

# Standardization and Innovation

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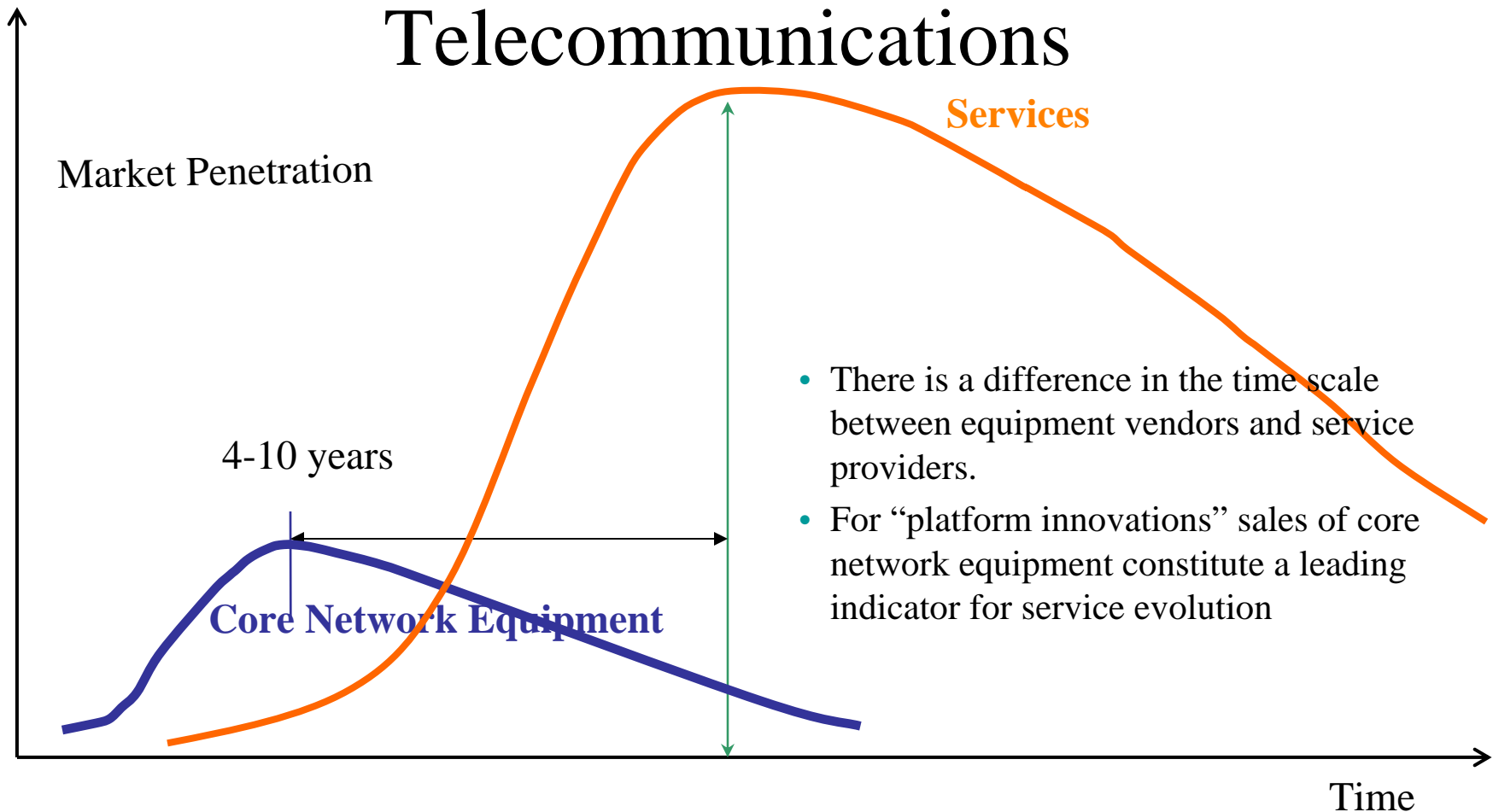
# Problem Definition

- Are standards favorable or detrimental to innovations?
- Meaningful communication requires standards and conventions
- More useful questions:
  - Which standards favor innovation and which do not?
  - When should a standard be made?
  - How can standards favor further innovation?

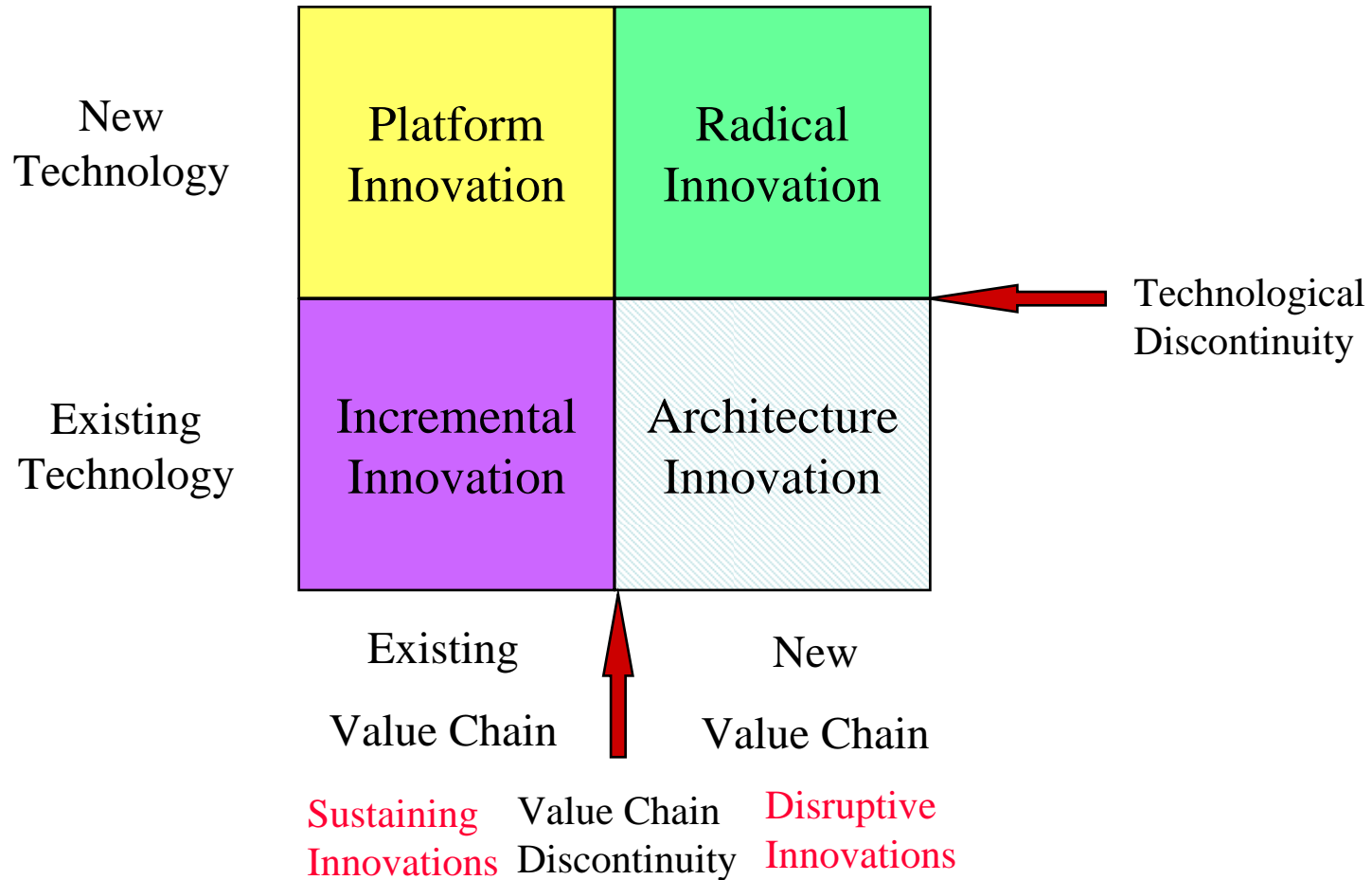
# Factors to Consider

- Not all innovations are the same --> Types of innovation
- Innovations in equipment are different than innovations in service (even when they have the same technological basis)
- The element of time and the technology life cycle.

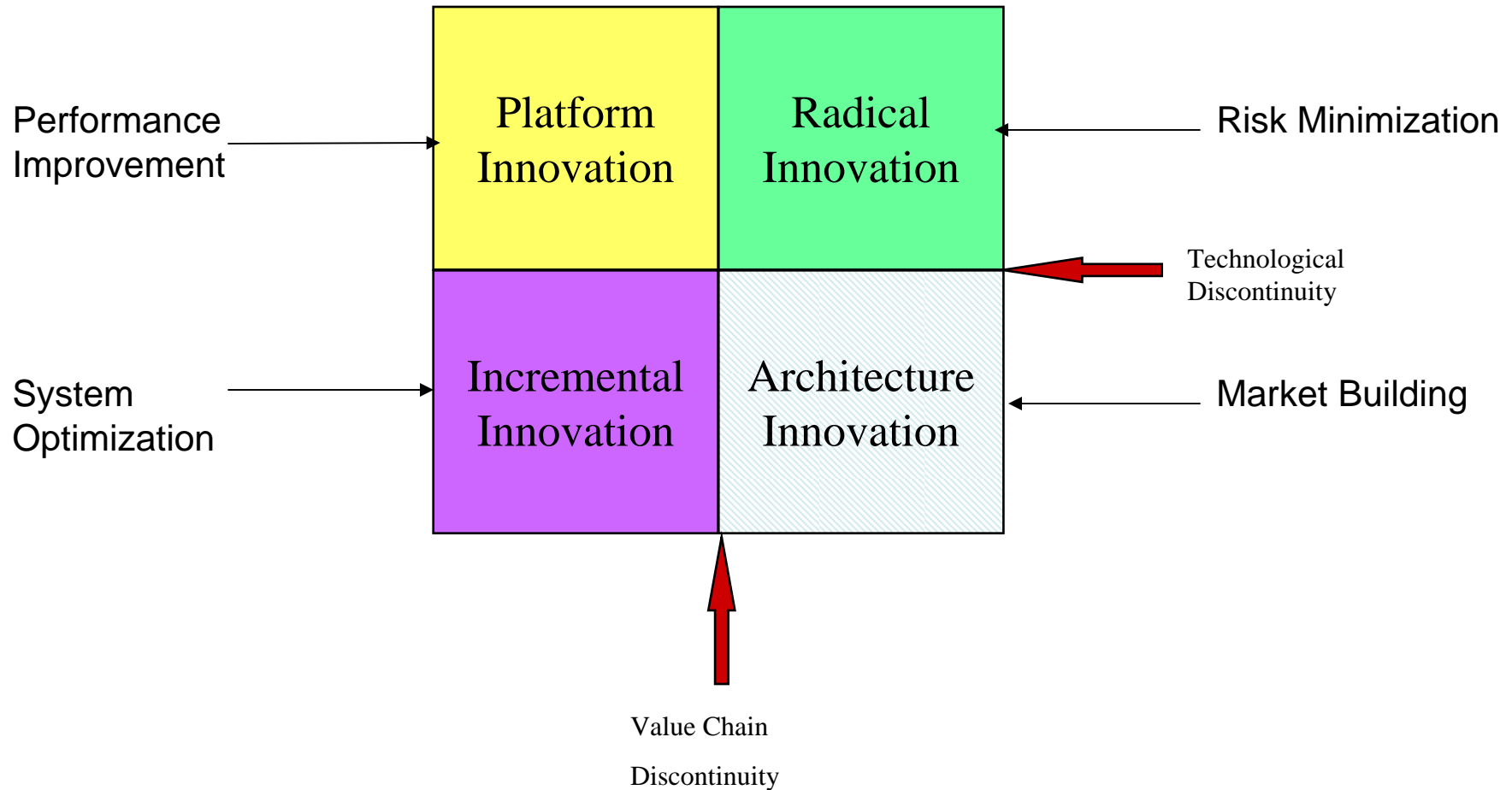
# Equipment and Services in Telecommunications



# Classification of Innovations



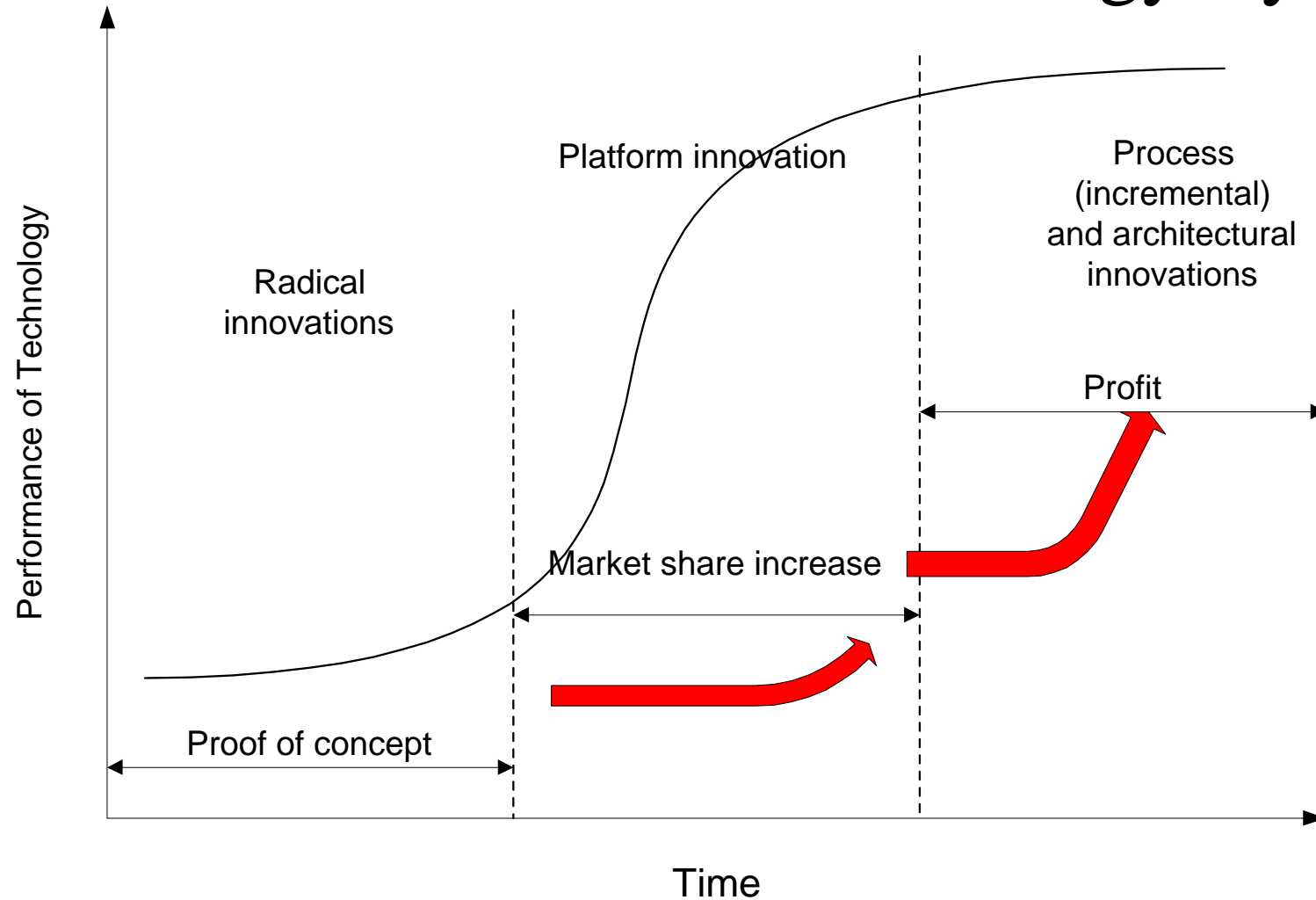
# Objectives from Innovations



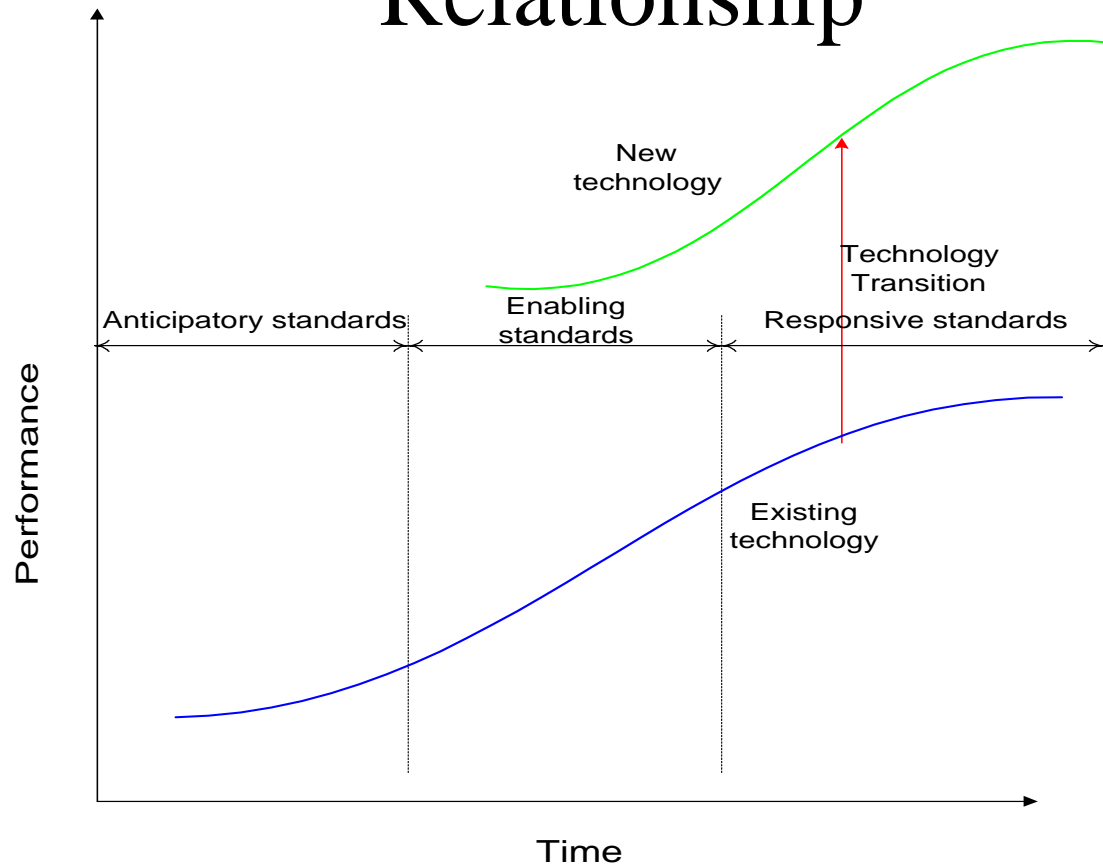
# Innovations and Their Context

- Integrated Circuit Card (1980):
  - Architectural innovation for card manufacturers
  - Platform innovation for banks
  - Radical innovation for payment of telephone calls
- Digital photography
  - Architectural innovation for handset manufacturers
  - Platform innovation for camera manufacturers
- iPod is an architectural innovation in terminals while iTunes is an architectural innovation in services

# Innovation within the Technology Cycle



# Standards-Technology Timing Relationship

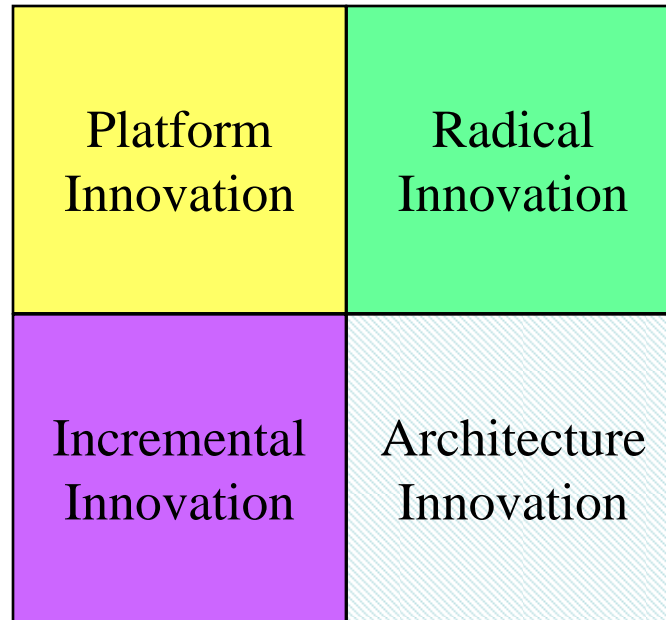


# Some Ideas for Further Analysis

Survival of the fittest (Von Hayek/Von Mises)

Role of monopolies (Schumpeter)

Equilibrium of supply and demand (Walrus, Pareto, Arrow)



(Kuhn)

Creative Destruction (Schumpeter)

## “Ideal” Standardization

- Risk management  $\leftrightarrow$  anticipatory standards /radical innovations
- Marketing tool  $\leftrightarrow$  enabling standards/architectural innovations
- Scale and performance improvement  $\leftrightarrow$  enabling standards/platform innovations
- Cost reduction  $\leftrightarrow$  responsive standards/incremental innovations

## Some Rules of Thumbs

- Architectural innovations → No standards or standard wars (even within the same standard organization)
- Platform innovations → Technology competition
- Technological systems are a combination of innovations at different stages in their lifecycles
- Industrial actors may have diverging views of the innovation (depending on their domain of activities) → conflicting standardization activities

# When do Standards Promote Innovation?

- Scope of Standardization depends on:
  - Type of innovation and the phase in the life cycle of the technology
  - Standardization for products is different than standardization for services.
- Standards producers are accountable
  - Major problem of the market-based standardization process is the lack of accountability. Those who make standards are anonymous and do not answer for the long-term effect of their technical choices

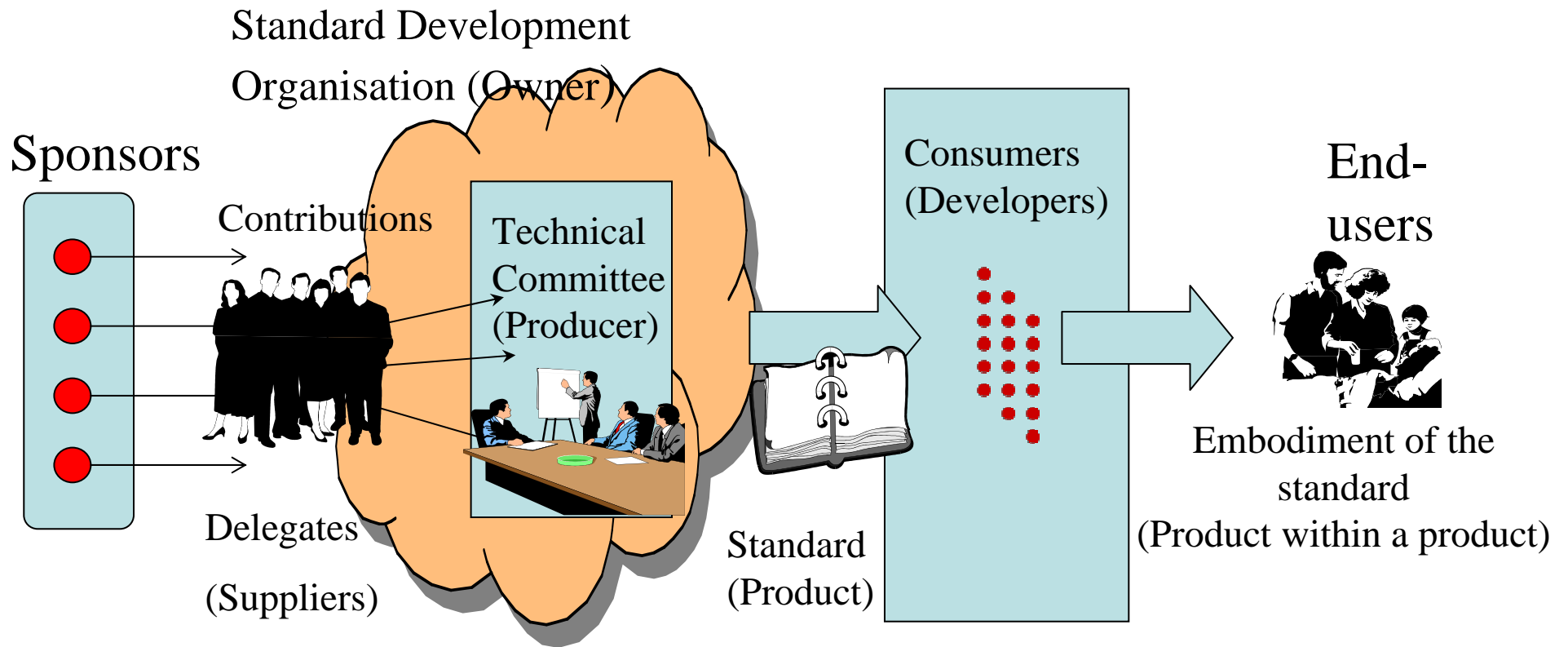
## Possible Standardization Actions (based on Godet's approach to innovation)

- Proactive: causing the change --> actively work on a standard
- Pre-active: anticipate change and take advantage of it --> follow the standard activities
- Reactive: track the change and defend against it --> alternative standard?
- Passive: do nothing

# Role of Standard Bodies

- Owners but not producers of standards
- Provide a service to standards producers, suppliers and sponsors and consumers, regulators and end-users
- The service: is to assist in standards production and distribution (and promotion?)

# Standards Stakeholders



Source: Sherif, Jakobs and Egyedi (2007)