

The Economics of Innovation

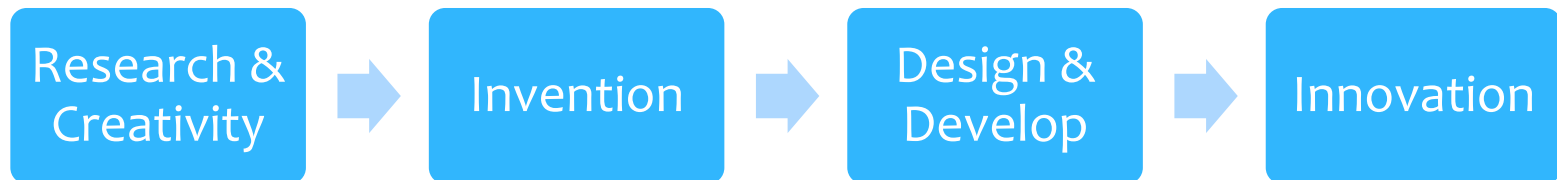
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Introduction

This presentation extends the analysis of **innovation** beyond mainstream microeconomic principles and evaluates the importance of an interdisciplinary and applied approach.

The role of history, philosophy and psychology will be combined with the economics of the real world to evaluate how innovation is achieved through **clusters, networks** and **cooperation**.

Basic Process of Innovation



The Imperative of Innovation

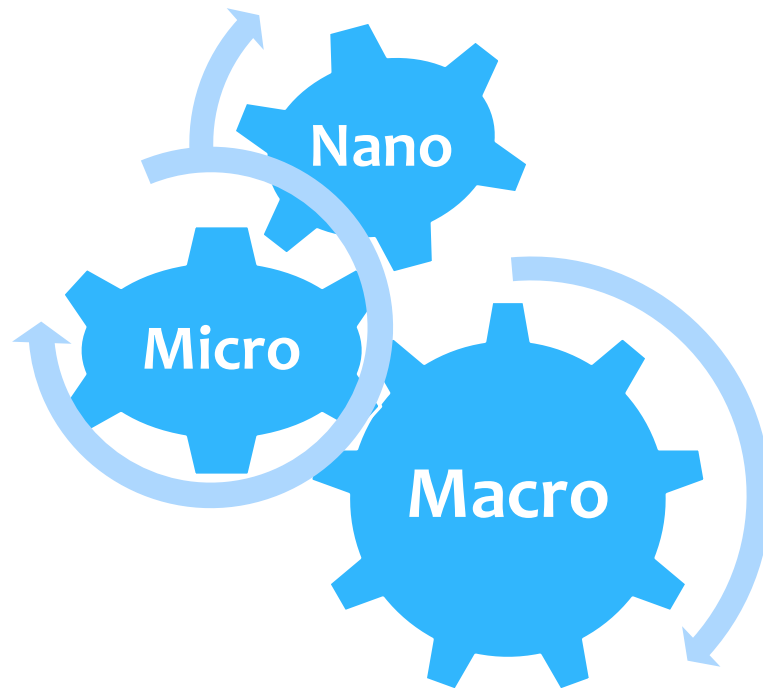
The Economics of Innovation is relatively new.

At a **Macroeconomic** level, it contributes to business cycles and economic growth.

At a **Microeconomic** level, it contributes to the economies of scale, scope and agglomeration.

At a **Nanoeconomic** level, contributes to the inspiration behind discovery.

Economic Dynamics



Entrepreneurial Spirit

The study of innovation from an economics perspective primarily begins with the study of **Entrepreneurship**. This is because innovation is linked to creation of wealth and the wealth-creators tend to be entrepreneurs; certainly in the initial stages of research and development. What generates or drives **Entrepreneurial Spirit** is a complex mix of psychology and economics.

The Role of Entrepreneurs

There are six potentially competing economic perspectives on how entrepreneurs differ:

1. **Neo-classical Economics:** non-unique;
2. **Leibenstein:** reducing x-inefficiency;
3. **Austrian School:** force for equilibrium;
4. **Schumpeter:** acts as an innovator;
5. **Casson:** specialist in co-ordination;
6. **Shackle:** unexplored connections.

J A Schumpeter (1883-1950)



The Restrictive Definition: Schumpeter

For Schumpeter, the entrepreneur acts as an innovator, where the paradoxical role of the entrepreneur is to destroy situations of equilibrium (opposite to Austrian School).

The entrepreneur will introduce new goods and services; new ways of producing goods and services; open up new markets; discover new sources of supply and re-organise the structure of industry.

First Mover Wins

The main Schumpeterian view of the 'entrepreneurial innovator' is a restrictive definition and confined to those innovators who are the first to commercialise previously non-commercial knowledge.

The **first mover advantage** means the entrepreneur is mainly a **market-maker** and those businesses that follow are reduced to simply imitators.

The Broad Definition: Shackle

For Shackle, the entrepreneur acts as a connector of ideas, concepts and initiatives. Opportunities for profit are not simply waiting to be exploited; rather the entrepreneur has to be constructive.

The entrepreneur will have a positive aptitude in terms of creativity and a pre-disposition towards taking risks.

Who Dares Wins

The main Shackleian view of the ‘entrepreneurial connector’ is a broad definition and not confined to innovation but contends that **risk neutral** entrepreneurs are business leaders with a huge capacity for ‘integrative thinking’.

An entrepreneur makes connections, creating wealth through exploratory activity including finding **networks effects**.

Market Markers and Missing Markets

The general conception is that innovation generates new and exciting markets i.e. innovators are **Market Makers**.

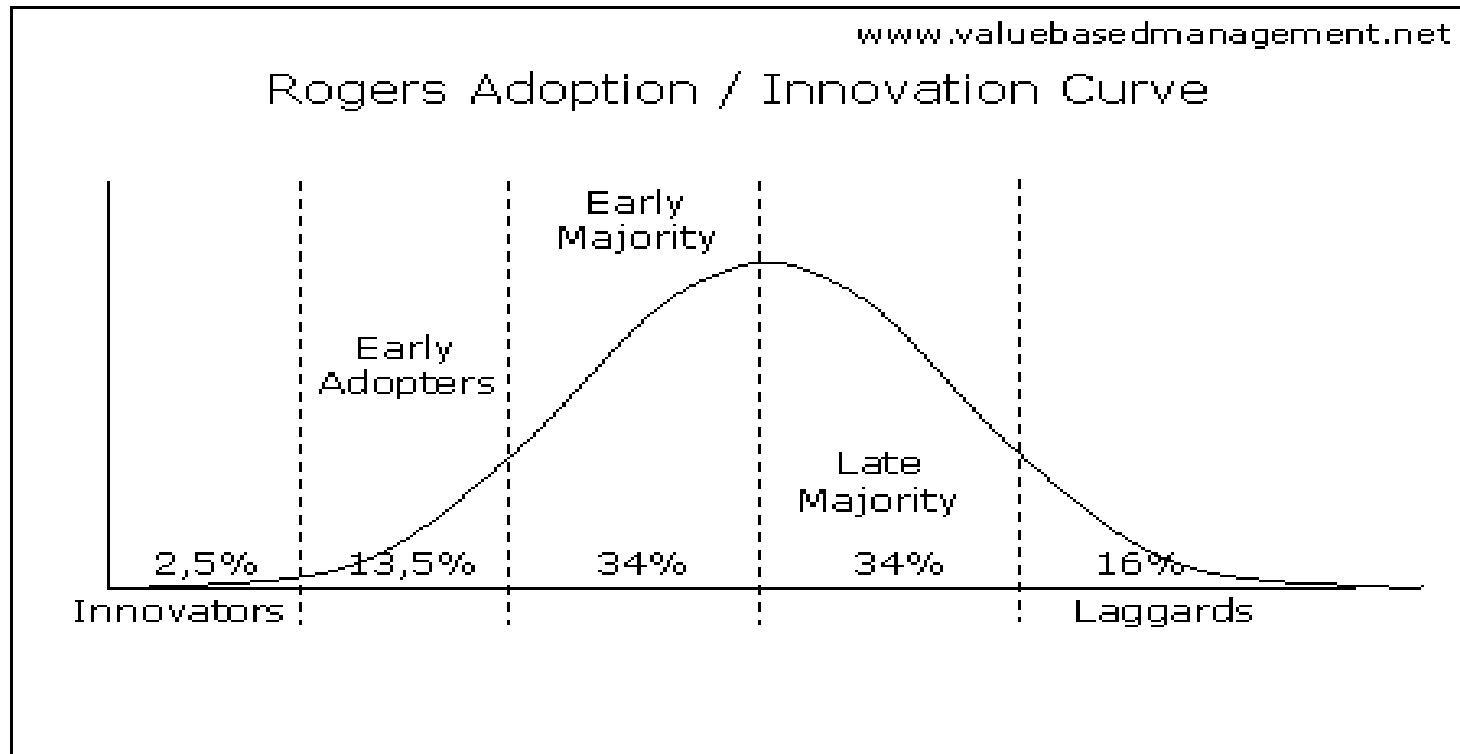
The lesser known area of innovation relates to innovation finding solution to **Missing Markets** where there is insufficient effective demand as well as consumer surplus.

Thematic Approaches

The study of the Economics of Innovation is part of a thematic approach on the supply-side (e.g. organisation for innovation) and the demand-side (e.g. diffusion of innovation).

A selection of these themes include **adoption**, **clusters**, **networks** and **co-operation** with respect to decision-making and policy-analysis.

Innovation Curve



Clusters

The economic study of clusters dates to **Alfred Marshall** and economies of agglomeration; so called Marshallian Industrial Districts.

This is linked to the local benefits of co-location where the whole is greater than the sum of the parts in terms of creating innovation. In mature areas this is linked to **regional resilience**.

Networks

There are at least two potential aspects to networks or eco-systems.

1. The combination of external knowledge sources (**global pipelines**) combining with local expertise (**local buzz**).
2. The benefits of **standardisation** in the process so that networks become operational.

Co-operation

Since the beginnings of early modern economics such as James Steuart (1767) and Adam Smith (1776), competition has been prominent in the inquiry.

However, a study of innovation stresses:

1. The notion of aggregation of productivity growth (Robert Solow, 1957);
2. The notion of Spill-over Effects and feedback loops (Paul Geroski, 2005).

Knowledge as Public Goods

The generation of knowledge is often a private process undertaken by firms. However, the initial source of funding may have been from public support and/or non-profit university sector. Hence, there can be conflict regarding the ownership and use of this knowhow. See the example of **graphene** developed at the University of Manchester.

Global Innovation Index 2015

Country (Economy)	Score (100)
1. Switzerland	68.30
2. United Kingdom	62.42
3. Sweden	62.40
4. Netherlands	61.58
5. United States of America	60.10
6. Finland	59.97
7. Singapore	59.36
8. Republic of Ireland	59.13
9. Luxemburg	59.02
10. Denmark	57.70
11. Hong Kong (PRC)	57.23
12. Germany	57.05

Innovation Case Studies

There are a number of insightful innovation case studies that have created a lot of detail:

1. **Agglomeration** e.g. Silicon Valley, USA;
2. **Standardisation** e.g. QWERTY keyboard;
3. **A “fast second”** e.g. MICROSOFT;
4. **Creative Destruction** e.g. the Internet
5. **Supplier-induced demand** e.g. health clinics

Conclusions and Summary

Innovation is an important aspects of the global economy at all levels; and the economics of innovation is an integral part of wealth-creation, productivity and market structure.

Future work in the area is likely to include some of the following: inequality; competitiveness and the environment.