New products and performance

Innovation is also a very powerful driver of **increased effectiveness and efficiency** in producing goods and bringing them to market; firms that do not constantly innovate to make their development, production, and distribution processes more effective and efficient are likely to fall behind their competitors.

# The importance of technological innovation



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Globalization and Innovation

The **globalization of markets** has played a significant role in increasing the importance of innovation as a competitive strategy by increasing competitive pressure.

# The importance of technological innovation



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Innovation and technologies

**Advances in information technology** have also played a role in driving up the pace of innovation. These technologies also help firms to develop and produce more product variants enabling them to **out-focus** their competitors.

Broadening products portfolios and Greater market segmentation

For example, **Toyota produces 21 different passenger vehicle lines, each with several different models** and Samsung introduced 52 unique smartphones in 2014.

# The importance of technological innovation



Rapid product obsolescence – Shortening production life cycles

Adoption of these new technologies has triggered industry-wide shifts to **shortened development cycles** and **more rapid new product introductions**.

Technological innovation now the single most important driver of competitive success in many industries.

- Many firms earn over one-third of sales on products developed within last five years.
- Product innovations help firms protect margins by offering new, differentiated features.
- Process innovations help make manufacturing more efficient.

Advances in information technology have enabled faster innovation.

- CAD/CAM systems enable rapid design and shorter production runs.

Importance of innovation and advances in information technology have lead to:

- Shorter product lifecycles (more rapid product obsolescence).
- More rapid new product introductions.
- Greater market segmentation.

The impact of technological innovation on society

Positive examples

Technological innovation **increases the range of goods and services available** to a society, and the **efficiency of providing them**. For example, innovation has increased the development of new medical treatments and the efficiency of food production.

The impact of technological innovation on society...

Positive examples:

Deliveries, Vaccines, Communication, GDP, Example  
of Innovations in the history

The impact of technological innovation on society...

The **story is not all positive**, however. Sometimes technological innovation results in **negative externalities** such as pollution and medical technologies can have unanticipated consequences.

Innovation enables a wider range of goods and services to be delivered to people worldwide.

- More efficient food production, improved medical technologies, better transportation, etc.
- Increases Gross Domestic Product by making labor and capital more effective and efficient.
- However, may result in negative externalities.
  - For example, pollution, erosion, antibiotic-resistant bacteria.

# The importance of technological innovation



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Social Entrepreneurship and Innovation

# The importance of technological innovation



Technology and knowledge

# The importance of technological innovation



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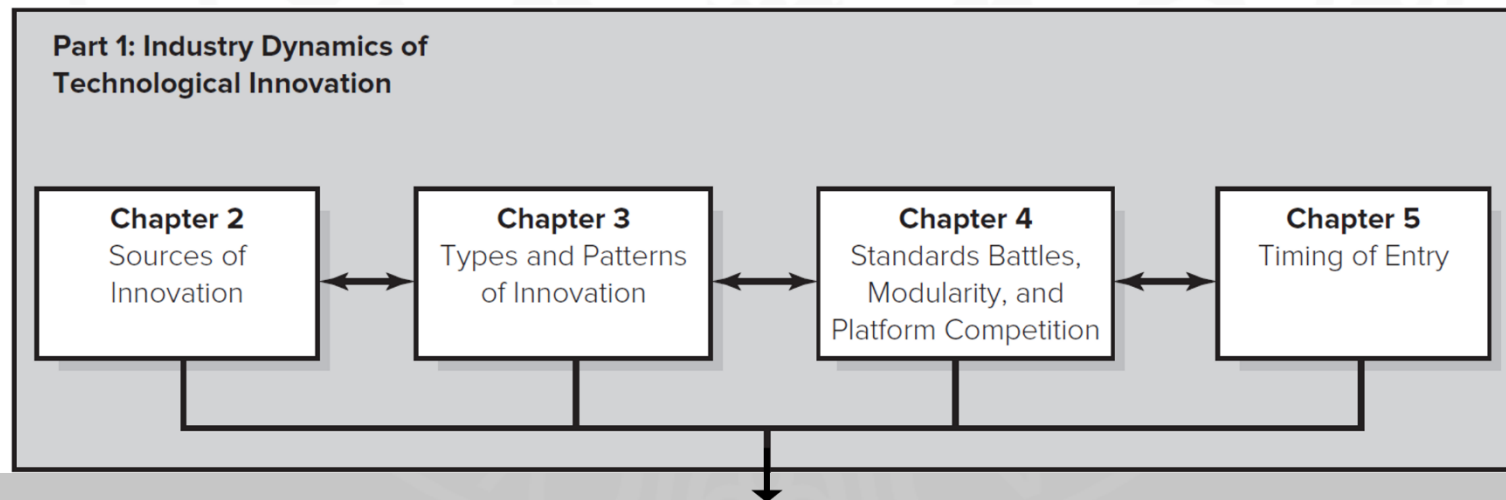
The dark side of innovation

The dark side of innovation

Risk, stress, freewheeling or planning paradox

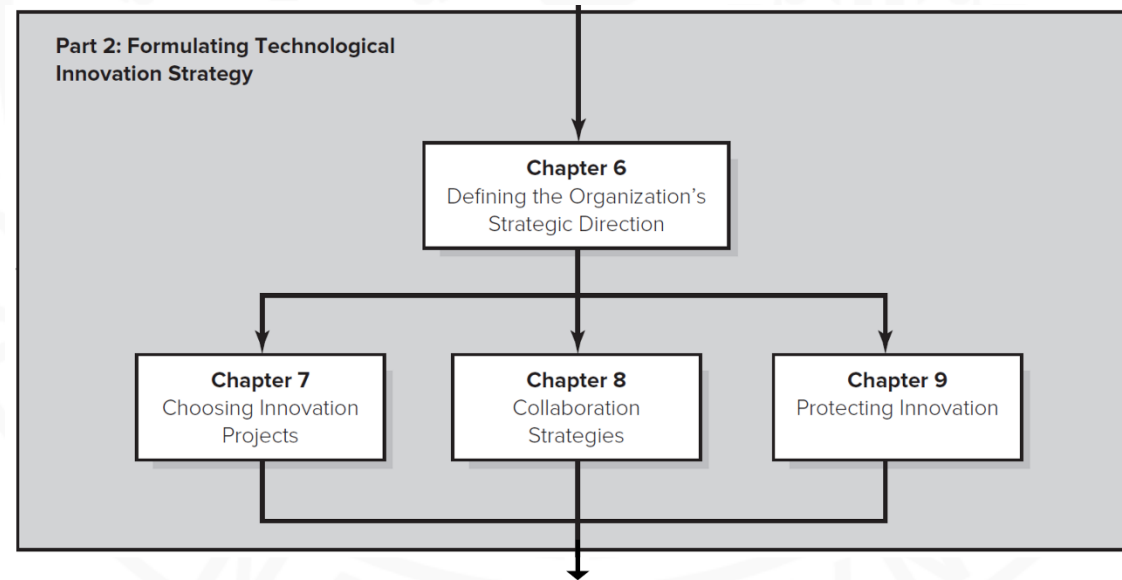
**Part One:** The foundations of technological and non technological Innovation.

- Sources of innovation.
- Types and patterns of innovation.
- Standards battles and design dominance.
- Timing of Entry.



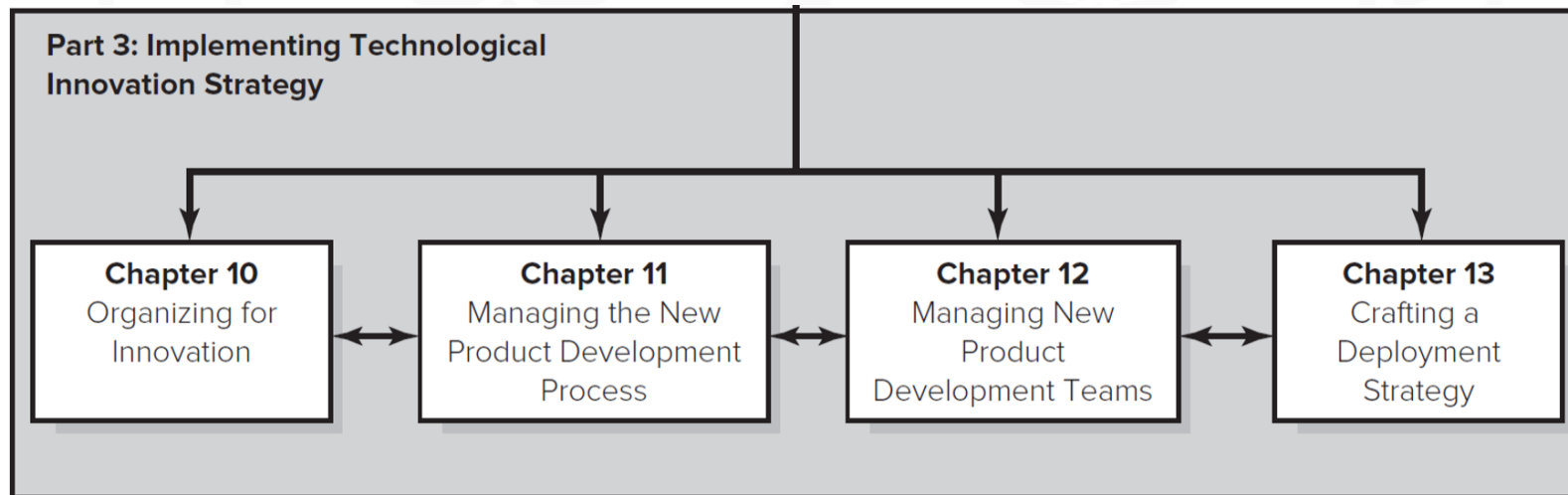
## Part Two: Formulating Technological Innovation Strategy.

- Defining the organization's strategic direction.
- Choosing innovation projects.
- Collaboration strategies.
- Protecting innovation.



## Part Three: Implementing Technological Innovation Strategy.

- Organizing for innovation.
- Managing the new product development process.
- Managing new product development teams.
- Crafting a deployment strategy.



# Reminder week 1: What do I need to learn?



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## **Chapter 1 + additional readings**



# Syllabus ...Q&As



Thank you for your attention