ANALYSIS OF IT PROJECTS

SUMMARY

ELSA ESTEVEZ
Universidad Nacional del Sur
Universidad Nacional de La Plata
CONICET, Argentina

SUMMARY – CONCEPTS

[DEFINITION – R. WYSOCKI]

A project is a sequence of unique, complex and connected activities that have an objective or purpose and that must be completed in a specific time, within the budget and according to the specifications.

[PROJECT LEADER - DEFINITION]

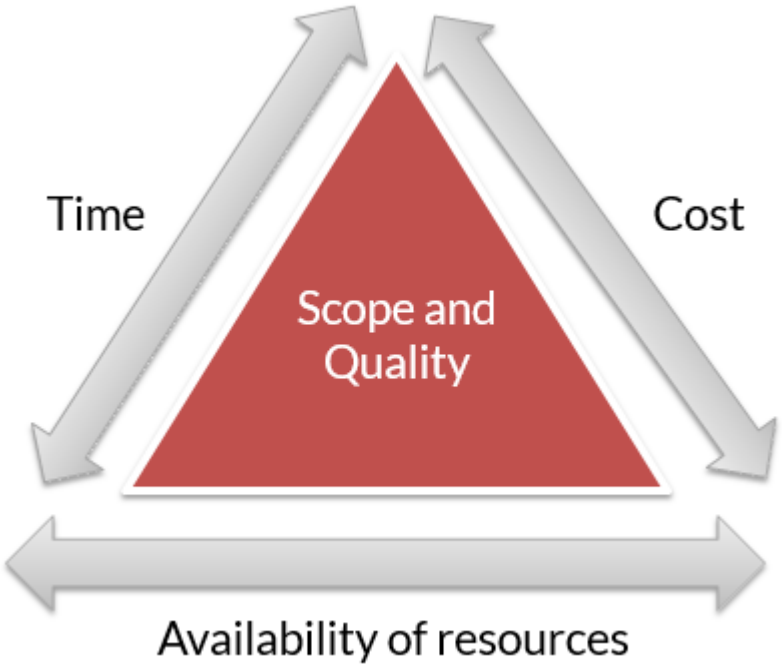
It is responsible for identifying the needs of the users and managing the financial, material and human resources, to obtain the expected results in the allocated time and with the required quality.

SUMMARY – PROJECT LEADER TASKS

- develop the project plan
- identify requirements and the scope of the project
- communicate and report to interested parties
- administer human and material resources
- control time
- identify and control risks
- manage costs and budget
- ensure quality
- evaluate project performance

SUMMARY – PROJECT PARAMETERS

- Scope
- Quality
- Resources
- Cost
- Time



SUMMARY – PROJECT MANAGEMENT

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[DEFINITION – PROJECTS IN CONTROLLED ENVIRONMENT (PRINCE)]

It is the planning, delegation, monitoring and control of all aspects of the project and the motivation of the participants to achieve the objectives of the project within the expected performance objectives in terms of time, cost, quality, scope, benefits and risks.

[DEFINITION – PROJECT MANAGEMENT INSTITUTE]

Project management is the application of knowledge, skills, tools and techniques to project activities to meet project requirements.

Project management is achieved through the use of processes such as: initiate, plan, execute, control and close.

[DEFINITION – METHOD 123]

It is about the skills, tools and management processes necessary to carry out a successful project.

SUMMARY – PROJECT MANAGEMNT LIFECYCLE

1) Definition
2) Planning
3) Execution
4) Control/Monitoring
5) Closure

What is produced at each stage?

SUMMARY – PROJECT DEFINITION

- Formulate the problem / opportunity
- Establish the goal of the project
- Define the objectives of the project
- Identify the critical success factors
- List assumptions, risks, barriers

SUMMARY – POS

The main deliverable of the project definition stage is the Project Overview Statement (POS).It includes:

- Statement of the problem
- Aim and goals
- Critical Factors of Success (CSF)
- Assumptions-Risks-Barriers.

It must be 1 page and may have attachments. It clearly specifies what is going to be done.

Project Overview Statement

PROJECT OVERVIEW STATEMENT	Project Name:	Project Sponsor:	Project Manager:
Problem/Opportunity:			
Goal:			
Objectives:			
Success Criteria:			
Assumptions, Risks, Obstacles:			
Prepared by:	Date:	Approved by:	Date:

SUMMARY – PROJECT GOALS

Goals should be SMART:

Specific - be specific in aiming the goal

Measurable - establish a measurable indicator of progress

Achievable - assign the goal to a person to complete it

Realistic - specify what can really be done with the available resources

Time-bounded - specify the time needed to achieve the goal

SUMMARY – DETAILED PROJECT PLANNING

- Identify project activities
- Estimate the duration of the activities
- Determine resource requirements
- Build and analyse the project plan
- Prepare the project proposal

SUMMARY – PROJECT PROPOSAL

The deliverable of the detailed project planning stage is the project proposal that includes:

- a detailed description of each activity
- the resources required to complete each activity
- the estimated start and completion dates of each activity
- the estimated cost and the date of completion of the project.

In some organizations, the detailed project planning also includes:

- feasibility study
- statements of impacts on the environment
- cost-benefit analysis
- analysis of alternatives, ...

SUMMARY – PROJECT EXECUTION

- Recruit and organize the project team
- Establish the operating rules for the team
- Ensure similar level of project resources
- Plan work packages
- Document work packages

SUMMARY – PROJECT MONITORING

- Establish progress reporting system
- Install change control tools / processes
- Define the process to escalate problems
- Monitor the progress of the project versus the plan
- Review project plans

SUMMARY – PROJECT CLOSURE

- Install the deliverables
- Archive final reports and documentation
- Run a post-installation audit
- Celebrate!!! (Take a vacation)

SUMMARY - PROGRAM

- It is a group of related projects that are managed in a coordinated manner to obtain benefits.
- Deals with outcomes or benefits.
- It provides an umbrella under which projects can be coordinated.
- Integrates projects so that it can produce a result greater than the sum of project parts.

SUMMARY - METHODOLOGY

A methodology for software development contributes to define:

1) who is doing what
2) when to do it
3) how to reach a certain goal
4) the inputs and outputs for each activity

SUMMARY – AGILE METHODOLOGIES

- Agile software development is a paradigm of software development methodologies based on agile processes.
- Agile development is a term derived from the Agile Manifesto.
- Agile methodologies examples are: SCRUM, eXtreme Programming (XP), Dynamic Systems Development Method (DSDM), Crystal
- Agile methodologies value:
  - ✓ individuals and their interaction more than processes and tools
  - ✓ the software that works over an exhaustive documentation
  - ✓ collaboration with the client more than contract negotiation
  - ✓ more the response to change than following a plan.

SUMMARY – SCRUM

It is a framework for agile development processes.

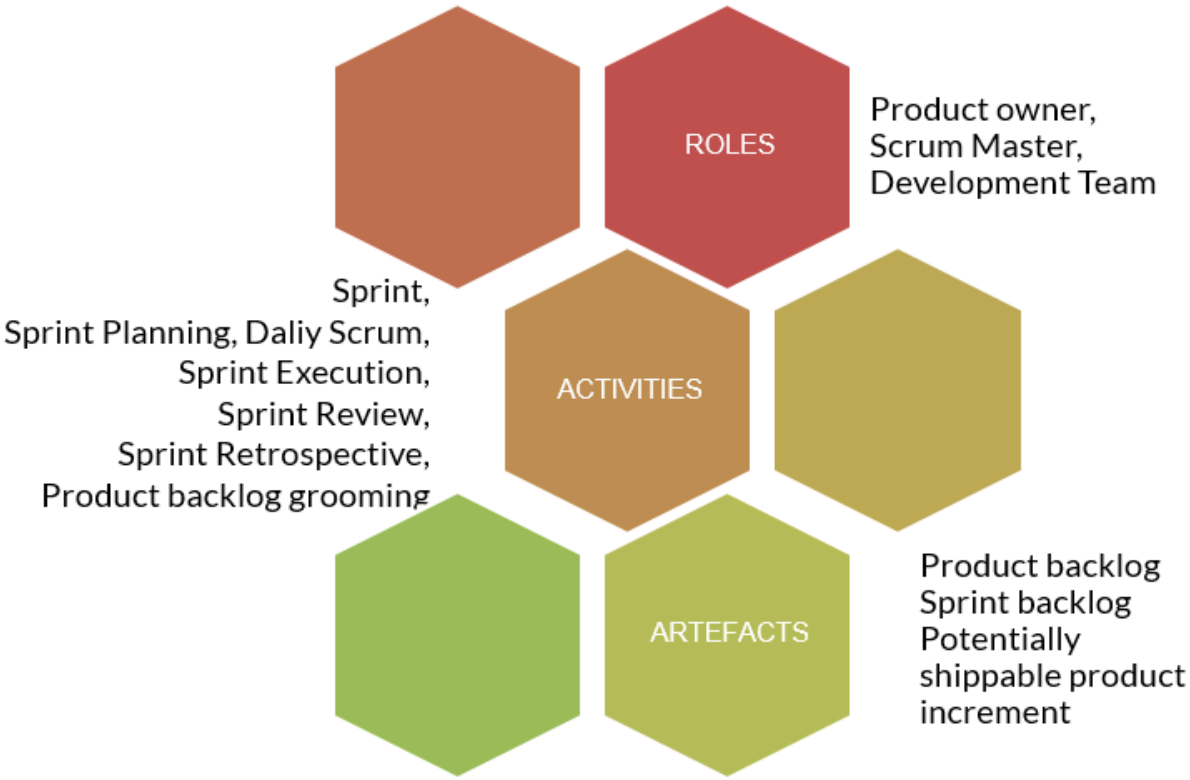
Features:

The development is done through iterations (Sprints).

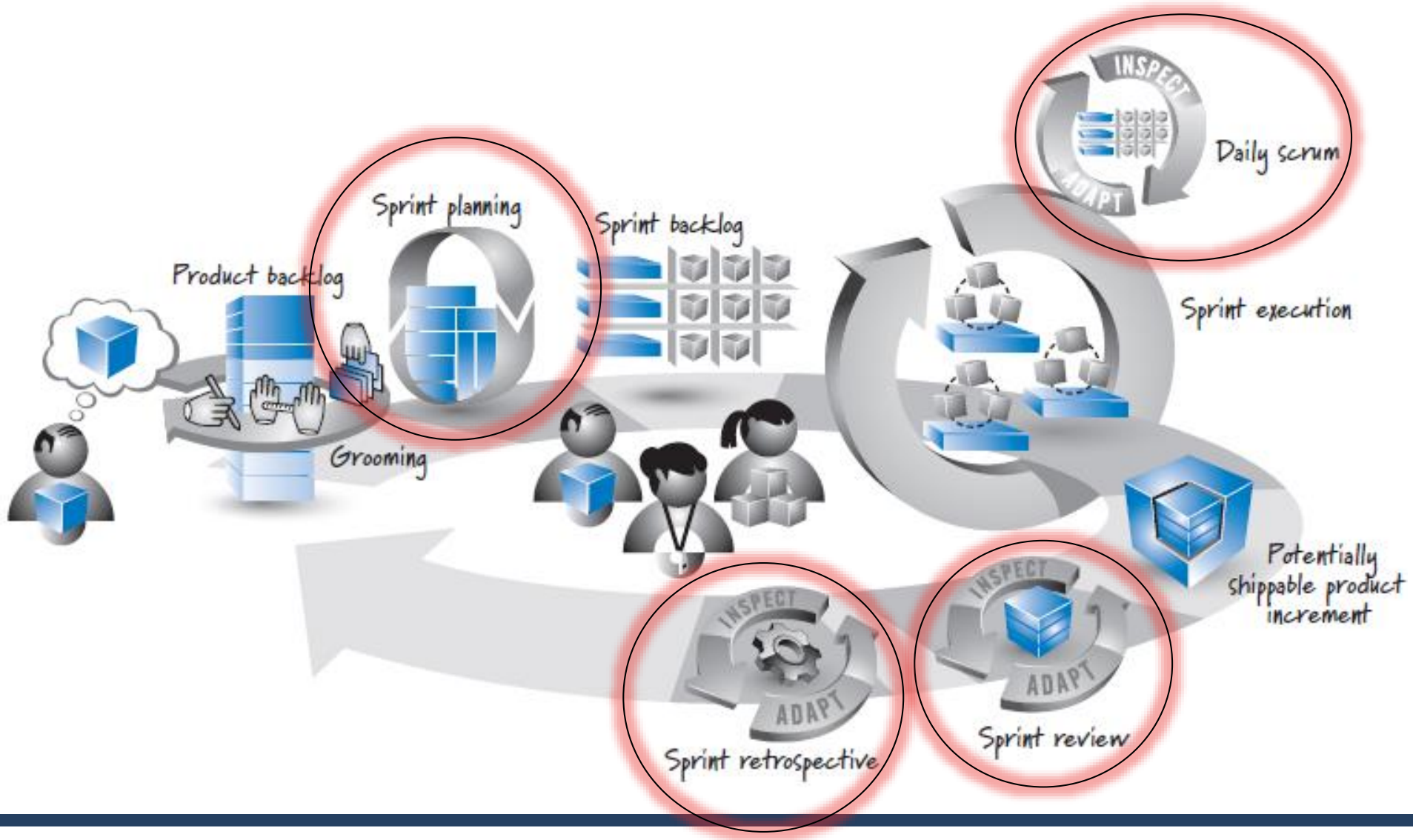
The result of each of them is an executable increase that is shown to the client.

There are daily 15-mins meetings throughout the project of the development team for coordination and integration.

SUMMARY – SCRUM PRACTICES



SUMMARY - SCRUM MEETINGS



SUMMARY – RUP

RUP aims at ensuring the production of high-quality software that meets the needs of its end-users, within a predictable schedule and budget.

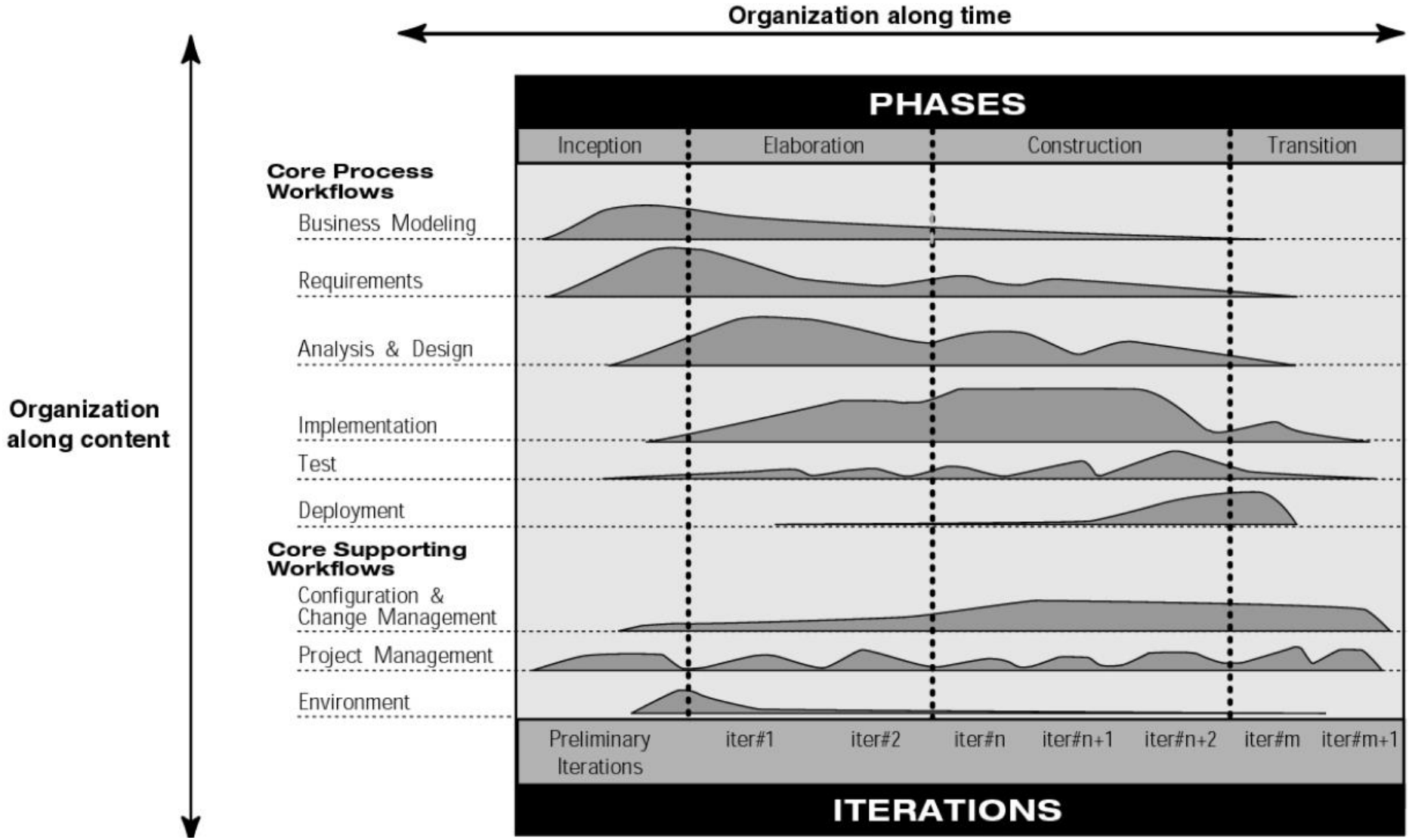
Main features:

1) iterative and incremental

2) use case-driven

3) architecture-centric

SUMMARY – RUP DEVELOPMENT PROCESS



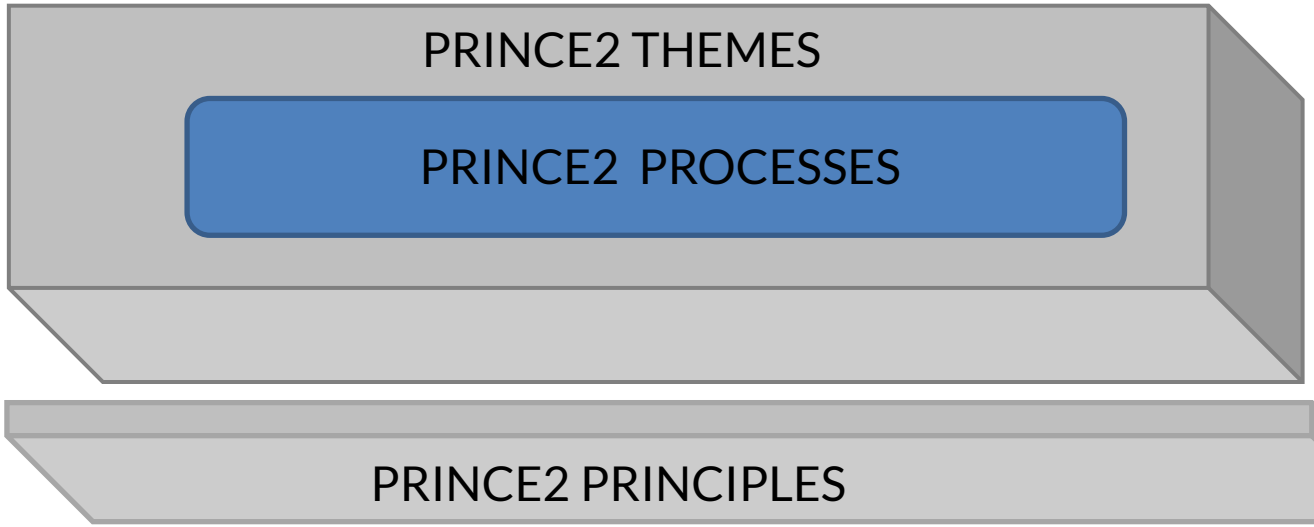
SUMMARY – PRINCE2

PRINCE stands for Projects In Controlled environments) and is a project management method.

It was created by the UK Government as a standard for government information system projects.

It is a structured methodology defining very clear roles and responsibility areas

SUMMARY – PRINCE COMPONENTS OVERVIEW



Ref: https://www.alexos.com

SUMMARY – PRINCE2 COMPONENTS DETAILS

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Principles	Themes	Processes
1) Continued business justification	1) Business case	1) Starting up a project
2) Learn from experience	2) Organization	2) Initiating a project
3) Defined roles and responsibilities	3) Quality	3) Directing a project
4) Manage by stages	4) Plans	4) Controlling a stage
5) Management by exception	5) Risk	5) Managing product delivery
6) Focus on products	6) Change	6) Managing stage boundary
7) Tailor to suit the project environment	7) Progress	7) Closing a project

SUMMARY – PMBOK

It defines Organizational Project Management as a strategy execution framework utilizing project, program, and portfolio management as well as organizational enabling practices to consistently and predictably deliver organizational strategy producing better performance, better results, and a sustainable competitive advantage.

It involves:

- Portfolio management
- Program management
- Project management

SUMMARY – ORGANIZATIONAL INFLUENCES

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Factors influencing projects

- Organizational culture and styles
- Organizational communications
- Organizational structures
- Organizational process assets
  - ✓ Processes and procedures
  - ✓ Corporate knowledge base
- Enterprise environmental factors

SUMMARY – PMBOK KNOWLEDGE AREAS

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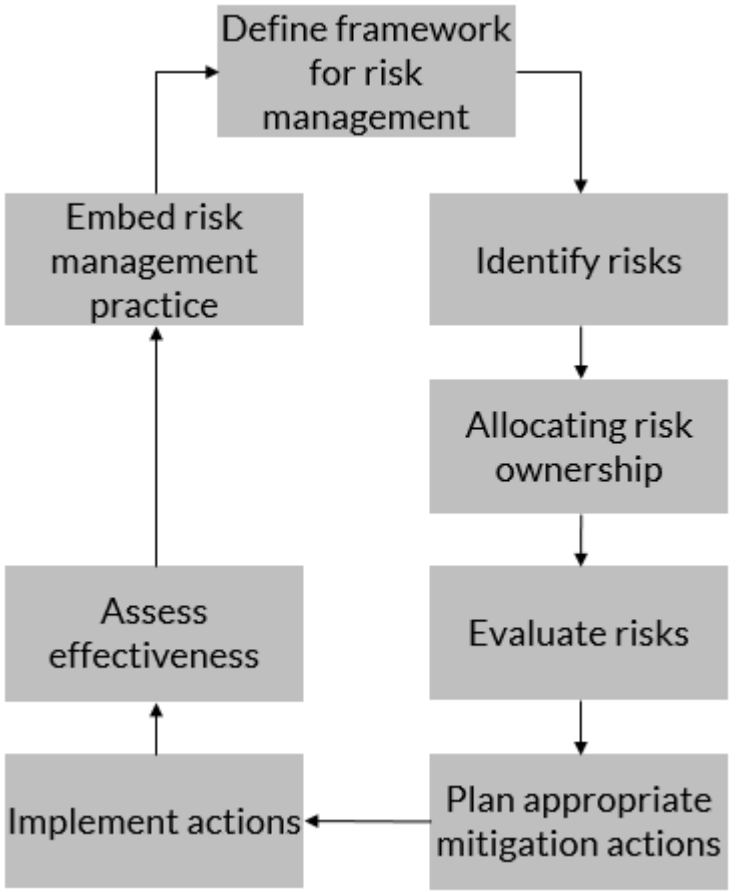
Knowledge Areas	
1	Project Integration Management
2	Project Scope Management
3	Project Time (Schedule) Management
4	Project Cost Management
5	Project Quality Management
6	Project Resource Management
7	Project Communications Management
8	Project Risk Management
9	Project Procurement Management
10	Project Stakeholder Management

SUMMARY – RISK MANAGEMENT

Project risk is an uncertain event or condition that, if it occurs, has a positive or negative effect on one or more project objectives such as scope, schedule, cost, and quality.

Project risk management refers to identifying, analyzing, and responding to risk throughout the life of a project and in the best interests of meeting project objectives.

Risk Management Process



SUMMARY – RISK MITIGATION ACTIONS

Risks with high probability and high impact should be managed.

Each risk has a range of possible mitigation actions summarized as 'the four Ts':

Transfer	Transfer the risk to the third party best placed to manage it.
Terminate	Terminate the risk by adjusting the programme so that the risk no longer applies.
Tolerate	Tolerate the risk - basically the 'do nothing' option. Typically used for 'low-impact' risks.
Treat	Treat the risk by identifying and implementing mitigating actions that address either the probability or impact of the risk and so contain it at an acceptable level.

SUMMARY – TESTING

Testing a program means running it under controlled conditions, such as to observe its output or results.

Failure	the physical manifestation of a defect It happens when a software component produces an incorrect result or does not perform the correct action.
Fault	a manifestation of an error in software, also known as Defect or Bug.
Error	a mistake made by a software developer (human action)

Software Testing Process:

- Requirement Analysis
- Test planning
- Test cases designing
- Test environment setup
- Test execution -> Defect reporting
- Test closure

Many thanks!

Elsa Estevez
ecestevez@gmail.com