

# The Generation of Innovations and The Innovation-Decision Process



Review of Chapter 4 & 5, E.M. Rogers (DOI)

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# Innovation-Development Process - Definition

- All decisions, activities, and their impacts that occur from recognition of a need or problem, through research, development and commercialization of an innovation, through diffusion and adoption of an innovation by users to its consequences.

**What are the 6 Main Stages of the Innovation-Development Process?**

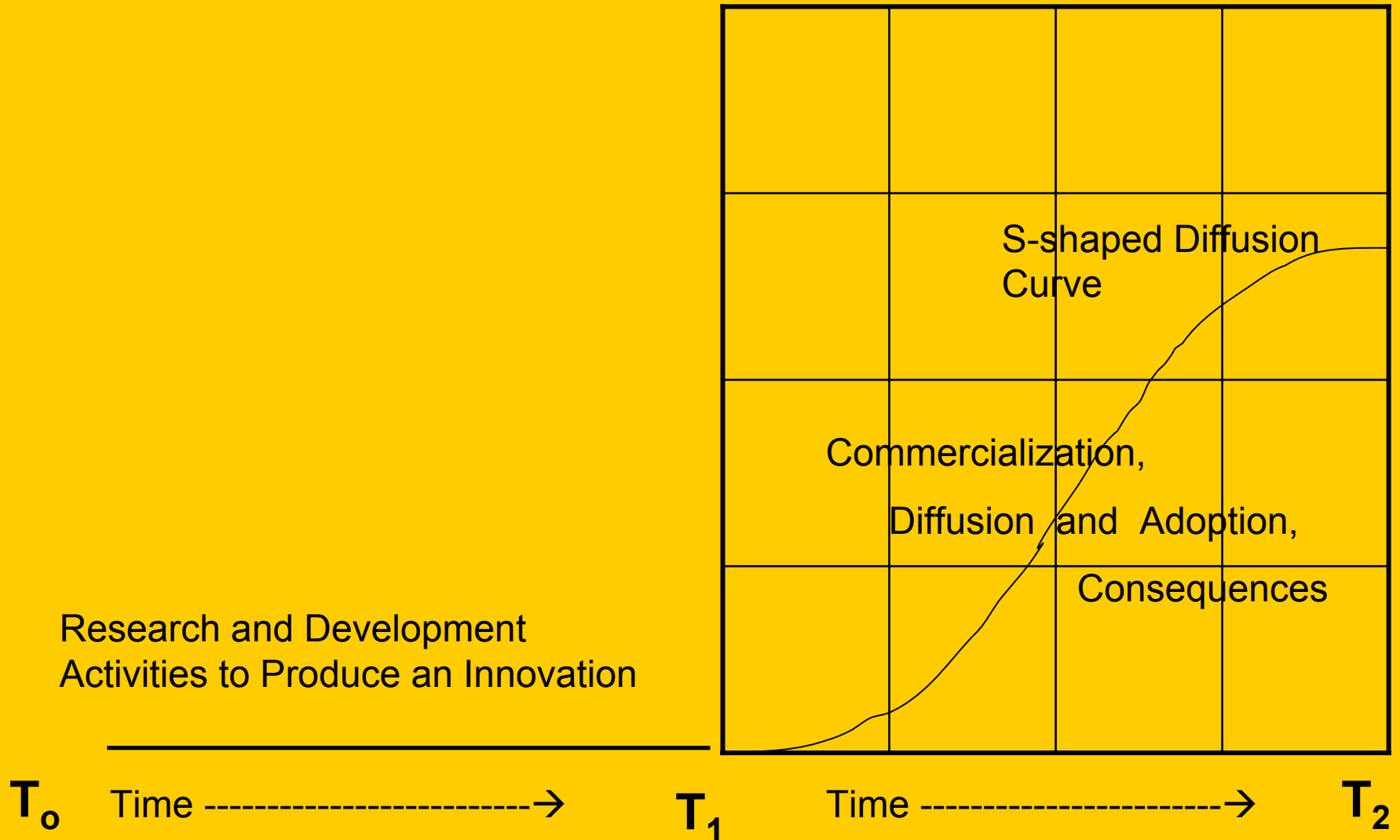
# 6 Main Stages of the Innovation-Development Process

- 1) Needs/Problems
- 2) Research (basic and applied)
- 3) Development
- 4) Commercialization
- 5) Diffusion and Adoption
- 6) Consequences



Time

# Commercialization, Diffusion & Adoption and Consequences all occur after $T_1$ .



# Who Develops Innovations?



# Who Develops Innovations?

- Science and engineering researchers
- Policy-makers (e.g. seat belts)
- Manufacturers
- Lead Users



# Development - Definition

- Process of putting a new idea into a form that is expected to meet the needs of potential adopters.
- Development means coming up with the chosen design and/or prototype that is “ready for manufacture” or “ready for dissemination.”



As described both in Chapter 1 & 4,  
a technology usually has  
2 components:  
matter and energy or...

- Hardware – the tool that embodies the technology as a material or physical object
- Software – the information base for the tool

# Technology Transfer (TT)

## – Defn. and Conventional View

- Technology transfer is the application of information to use.
- The conventional conception of TT is that it is a process through which the results of basic and applied research are put into use by “receptors.” This view implies that TT is a **one-way process** Also, technology is seen as **mainly hardware**.

# The Design Process

## (standard textbook version)

- Problem Definition
- Idea Generation
- Information Gathering
- Concept Evaluation
- Lab Research, Experimentation & Analysis
- Detail Design
- Fabrication
- Testing & Evaluation (Lab and Field)

# Technology Transfer – 2-Way Exchange ("Co-evolutionary" - Murcott)

Technology transfer is a communication process – a 2-way exchange

What are the 3 levels of  
Technology Transfer?

# 3 Levels of Technology Transfer

- Knowledge – the receptor knows about the technology
- Use – the receptor has put the technology into use in his or or organization.
- Commercialization – the receptor has commercialized the technology into a product that is sold in the marketplace.

What is technical determinism?

What is social determinism?

(What do you believe?)

# Technical Determinism

- Belief that technology causes changes in society



# Social Determinism

- Belief that technology is shaped by social factors, a product of society or causes changes in society

# Chapter 5

## The Generation of Innovations

What are the 5 Stages of the Innovation-Decision Process?



Time

# 5 Stages of the Innovation-Decision Process

1) Knowledge

2) Persuasion

3) Decision

4) Implementation

5) Confirmation



Time

In the US,  
in the “Knowledge Stage”  
what do you think comes first,

1. The Need?
2. The Awareness?

In other words, do you think we in  
the US are active or passive in the  
process?

(relates to “selective exposure”)

Can you think of an example  
where you have been influenced  
or have influenced someone to  
try an innovation  
in the “persuasion stage?”

What about the decision stage?

Can you think of an example  
where you have been in the  
“implementation stage?”

What about the confirmation  
stage?

What experience do you have with  
this innovation-decision process?

Linux  
Skype?  
Text Messaging  
iPod  
other?



Time



What are the 3 Types of  
Innovation Knowledge?

# 3 Types of Innovation Knowledge

- Awareness
- “How to”
- Principles

What is a  
“preventive innovation?”

# “Preventive Innovations”

- New idea that users adopt to avoid possible occurrence of some unwanted event.
- The unwanted event may or may not occur if the innovation is adopted
- The rate of adoption of preventive innovations is slower than for non-preventive innovations
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What are some generalizations about early vs. late knowers of an innovation?

# Early vs. late knowers of an innovation. Early knowers have:

- More education;
- Higher social status
- More exposure to mass media
- More exposure to interpersonal channels of communication;
- More contact with change agents;
- More social participation;
- Are more cosmopolite

(Is this true in your experience of innovations?)

What is the Bass  
Forecasting Model?"

# Sustainability of an innovation

- Degree to which an innovation is continued over time after a diffusion program ends



What is Reinvention?

Do you have  
any experience of it?

# Mass Media vs. Interpersonal Channels

Generalization: Mass media channels are relatively more important at the knowledge stage, and interpersonal channels are relatively more important at the persuasion stage in the innovation-decision process.