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REMOTE SENSING

PROJECT MANAGEMENT

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Topic 1

The World of Project Management



WHAT IS A PROJECT?



Why the emphasis on project management?

- Many tasks do not fit neatly into business-as-usual.
- Need to assign responsibility and authority for achievement of organizational goals.

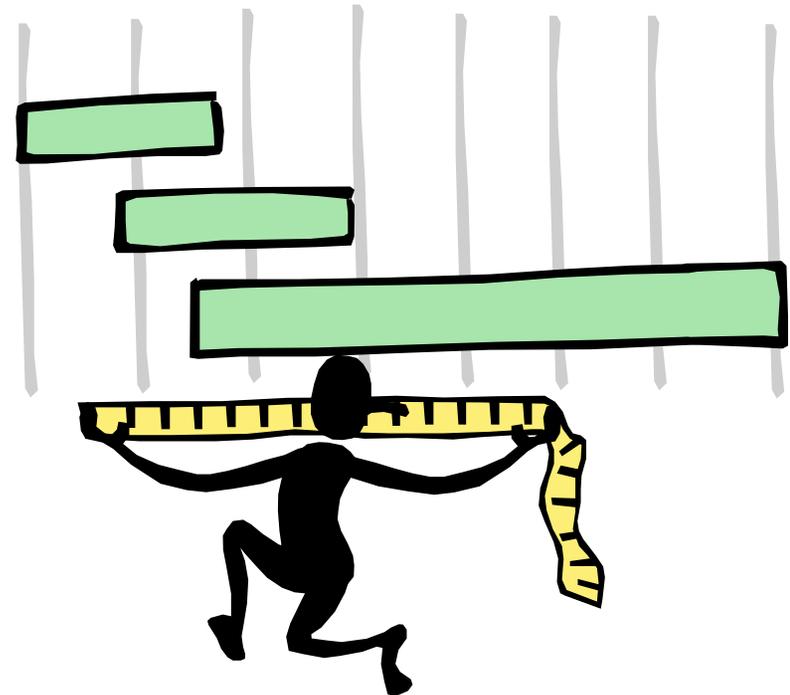


Characteristics of Projects

Unique

Specific Deliverable

Specific Due Date



Other Common Characteristics of Projects

- **Multidisciplinary**
- **Complex**
- **Conflict**
- **Part of Programs**



PMI Definition

- **“A temporary endeavor undertaken to create a unique product or service”**

Project Management Institute, 2000

PROJECT MANAGEMENT VS. GENERAL MANAGEMENT



Skill Requirements for Effective Project Management

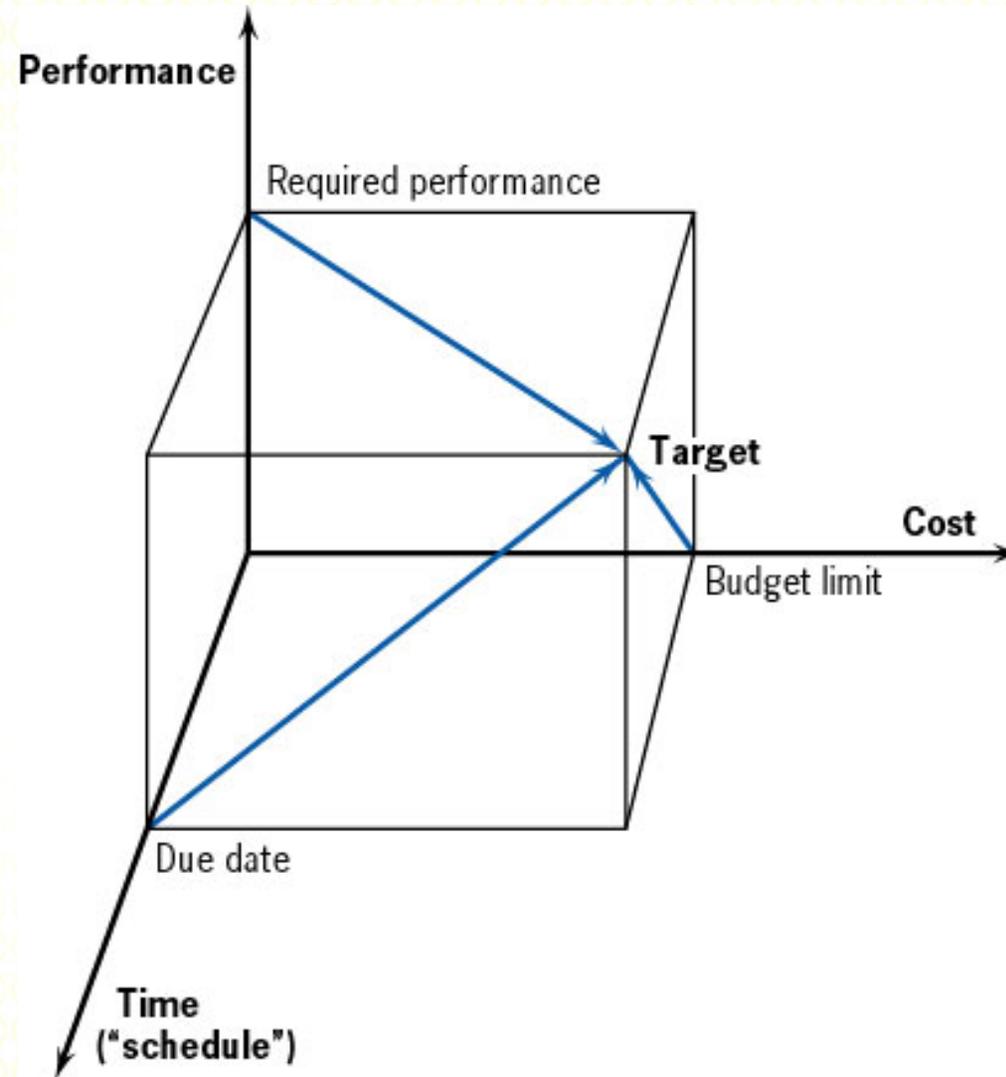
- 1. Conflict Resolution**
- 2. Creativity and Flexibility**
- 3. Ability to Adjust to Change**
- 4. Good Planning**
- 5. Negotiation**
 - win-win versus win-lose

WHAT IS MANAGED?

THE THREE GOALS OF A PROJECT



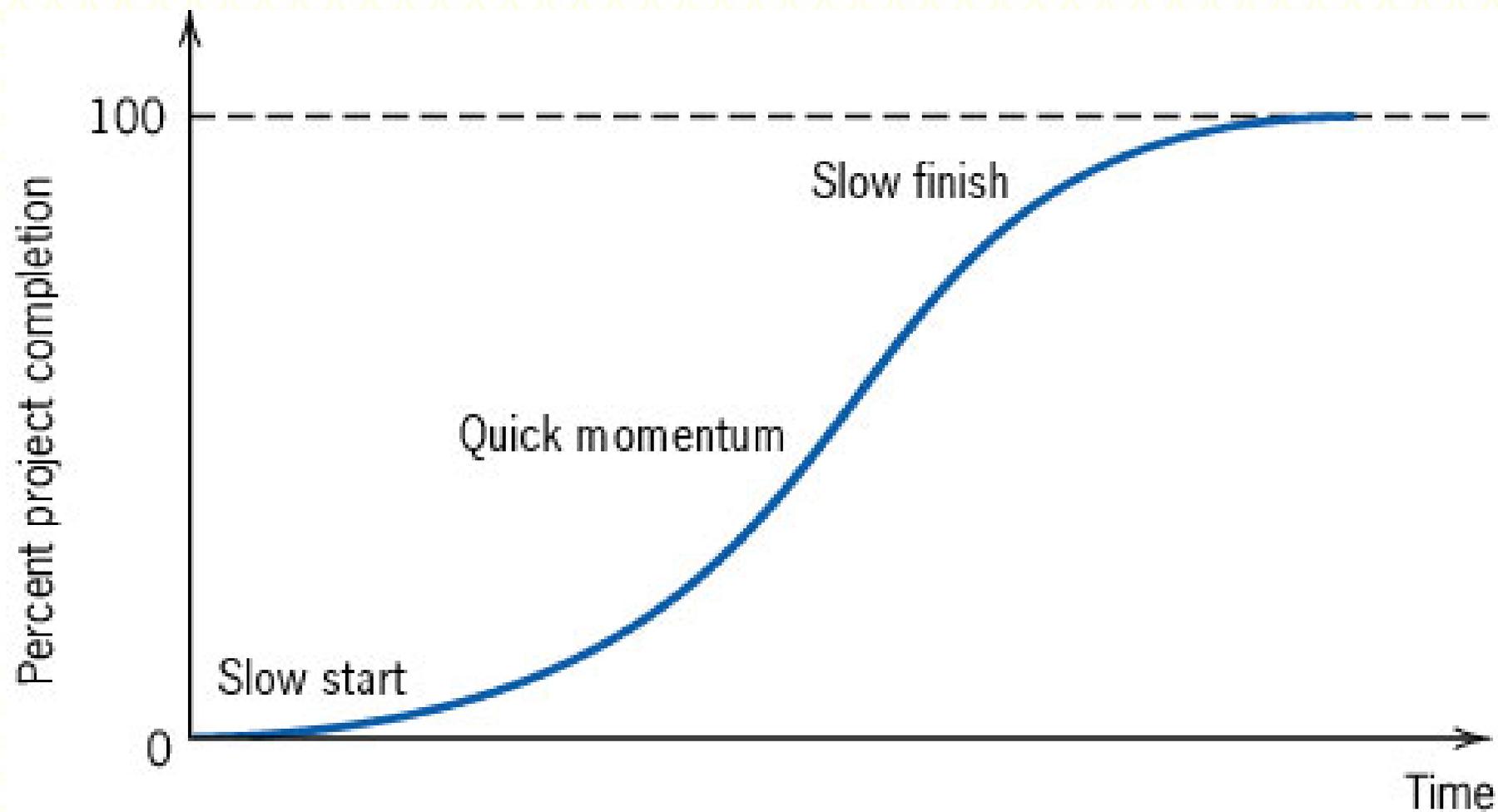
Performance, Cost, and Time Project Targets



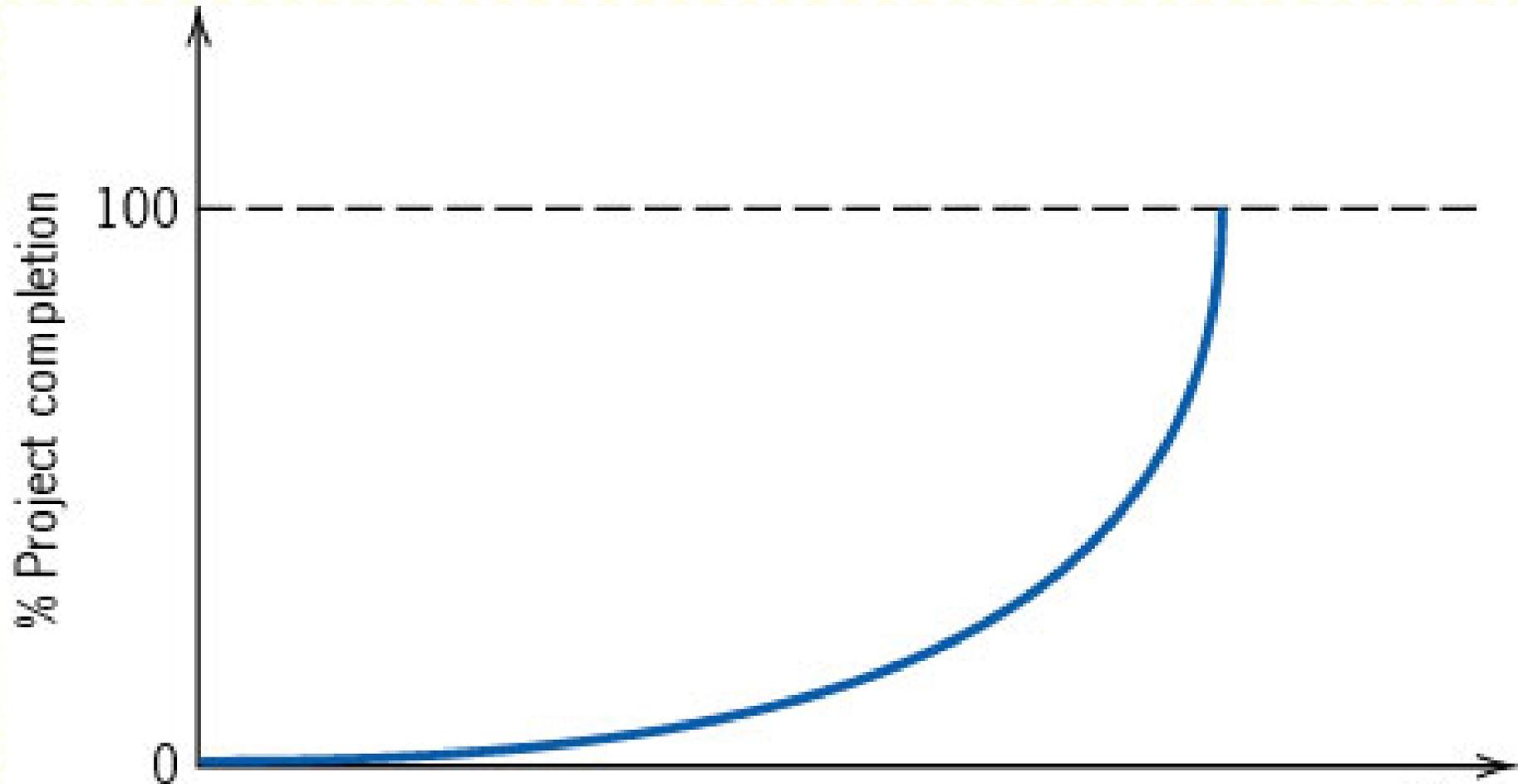
THE LIFE CYCLES OF PROJECTS



The Project Life Cycle



An Alternate Project Life Cycle



SELECTING PROJECTS



Nonnumeric Selection Methods



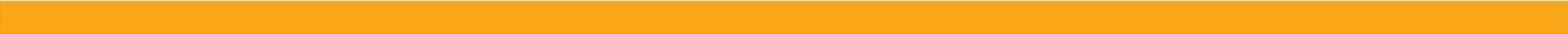
The Sacred Cow



**The Operating/Competitive
Necessity**



Comparative Benefits



Numeric Selection Methods



Financial Assessment Methods

- payback period
- discounted cash flow

Scoring Methods

- unweighted 0-1 factor method
- weighted factor scoring method



Payback Period

$$\frac{\text{Initial Fixed Investment}}{\text{Annual Net Cash Inflows}}$$

Discounted Cash Flow

$$\text{NPV (project)} = -I_0 + \sum_{t=1}^n \frac{F_t}{(1+k)^t}$$

where

I_0 = the initial investment

F_t = the net cash flow in period t

k = the required rate of return or hurdle rate

The Weighted Scoring Model

$$S_i = \sum_{j=1}^n s_{ij} w_j$$

where

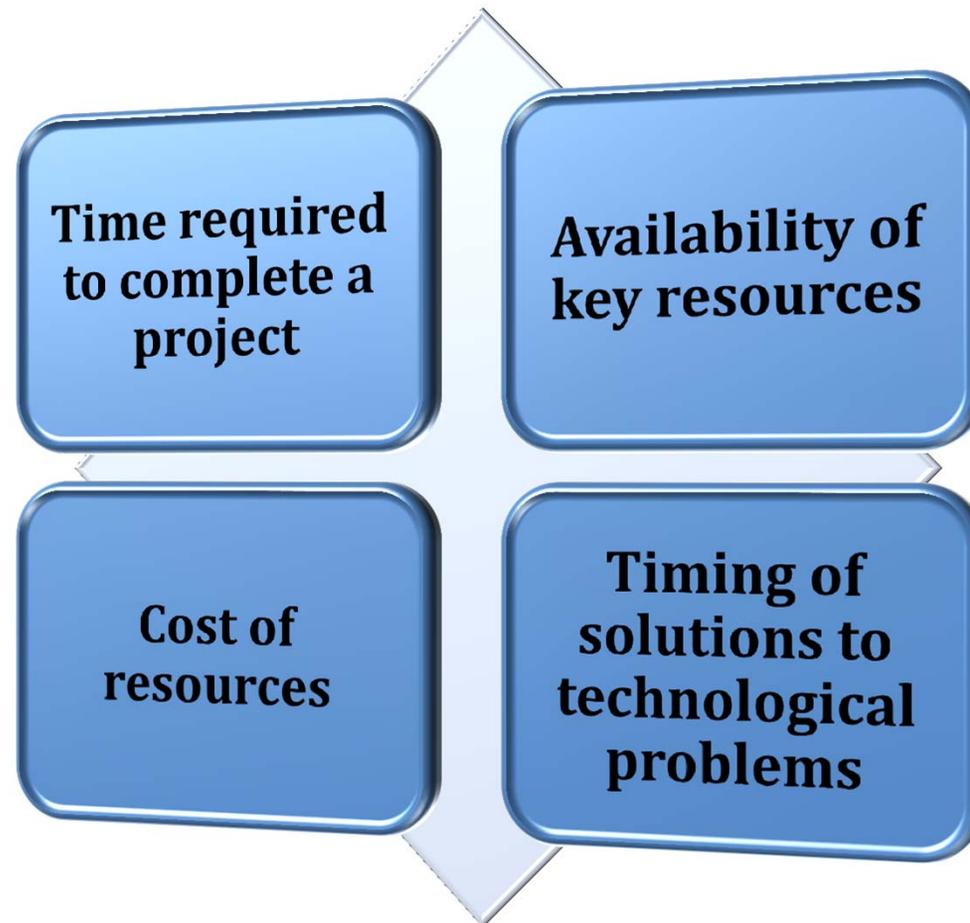
S_i = the total score of the i^{th} project

s_{ij} = the score of the i^{th} project on the j^{th} criterion

w_j = the weight or importance of the j^{th} criterion

Confronting Uncertainty – The Management of Risk

What uncertainties are encountered in project management?



Can uncertainty surrounding projects ever be eliminated?

No, but it can be managed

Risk Analysis



Estimate probabilities or distributions associated with key parameters



Develop analytic or simulation model



Analyze distribution of outcomes generated by model

Risk Analysis with Crystal Ball

- **Assumption Cells**
- **Distribution Gallery**
- **Forecast Cells**

THE PROJECT PORTFOLIO PROCESS

The Project Portfolio Process

Step 1: Establish a Project Council

Step 2: Identify Project Categories and Criteria

Step 3: Collect Project Data

Step 4: Assess Resource Availability

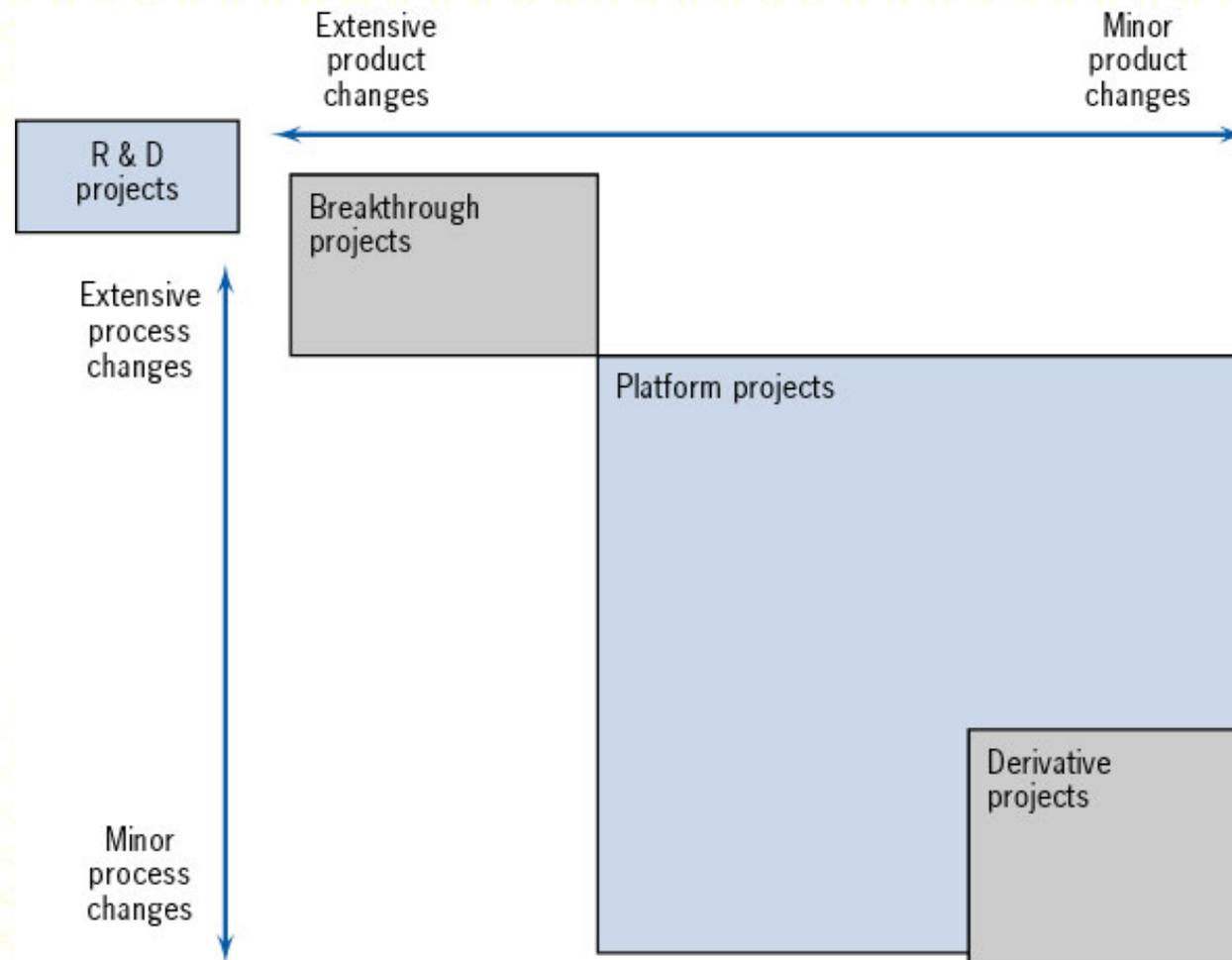
Step 5: Reduce the Project and Criteria Set

Step 6: Prioritize the Projects within Categories

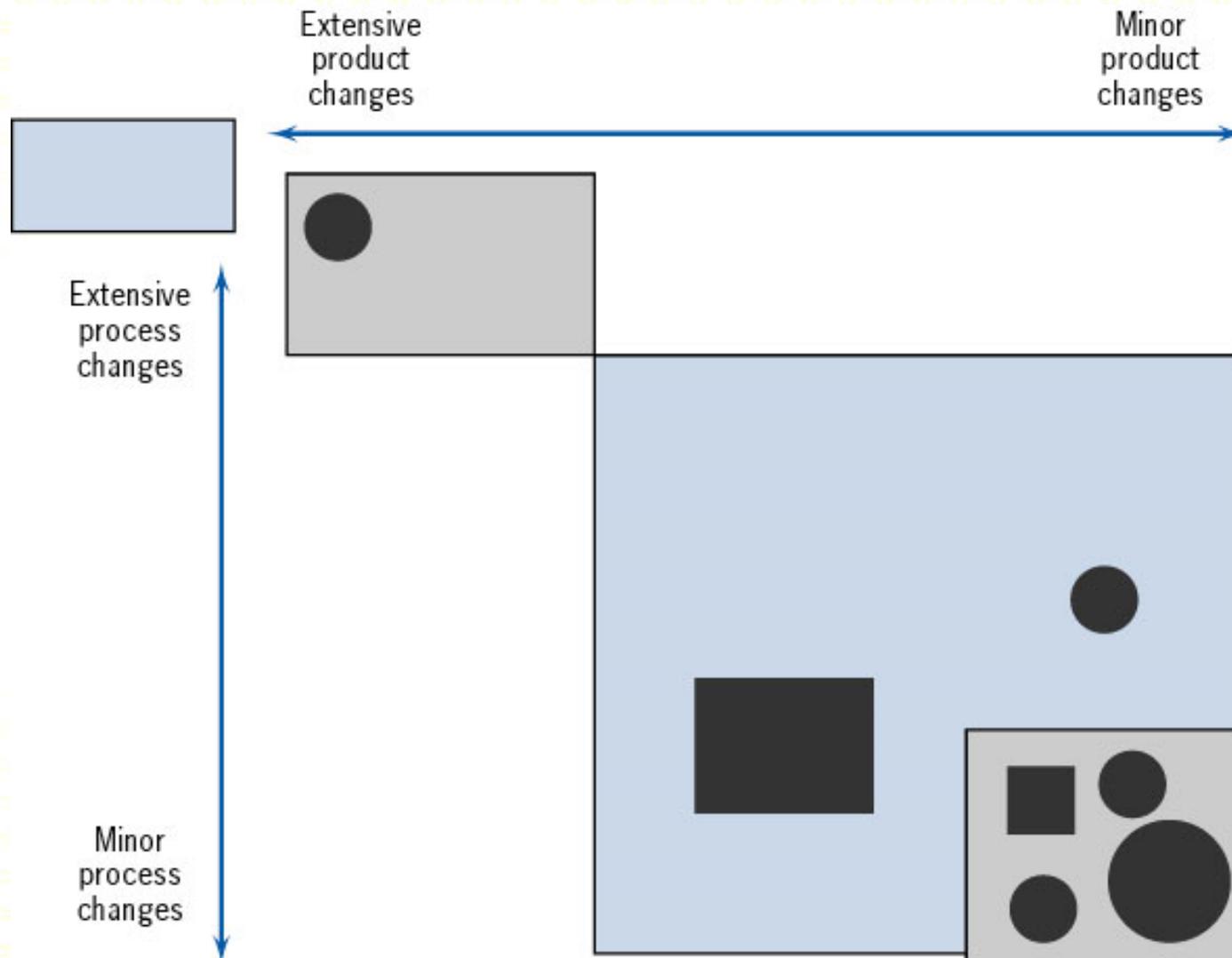
Step 7: Select the Projects to be Funded and Held in Reserve

Step 8: Implement the Process

The Aggregate Project Plan



An Example Aggregate Project Plan



Reference

- **Meredith, R. J. & Mantel, J. S. (1995). *Project Management – A Managerial Approach*. John Wiley & Sons, 5th Edition.**