



MASTER IN ENTREPRENEURSHIP
INNOVATION MANAGEMENT
IN COLLABORATION WITH **MIT SLOAN**

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MIT MANAGEMENT
SLOAN SCHOOL



UNIVERSITÀ DEGLI STUDI DI NAPOLI
PARTHENOPE

MASTER MEIM 2022-2023

The innovative organizations

Prof. Giovanni Abramo, SM 1990
Honorary Professor of Management, University of Waikato, NZ



OUTLINE

- Make or Buy?

- Make:

- The decisions of investment in innovative projects
 - The determinants of innovation
 - The decision to stop investing in technological development



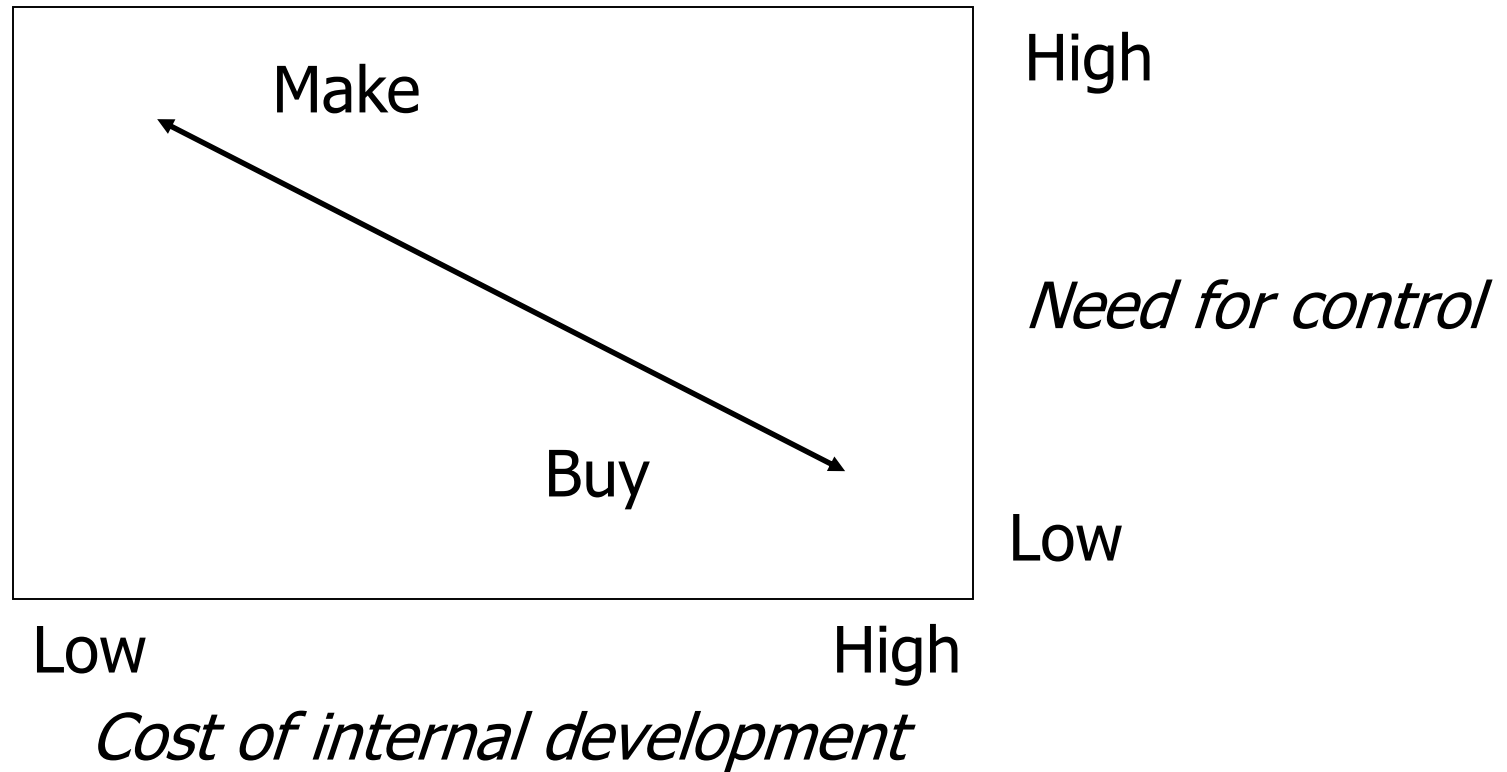
MAKE OR BUY?

Pros and cons

- Cost
- Time
- Control

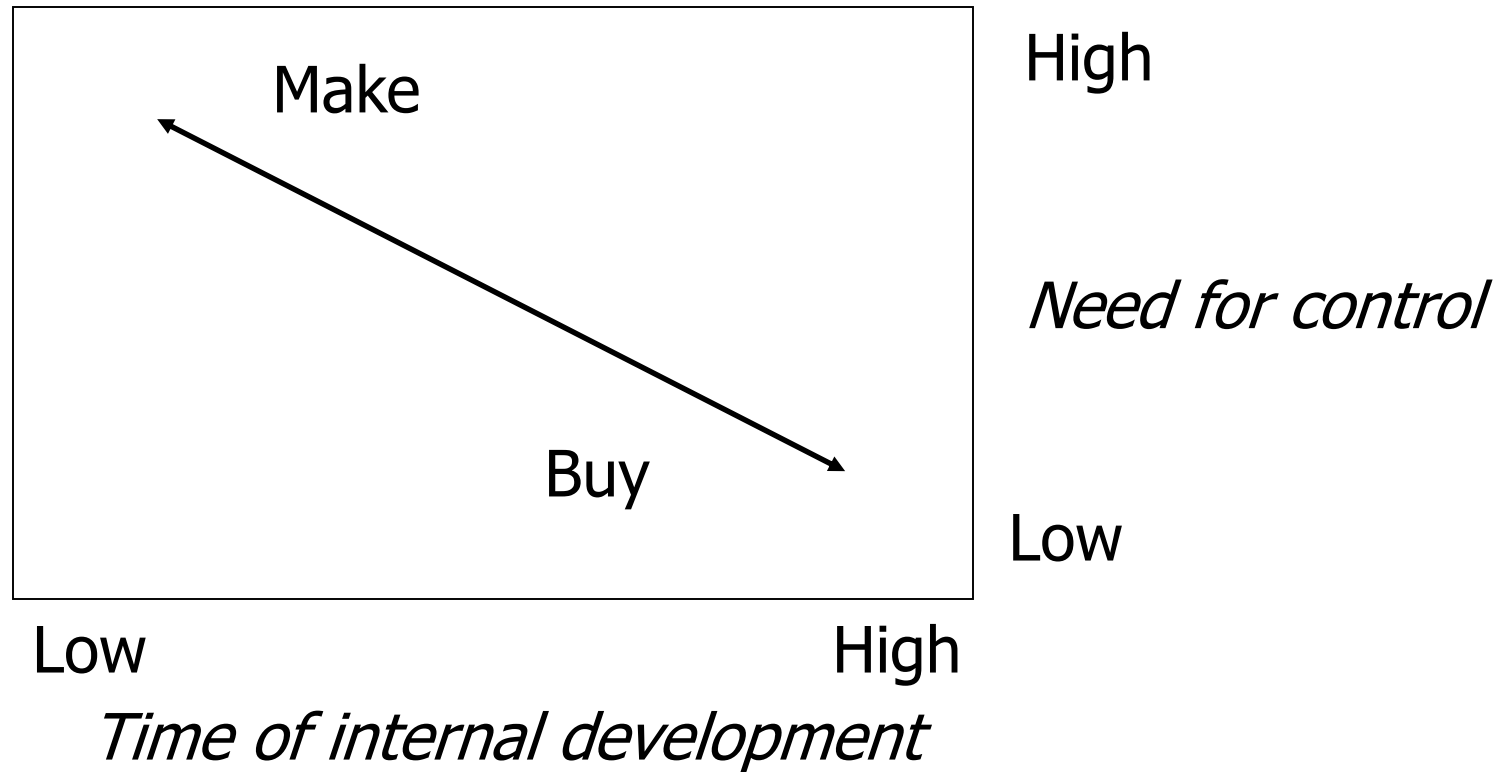


MAKE OR BUY?





MAKE OR BUY?





MANAGEMENT OF PROJECT PORTFOLIO

Ex ante:

- The classical approaches to the research investment decisions
- The financial option method

In progress:

- When stopping investing in technological development
- The management of technological transitions



EX ANTE: CLASSICAL

? General cost, ROI ...



EX ANTE: STOCK OPTIONS

The value of an option increases if it increases:

- The price of the relevant stock
- The interest rate
- The expiration time
- The volatility of the stock price

... it diminishes if it increases:

- The exercise price



FINANCIAL OPTIONS AND R&D PROJECTS

Similarities between the two are:

- Option price = Cost of R&D project
- Exercise price = Future investment cost
- Option value = Return on investment



THE INNOVATIVE ORGANIZATIONS

- Stages of an innovation process
- Behavioral functions
- Management implications



STAGES OF AN INNOVATION PROCESS

- Pre-project
- Planning
- Execution
- Results assessment
- Transfer of results



BEHAVIORAL FUNCTIONS

- Idea generating
- Entrepreneurship
- Leadership
- Gatekeeping
- Sponsoring



MANAGEMENT IMPLICATIONS

- Resource planning and recruitment
- Personnel development
- Job-design
- Evaluation
- Rewarding schemes



WHEN STOPPING INVESTING IN TECHNOLOGY DEVELOPMENT

- Friday, 13 December 1907 ...
- May 1971

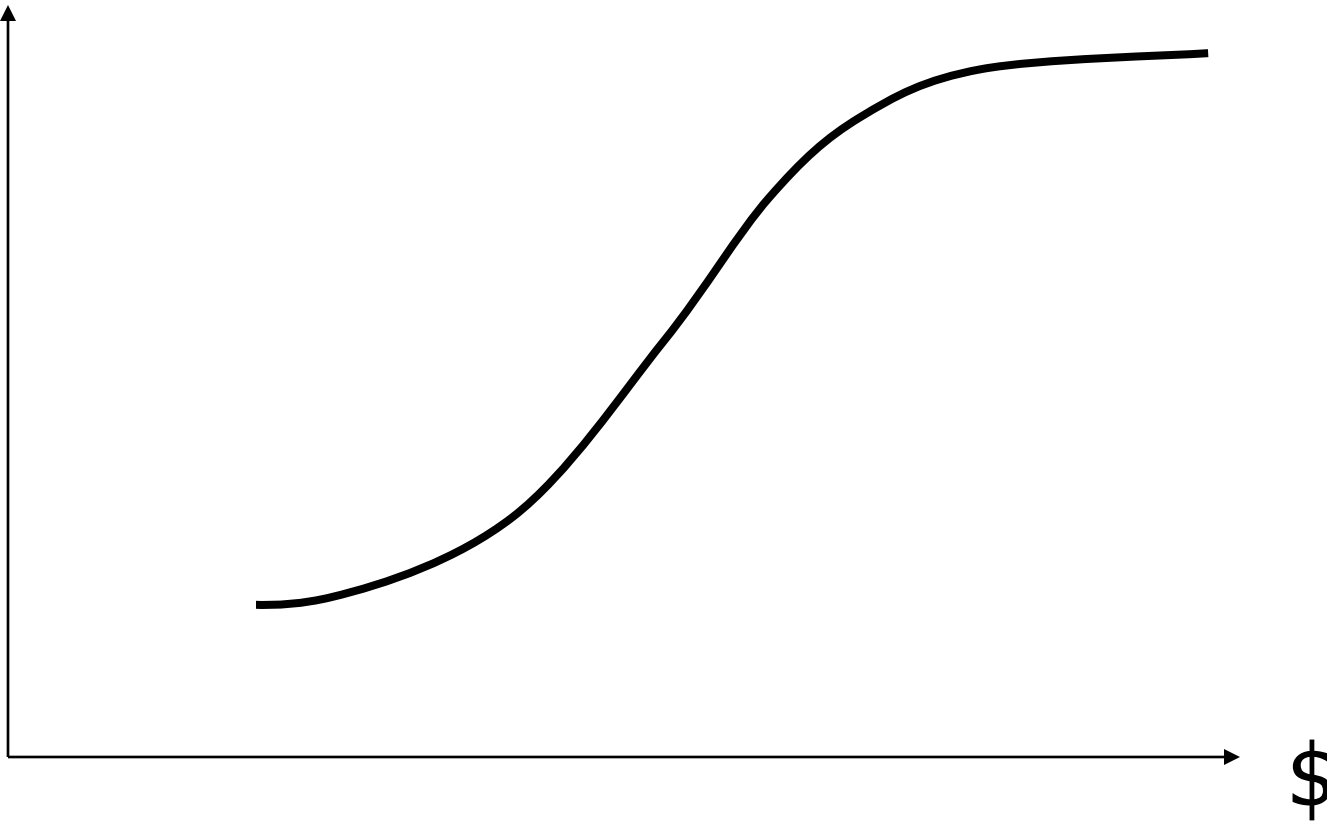


TECHNOLOGY FEATURES

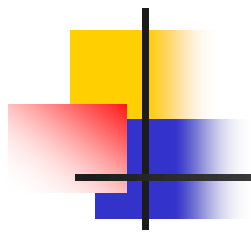
- Limit
- Potential

THE "S" CURVE

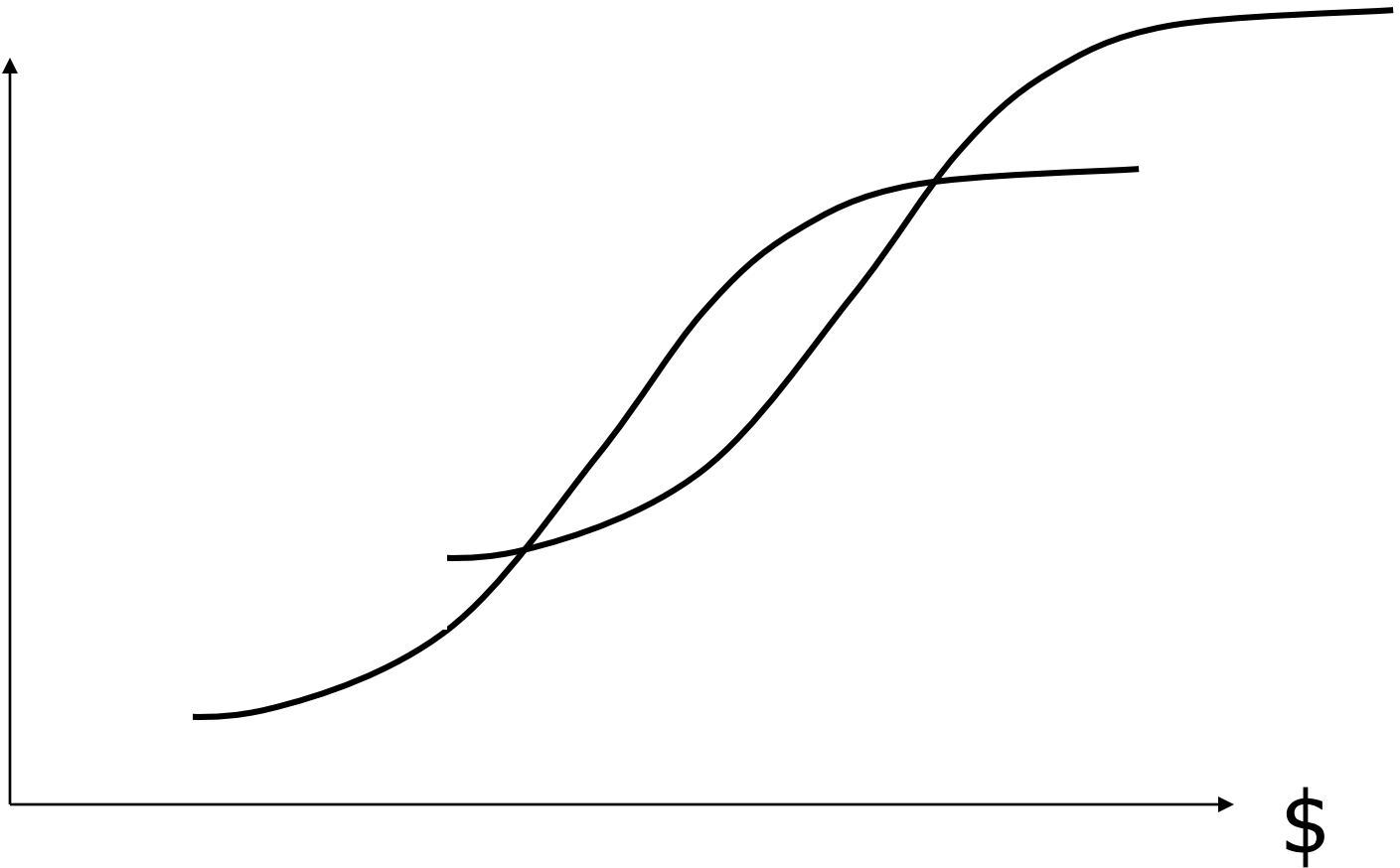
TP



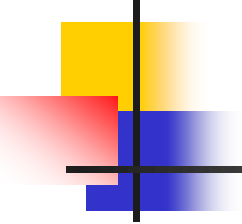
TECHNOLOGICAL TRANSITIONS



TP



RETURN ON R&D INVESTMENT



$$\text{R\&D productivity} = \frac{\Delta \text{ TP}}{\Delta \text{ Inv. R\&S}}$$

$$\text{R\&D yield} = \frac{\Delta \text{ Profit}}{\Delta \text{ TP}}$$

$$\text{Return on R\&D invest.} = \frac{\Delta \text{ Profit}}{\Delta \text{ R\&D Inv.}}$$



CAUSES OF DISPLACEMENT

- Technological myopia
- Faulty interpretation of market signals
- Cultural trap



SYMPTOMS OF DECLINE

- Perceptions of R&D productivity decay
- Tendency to miss R&D projects deadlines
- Morale down
- Dissension among R&D staff
- Shift from product- to process-oriented R&D
- New entrants investing in radical new approaches



TOWARD EFFECTIVE ACTION

- Monitor and measure R&D productivity and yield
- Assess one's own position on the S-curve
- Watch competitors, especially new entrants
- Watch the market (especially one's own share)
- CTO more influence.