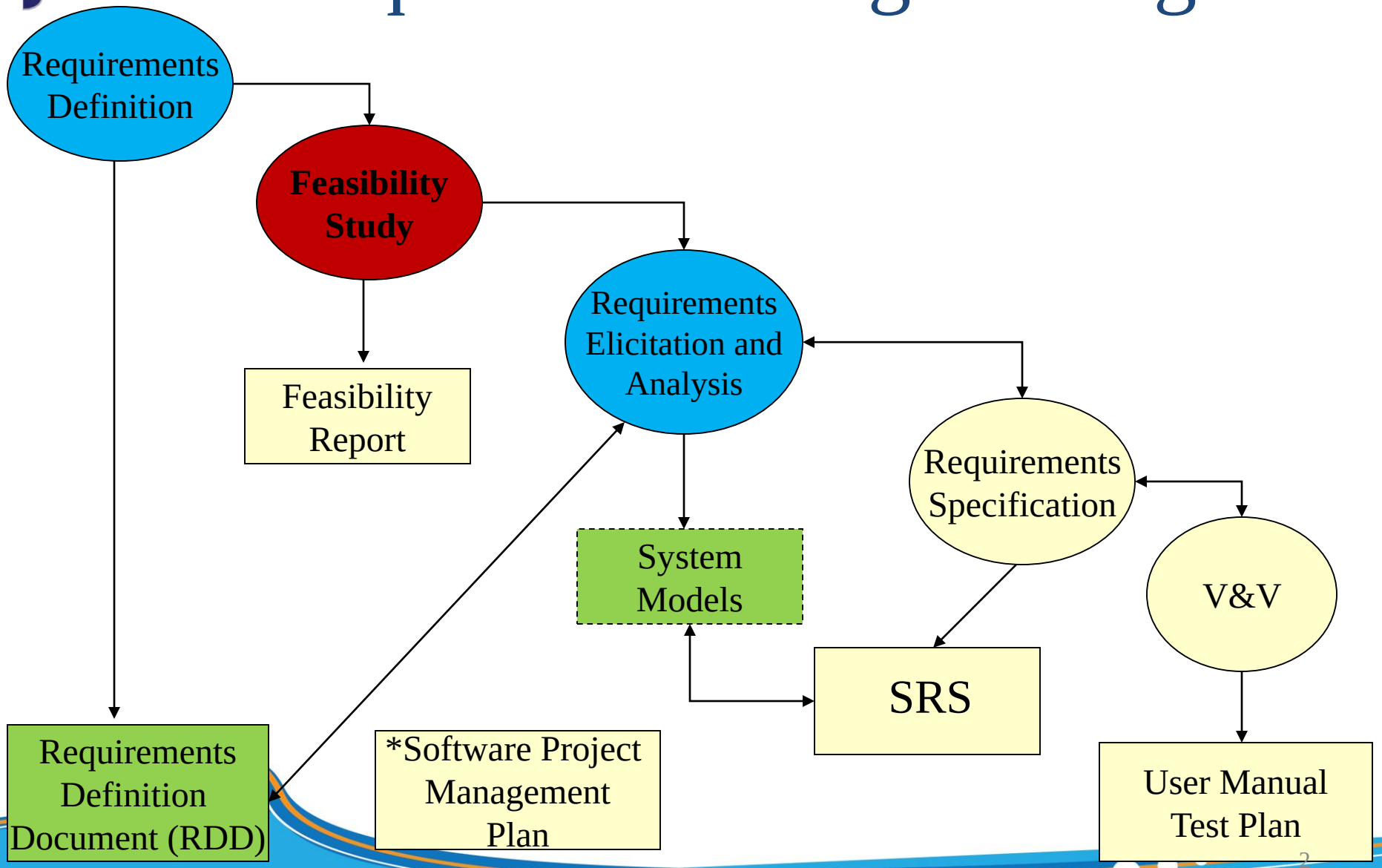
# Đánh giá tính khả thi
# Feasibility Study


KHOA CÔNG NGHỆ THÔNG TIN
TRƯỜNG ĐẠI HỌC KHOA HỌC TỰ NHIÊN

# Requirements Engineering



# Feasible

- Feasible (‘fee-ze-bel)
  - capable of being done or carried out;
  - capable of being used or dealt with successfully;
  - reasonable, likely.

# Questions:

Can we build a (software) system to meet the client's expectations?

Can we build it under the constraints (cost, time, personnel, …)?

# Motivation?

- Not everything that is imaginable is feasible.
- Not everything that is possible is feasible.
- Not everything that is technically feasible makes good business sense, i.e., is not feasible in the business environment.

# Three Main Questions About the Feasibility of a Project

- Does it contribute to the overall objective of the organization?
- Can it be implemented using current technology within cost and schedule constraints?
- Can it be integrated with existing systems (data transfer, procedures)?

# More Questions:

- What are problems with the current system/procedure, and how will the new system address those?
- How will the new system contribute to the business objectives?
- Does it require “new” technology (technology new to this organization)?
- What must be supported in order for the proposed system to function adequately?

# Feasibility Study Needs to be …

- Inexpensive
  - We are deciding whether to continue the project.
  - Shouldn't invest resources with no return.
- Quick
- Accurate
  - Conflicts with other items here …

# Cost Estimation Approaches

- Delay estimation until later
  - Accurate, but not useful
- Base estimation on similar project
  - Assumes you have this experience
- Use models to project
  - Estimates based on size
  - COCOMO (and others)

# Feasibility Study

- Dimensions of feasibility
  - Technology
  - Finance
  - Time
  - Resources

# Dimension of Feasibility Study-1

- Technology
  - Is the project technically feasible?
  - Is it within the state of the art?
  - Can defects be reduced to a level matching the application needs?
- Finance
  - Is the project financially feasible?
  - Can development be completed at a cost the software organization, the client, or the market can afford?

# Dimension of Feasibility Study-2

- Time
  - Will the  project's time-to-market beat the competition?
- Resource
  - Does the organization have the resources needed to succeed?

# Document Outline

A. DOCUMENT CONTROL
1. INTRODUCTION
2. CONSIDERATIONS
3. EXISTING SYSTEMS AND TECHNOLOGIES
4. SOLUTIONS
5. RISKS AND COST ESTIMATES
6. COMPARISON OF SOLUTIONS
7. CONCLUSIONS
8. REFERENCES

# Contents of Report

- Definition of the problem.
- Criteria for comparing solutions.
- Alternate solutions
  - Cost estimation
  - Resources
- Input: outline of system description and how it will be used.
- Output: brief report recommending if it is worth doing.

# Document Control

**Approval**

The Guidance Team and the customer, Dr. Victor Winter, shall approve this document.

**Document Change Control**

| | |
|---|---|
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**Distribution List**

This following list of people shall receive a copy of this document every time a new version of this document becomes available:

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**Change Summary**

The following table details changes made between versions of this document:

| Version | Date | Modifier | Description |
|---|---|---|---|
| 1.1 | 8/15/00 | Natalie Jones | Revised definitions |
| 1.2 | 8/30/00 | Gabe Rios | Use-case modification |
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# Introduction

- Introduction
  - Purpose of the Feasibility Report.
  - Project Description.
  - Justification for the Proposed System.
  - Desired System Functionality.
    - *Use Case Diagram*
    - *Actors*
    - *Use Case Descriptions*
  - User Interface Description.

# Considerations

- This section establishes the criteria upon which you will evaluate possible solutions.
- Identify the primary concerns related to this project.
- Decide what aspects of the system are most important. Performance? Security? Usability?
- What features in the system matter most?

# Existing Systems

- Describe existing systems that achieve or partially achieve the goals of the proposed system.
- The section includes
  - language discussions.
  - software development tools and libraries.
  - database systems.
  - other tools or software that you might use to build a solution.

# Solutions

- Describe possible solutions.
  - Each solution should be complete in the sense that it will fully achieve the goals of the proposed system.
  - If you are using existing software, that software should be described in “Existent Systems” section.
- Solution X.
  - Description (include requirements met).
  - Resources Needed.
    - Include software, hardware, experience, training.
  - Limitations.

# Risks

- Risks and Cost Estimates.
  - Risks and risk mitigations.
  - Schedule and cost estimates.

# Comparison

- Discuss how each option measures up against constraints set forth in the statement of requirements and how each compares with the others.
- Include:
  - Specific hardware and software requirements
  - Time constraints
  - Ease of use
  - Staffing levels and training required
  - User preference
  - Security issues
- A matrix that compares features is required.

# What you have to provide

- Possible solution
  - May be combination of technologies
- Estimation of cost
  - Hardware & software
  - level of effort
- Estimation of risks
  - ability to build
  - stability of technology
  - …
- Recommendations
  - Give me your professional opinion based on the criteria

# What you have to consider

- Customer needs
  - Reliability
  - Robustness
  - Maintainability
  - Delivery time
  - ???