



## Definition of Innovation





- 01.** Defining Innovation
- 02.** Grades of Innovation
- 03.** Motivations and Barriers
- 04.** Innovation System

# 01. Defining Innovation

## What is Innovation?



## Innovation From a European Commission Perspective

Innovation is the successful **production, assimilation** and **exploitation** of novelty in the economic and social spheres.

- “The renewal and enlargement of the range of **products and services** and the associated markets;
- The establishment of new **methods** of production, supply and distribution;
- The introduction of changes in **management, work organisation,** and the working conditions and skills of the workforce.”



*European Commission's Green Paper on Innovation*

## Innovation From a World Perspective

- The improvement of existing or the creation of entirely new products, processes, or services.
- The transformation of existing conditions into preferred ones.
- The creation of new value for the world.

*At its root **INNOVATION IS CHANGE!***



## Innovation – Why Does It Matter?

*It is the core driver of modern economic growth.*

*90% of the variation in the growth of income per worker across nations is attributed to innovation.*



*The Information Technology & Innovation Foundation*

## 02. Grades of Innovation



- **Innovation – a metaphor**



**Incremental innovation:** The new product incorporates a few new elements, absent in the previous one, without changing the basic functionalities.

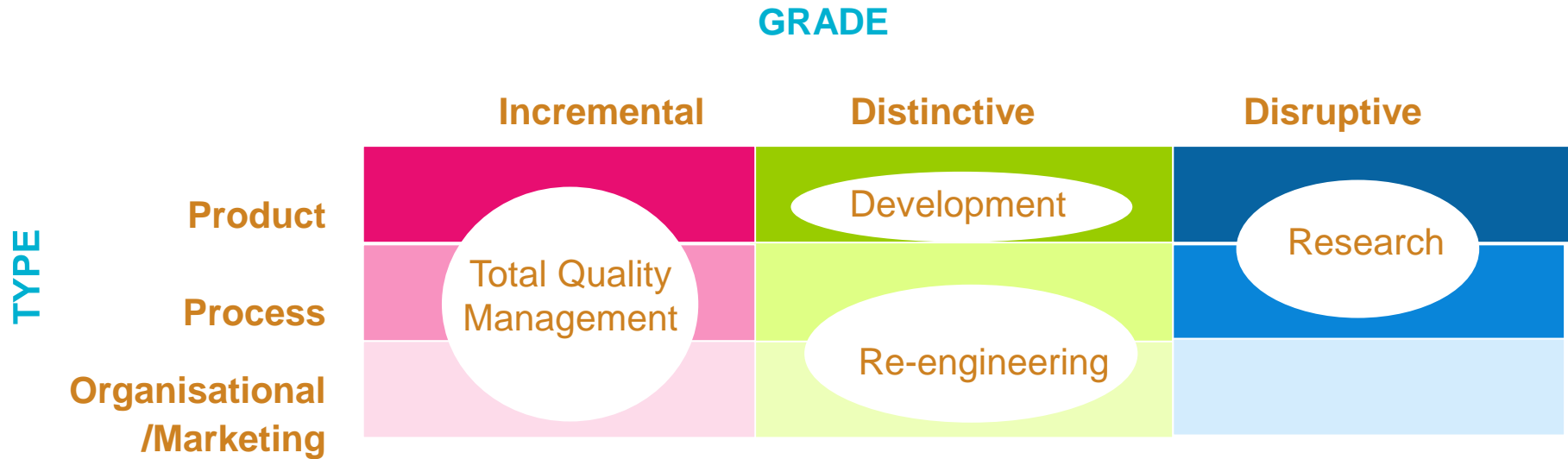


**Distinctive innovation:** Although possessing some traits similar to previous products, the new product incorporates attributes which correspond to previously non-existing functions.



**Disruptive innovation:** Complete break-up with previously existing products. It may arise in response to the satisfaction of a certain need, or by creating a new need which previously did not exist.

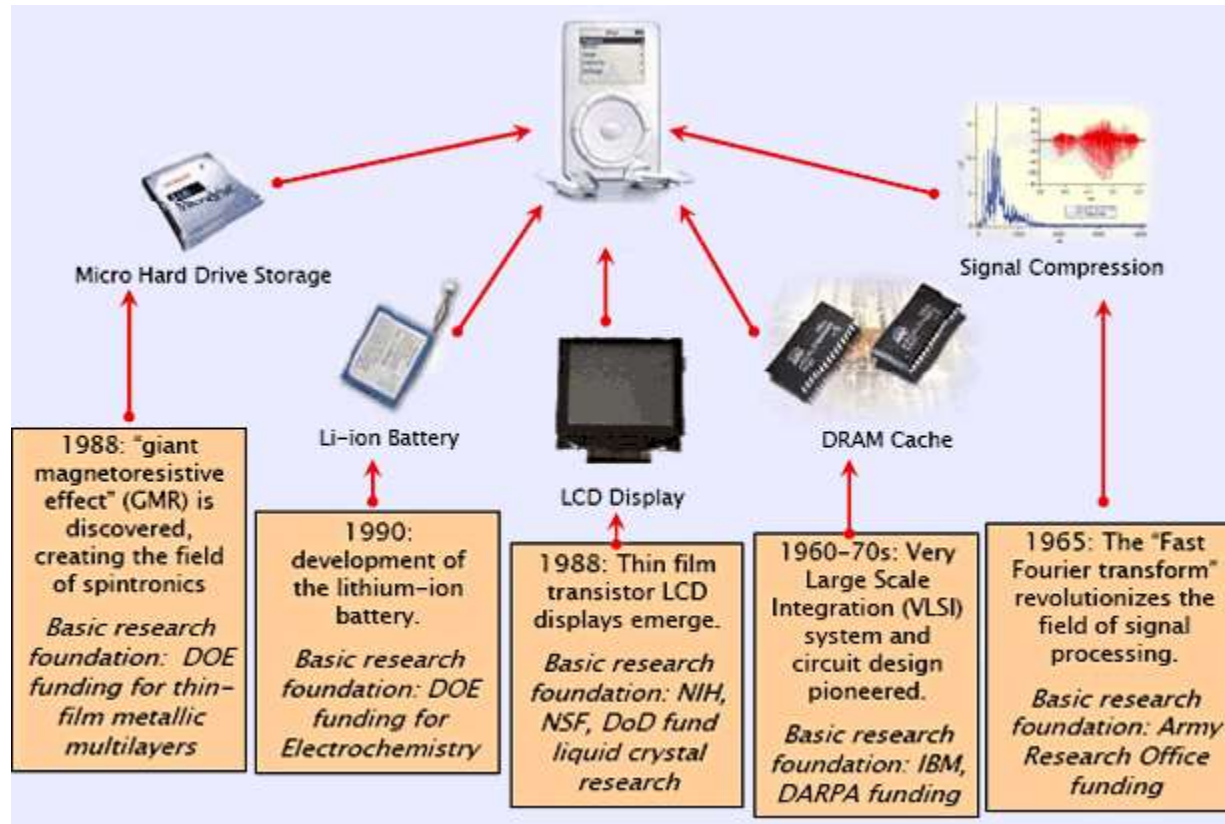




Each path of innovation has a distinct positioning.

*Adriano Freire, 1997*

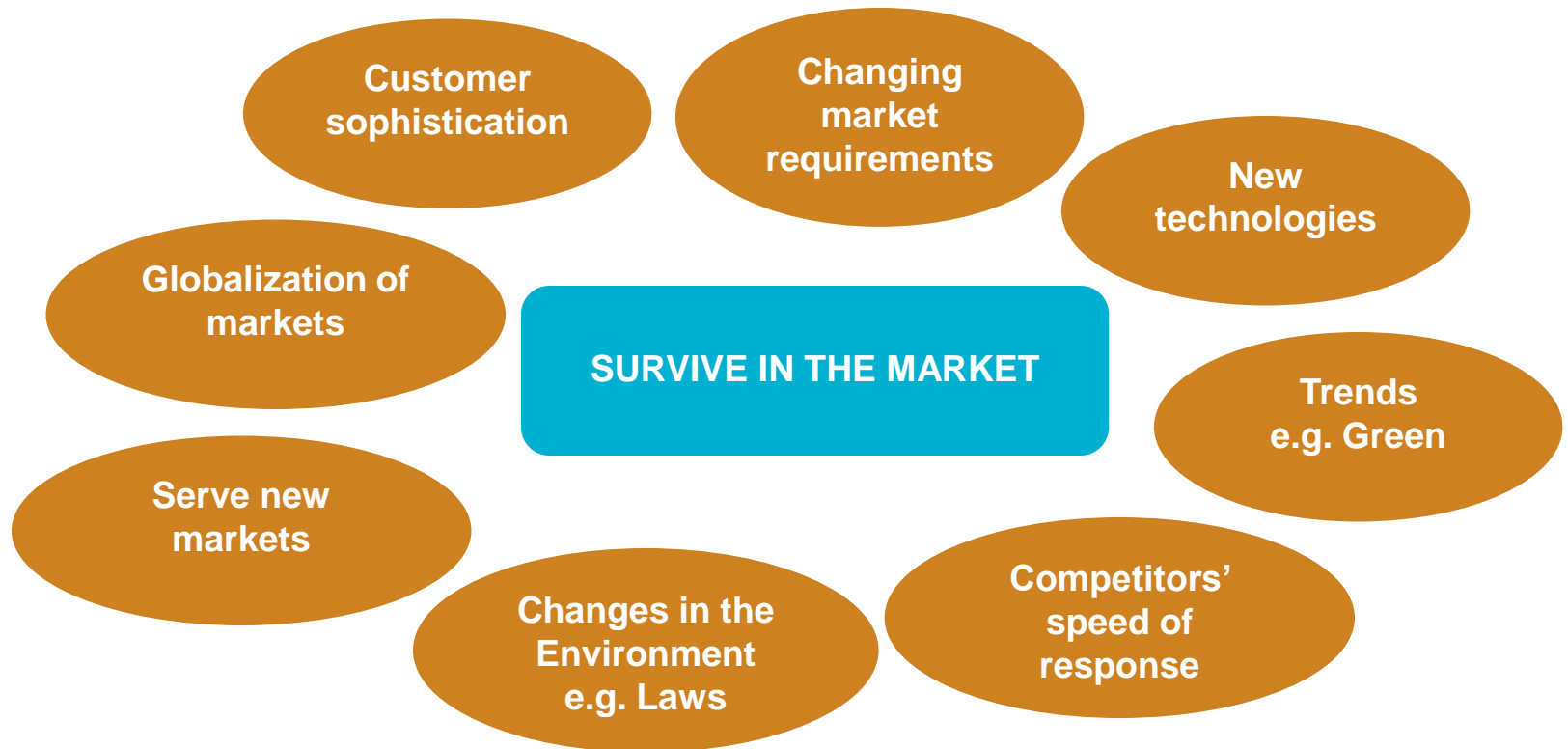
## Example of Distinctive Innovation: iPod



*The Information Technology & Innovation Foundation*

## 03. Motivations and Barriers

## Why do enterprises innovate?





## Benefits

- Profit/Margins increase
- Product diversification
- Product differentiation
- Keeping or increasing market share
- Gain a competitive advantage
- Satisfying customer needs
- Customer loyalty



## Risks

- Non-acceptance of the product in the market
- Failure in product development
- High investments that run the risk of not being profitable during the product life cycle
- Excessive concentration of resources and attention on the new product at the expense of quality and marketing of existing products
- The company becoming dependent on the new product's growth in market share



## Barriers

- Lack of ambition and vision
- Risk avoidance
- “Siloing”
- **Time commitments**
- Incorrect measures (e.g. performance indicators)
- Lack of expertise in the process
- **Inadequate funding**



**What about Culture??**

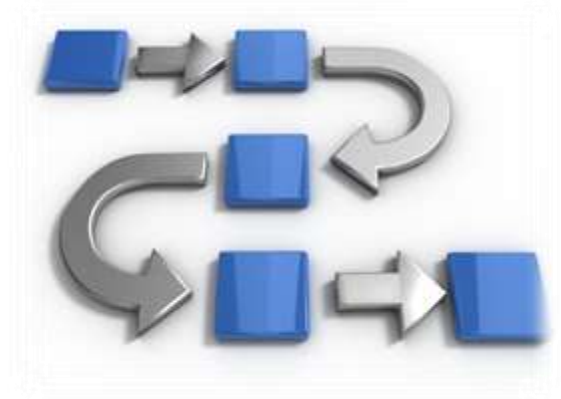
## 04. Innovation System

## Concept & Main Characteristics

***“ .. the network of institutions in the public and private sectors whose activities and interactions initiate, import, modify and diffuse new technologies.”***

***Freeman***

- Flows of technology and information among people, companies and other institutions are key to the innovative process: innovation systems are highly dependent on how smooth the knowledge flows.
- There are various mechanisms for making the knowledge flow: **joint industry research, public/private sector partnerships, technology diffusion** and **movement of personnel**.



## Concept & Main Characteristics (cont.)

To assess national innovation systems it is necessary to measure the four types of knowledge flows:

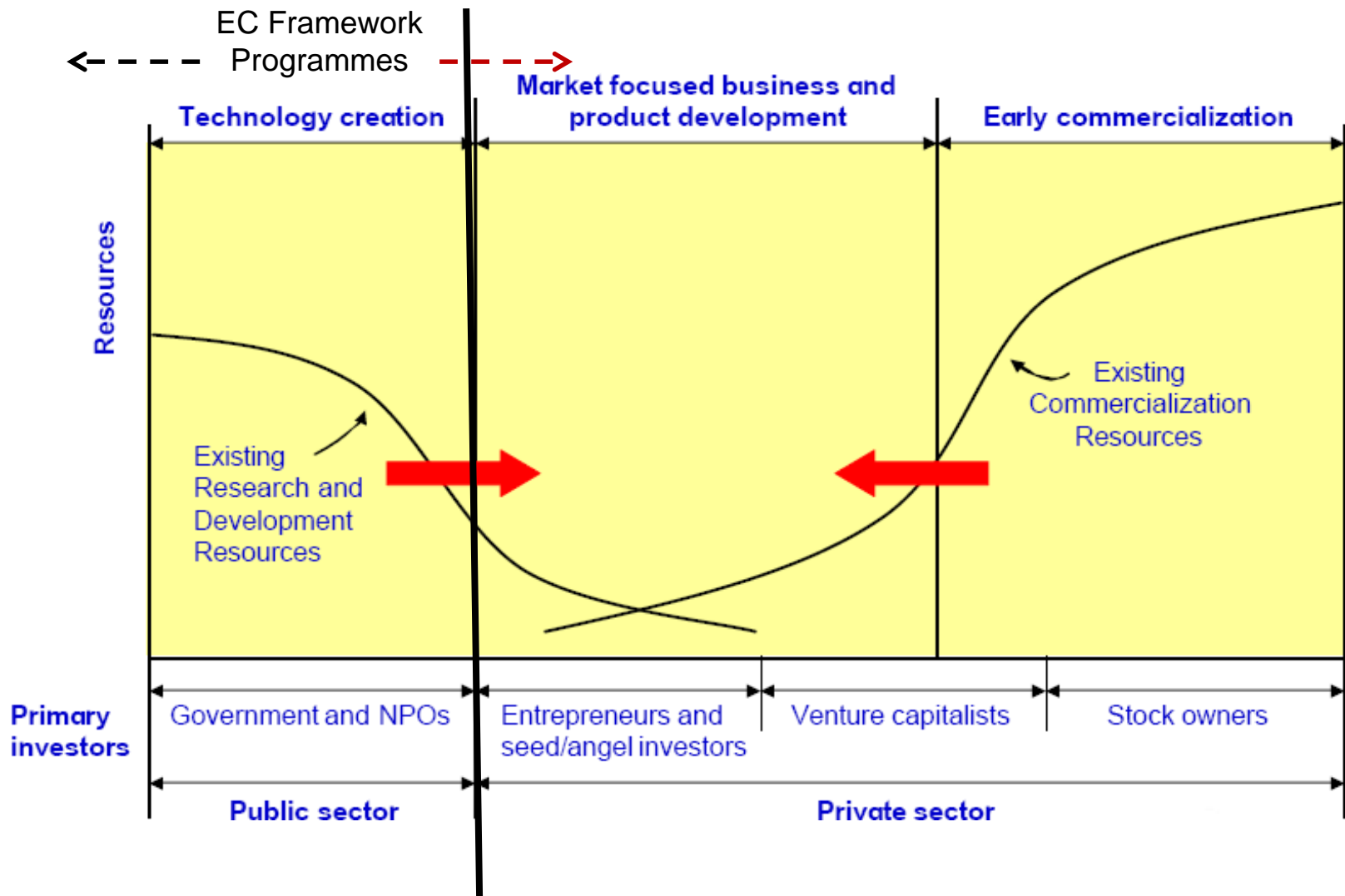
- 1) **joint industry research:** interactions among enterprises and joint research activities;
- 2) **public/private sector partnerships:** interactions among enterprises, universities and public research institutes, including joint research, co-patenting and more informal linkages;
- 3) **technology diffusion:** to enterprises, including industry adoption rates for new technologies and through machinery and equipment;
- 4) **movement of personnel:** movement of people and the knowledge they take with them.



## Importance of linkages

- Understanding the links among the stakeholders involved in innovation is crucial for improving technology performance and overall innovation performance of a country.
- Different approaches of analysing innovation systems:
  - innovation surveys
  - international knowledge flows
  - **cluster analysis** → focuses on the interactions between particular types of firms and sectors within the innovation system.







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