Factors contributing to the success / failures of MIS projects

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Agenda

- Introdution
- Importance of management
- Information concepts
- System Concepts
- Development of MIS
- Technology
- Factors contributing to the success / failures of MIS

Introduction

- Initial concept of MIS was to process data from the organization and present it in the form of reports as regular intervals
- MIS gives information through data analysis
- Need systematic planning and design
- A blend of principles, theories and practices of the Management, Information and System giving rise to single product known as Management Information System (MIS)

Importance of management

- Process of planning, organizing, staffing, coordinating and controlling the efforts of the members of the organization to achieve common stated goals of the organization

Information concepts

- Information has a value in decision making while data does not have.
- Information brings clarity and creates an intelligent human response in the mind.
- Major characteristics
  - Provides Information
  - Improves representation of an entity
  - Updates the level of knowledge
  - Has a surprise value
  - Reduces uncertainty
  - Aids in decision making

System concepts

- Describes the subjects.Ex:
  - traffic system
  - education system
  - business system, etc.
- System provides a meaningful framework for describing and understanding the features and problems of the subject.
- Has a set of elements arranged in an orderly manner to accomplish an objective.

Development of MIS

- Calls for long range plans for success
- Not for data processing for expeditious generation of reports
- Develop for information processing for management action and decisions.
- Flexible enough to deal with the changing information needs of the organization
- Should be conceived as an open system
- MIS plan is to be linked to the business plan.

Development strategy

- Online, batch, real time.
- Approach to the system development (OOAD,SASD)
- Database versus Conventional Approach
- Distributed versus Decentralized processing; one Database versus Multiple database
- In-house versus external
- Customized development versus the use of packages.

Categories of information

- Manpower
- Operational
- Functional
- Knowledge
- Decision support

Quality management

- All the input is processed and controlled.
- All updating and corrections are completed before the data processing begins.
- Inputs are subjected to validity checks.
- The access to the data files is protected.
- Back-up of the data and files are taken.
- The system audit is conducted from time to time.
- The system modifications are approved by following a set procedure which begins with authorization of a change to its implementation followed by an audit.
- Systems are developed with a standard specification of design and development.
- Computer system processing is controlled through programme control, process control and access control.

Factors Contributing to Success

- MIS is integrated into the managerial functions
- MIS is developed following strict software engineering principles.
- Appropriate information processing technology is selected.
- MIS is oriented, defined and designed in terms of the user's requirements and its operational viability is ensured.
- MIS is kept under continuous surveillance,
- MIS focuses on the results and goals
- MIS is not allowed to end up generating noise in the information
- MIS must consider all human behavioral factors.
- MIS is easy to operate
- MIS design, has basic potential to quickly meet new needs of information.

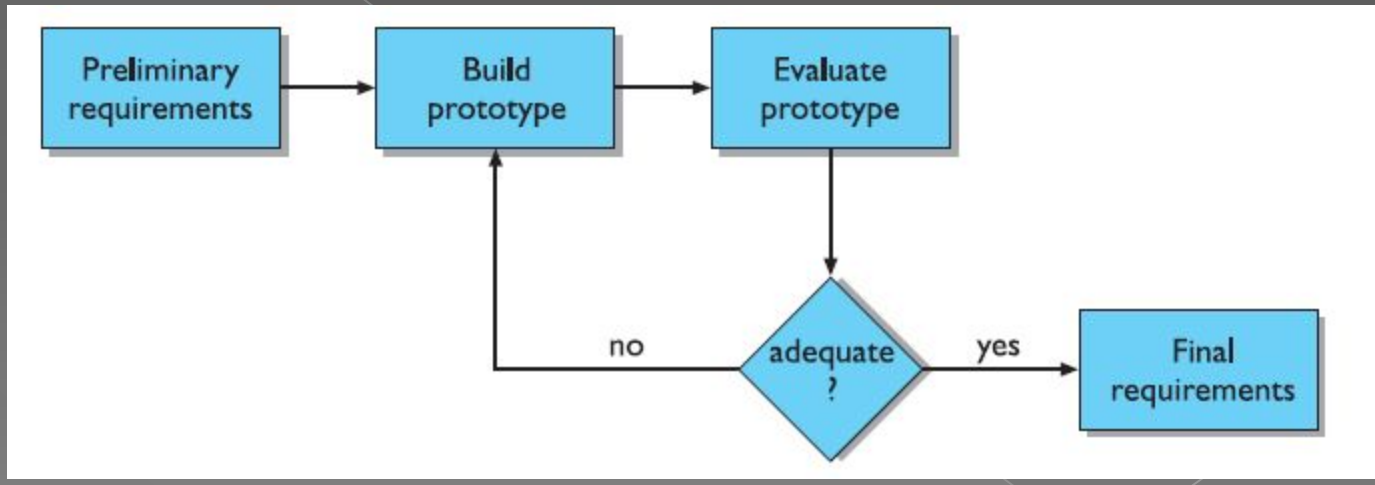
Factors Contributing to Failures

- MIS is conceived as a data processing and not as an information processing system.
- MIS does not provide that information which is needed by the managers.
- Underestimating the complexity in the business systems and not recognizing it in the MIS design.
- Adequate attention is not given to the quality control aspects of the inputs, the process and the outputs.
- Lack of training and appreciation by the users.
- Lack of user friendliness.
- Dependence on the system personnel
- A belief that the computerized MIS can solve all the management problems of planning and control of the business.
- Lack of administrative discipline in following the standardized systems and procedures.
- Incomplete testing of the system.
- Lack of Software maintenance

Some best practices

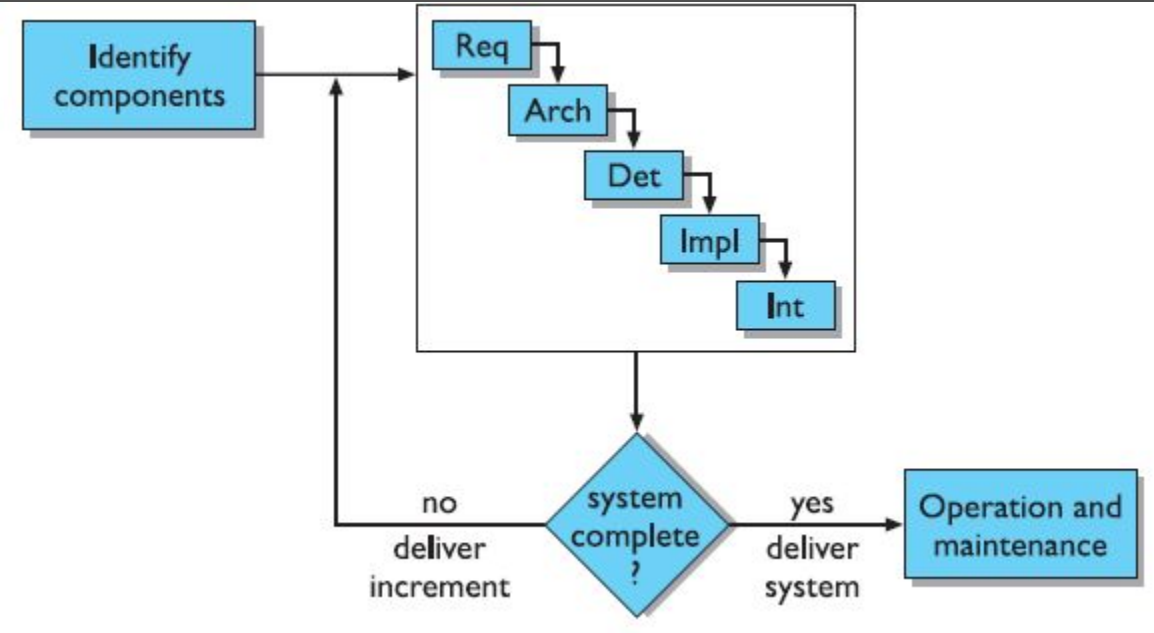
Throw-away prototyping

- Prototype is built and tested.
- Design knowledge gained
- The actual prototype is discarded.



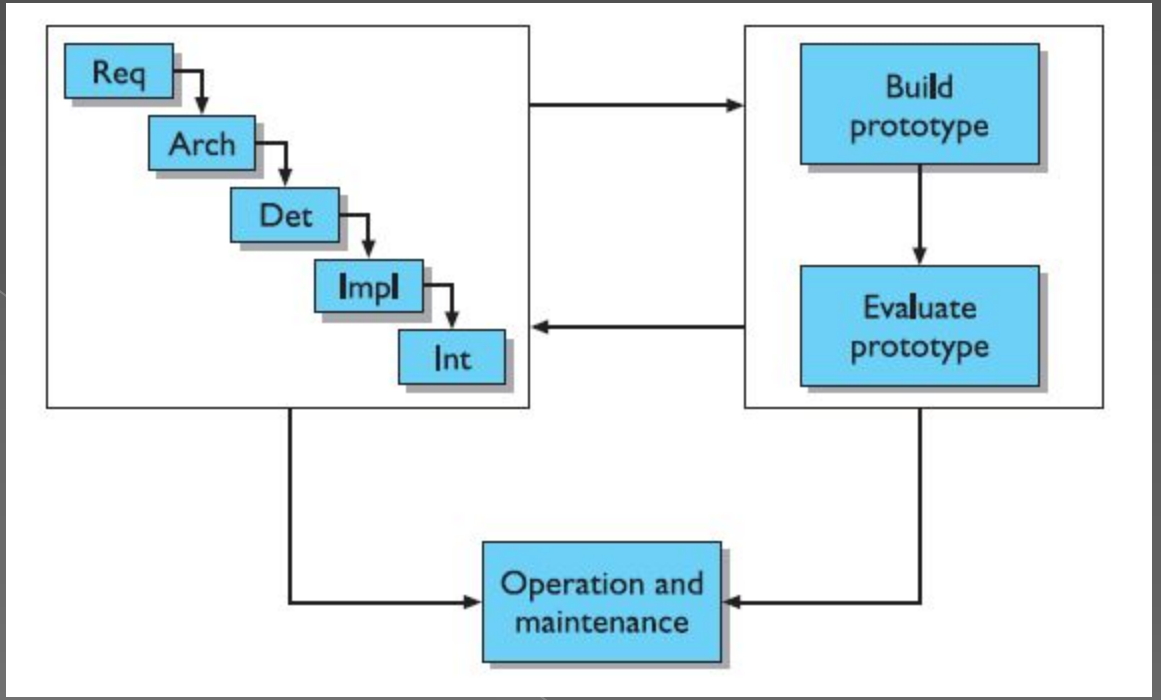
Incremental prototyping

- Final product built as separate components.
- One overall design for the final system, but it is partitioned into independent and smaller components.
- Final product is as a series of products.
- Each subsequent release including one more component.



Evolutionary prototyping

- Prototype is not discarded and serves as the basis for the next iteration of design.
- Actual system is seen as evolving from a very limited initial version to its final release.
- Fits in well with the modifications which must be made to the system during the operation and maintenance activity.



Use cases

- A use case captures a contract between the stakeholders of a system about its behavior.
- Describes the system's behavior under various conditions as it responds to a request from one of the stakeholders, called the *primary actor.*
- Fundamentally a text form (flow charts, sequence charts, Petri nets are alternatives)
- A way to capture and model known functional requirements.
- They are not all of the requirements but fractional. They describe the behavioral portions
- They describe:
  - a business' work process,
  - to focus discussion about upcoming software system requirements, but not be the requirements description,
  - the functional requirements for a system, or
  - to document the design of the system.
- Do not contain performance requirements, business rules, user interface design, data descriptions, finite state machine behavior, priority, and probably some other information.

Casual vs Fully dressed

innovate achieve lead

Casual version:

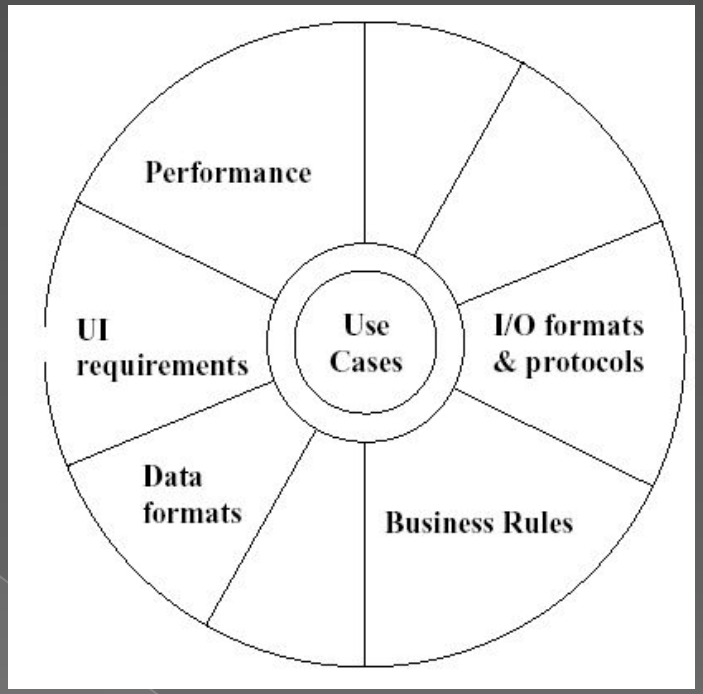
- The Requestor initiates a request and sends it to her or his Approver. The Approver checks that there is money in the budget, check the price of the goods, completes the request for submission, and sends it to the Buyer. The Buyer checks the contents of storage, finding best vendor for goods. Authorizer: validate Approver's signature. Buyer: complete request for ordering, initiate PO with Vendor. Vendor: deliver goods to Receiving, get receipt for delivery (out of scope of system under design). Receiver: register delivery, send goods to Requestor. Requestor: mark request delivered.

Fully dressed version:

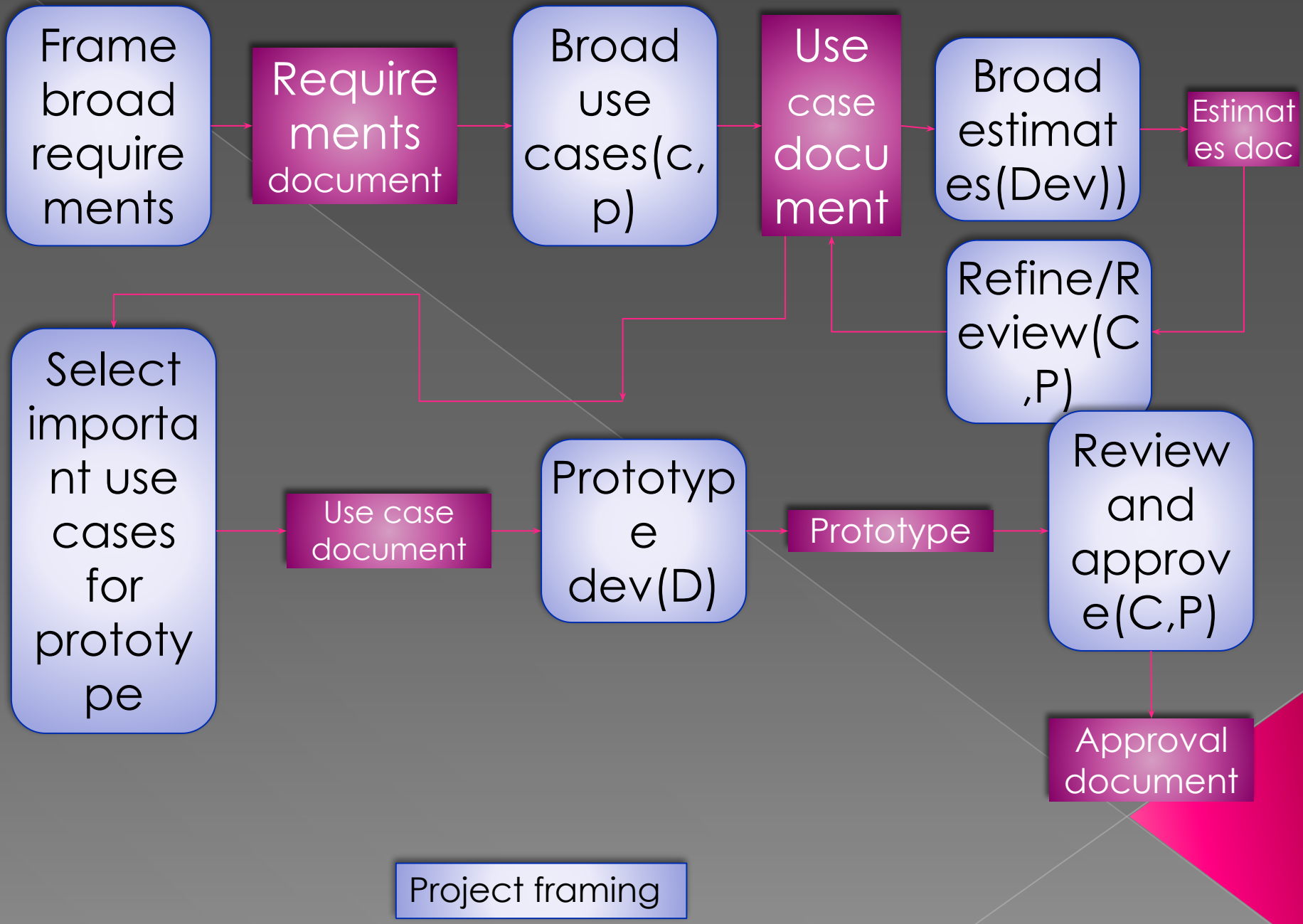
- Primary Actor: Requestor
- Goal in Context: Requestor buys something through the system, gets it. Does not include paying for it.
- Scope: Business - The overall purchasing mechanism
- Level: Summary
- Stakeholders and Interests:
  - Requestor: wants what he/she ordered, easy way to do that.
  - Company: wants to control spending but allow needed purchases.
  - Vendor: wants to get paid for any goods delivered.
- Precondition: none
- Minimal guarantees: Every order sent out has been approved by a valid authorizer.
- Success guarantees: Requestor has goods, correct budget ready to be debited.
- Trigger: Requestor decides to buy something.
- Main success scenario:
  - Requestor: initiate a request
  - Approver: Check money in the budget, check price of goods, complete request for submission
  - Buyer: Check contents of storage, find best vendor for goods

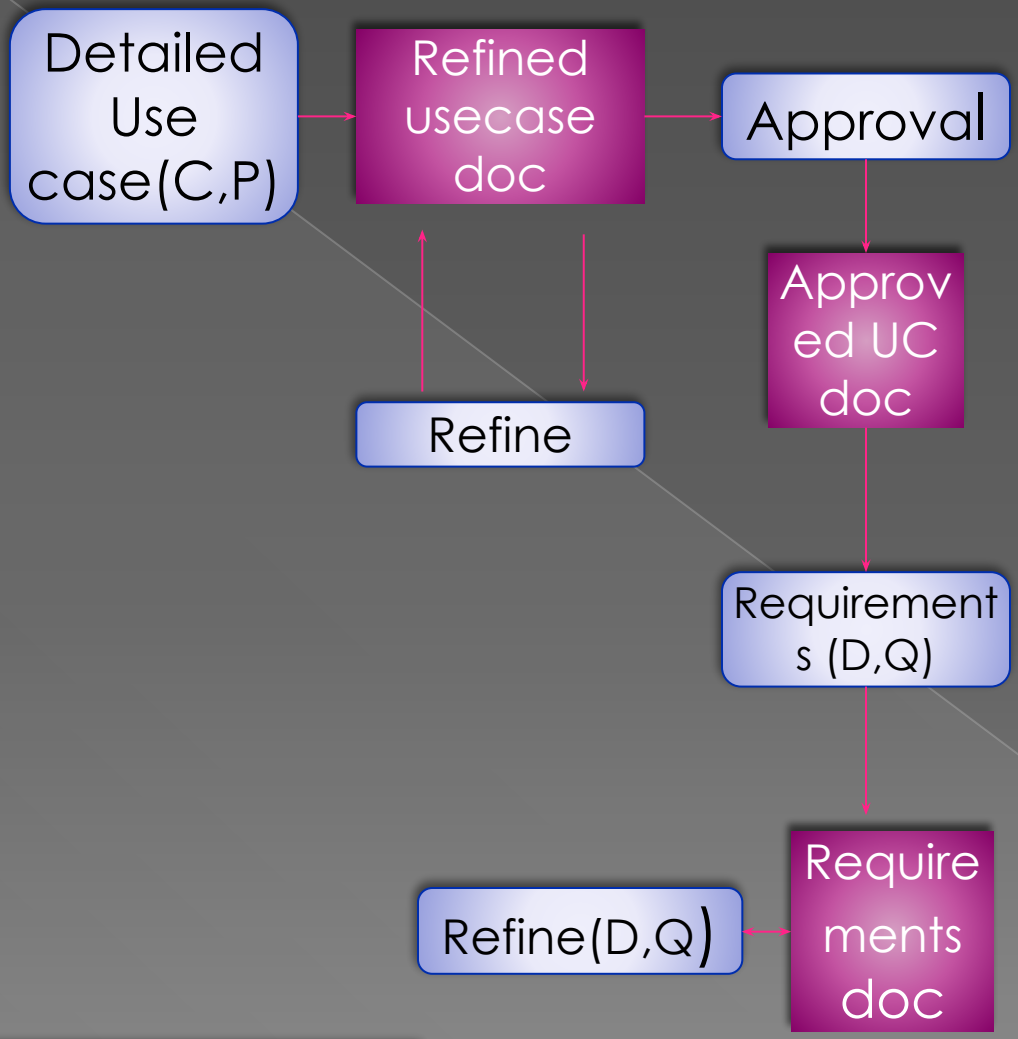
Hub-and spoke model

- Connect many other requirements details.
- Is a communication device between the different stakeholders on the project.
- Starting point to estimate the cost and complexity of the system.
- Uncover something surprising, something that the requirements givers had not thought about.

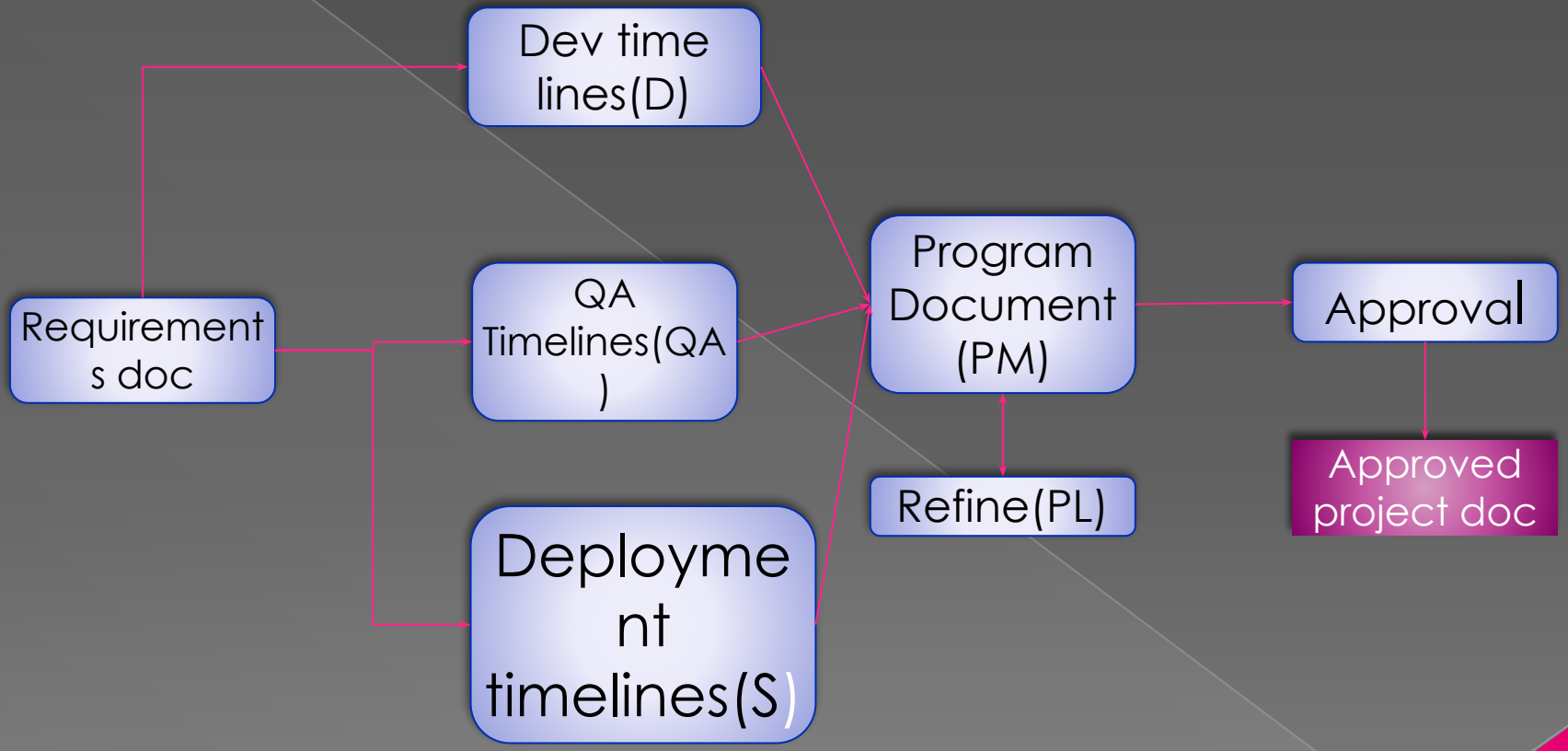


A Case study- Practical SDLC

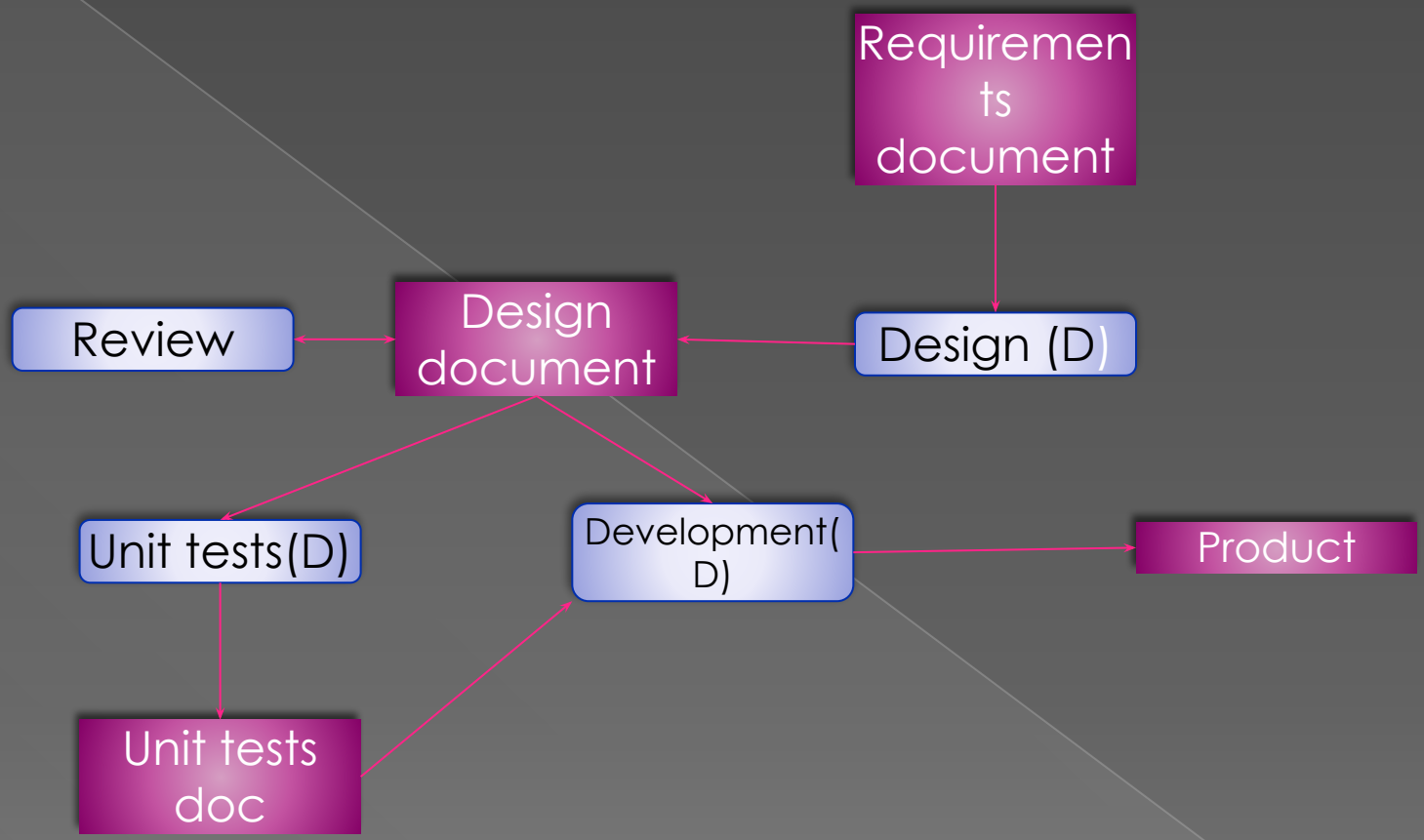

Frame broad require ments
Require ments document
Broad use cases(c, p)
Use case docu ment
Broad estimat es(Dev))
Estimat es doc
Refine/R eview(C ,P)
Select importa nt use cases for prototy pe
Use case document
Prototyp e dev(D)
Prototype
Review and approv e(C,P)
Approval document
Project framing



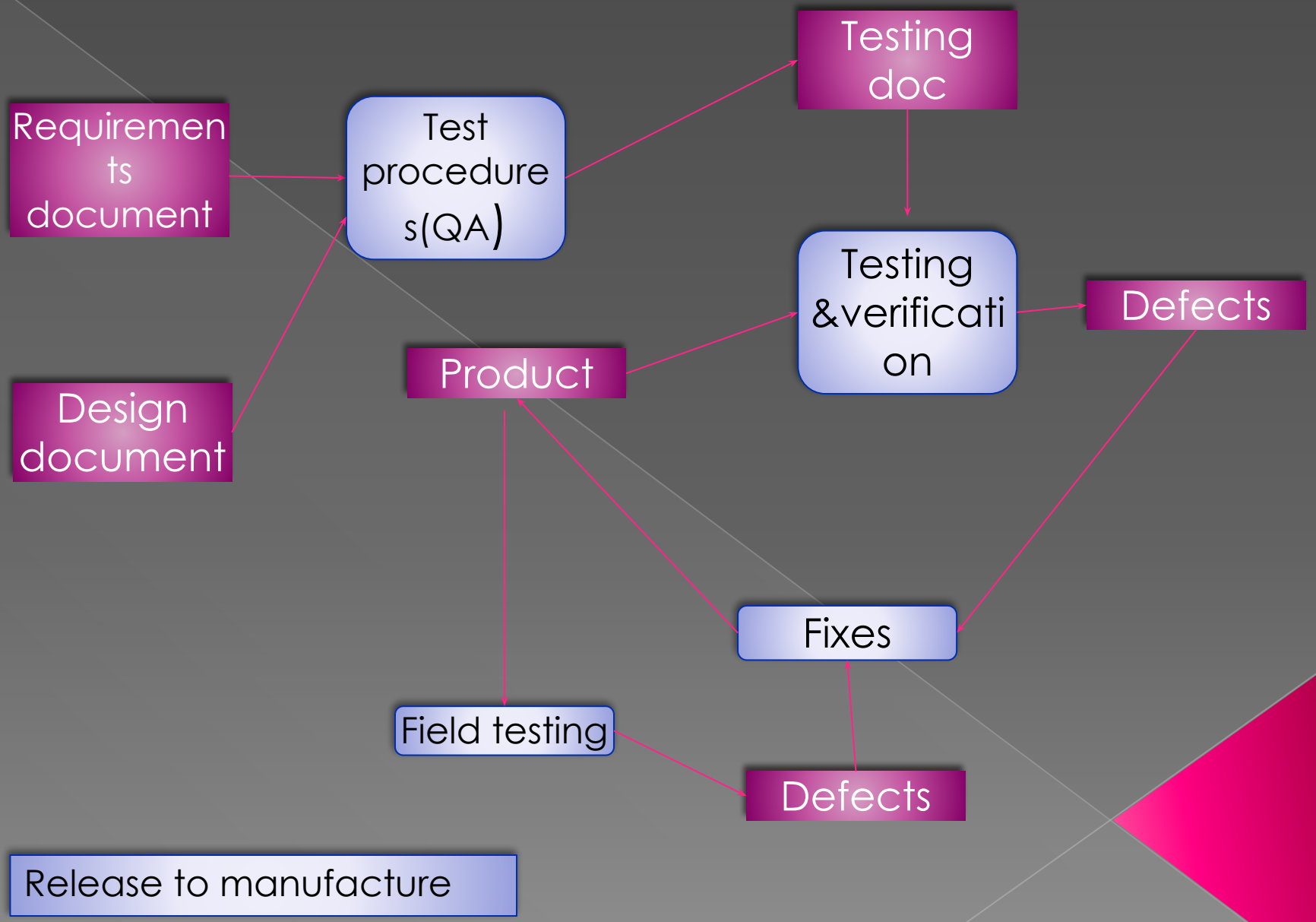
Requirements management



Program management



Development


Requirements document
Test procedures(QA)
Testing doc
Testing &verification
Defects
Product
Design document
Fixes
Field testing
Defects
Release to manufacture

Summary

- User involvement essential
- Quality control
- Maintenance
- Follow SDLC

Thanks for your attention