# PROJECT MANAGEMENT

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# What is Project Management?

- Project management involves the process by which an organization uses resources effectively to achieve a specific goal. Project management ensures the successful completion of the project by organizing work processes, resources and the team in an orderly manner.
- Project management processes are divided into five groups: initiation, planning, execution, control and closure.
- Every project has different goals, resources and timelines, and project management aims to provide a unique focal point.

# Advantages of Project Management?

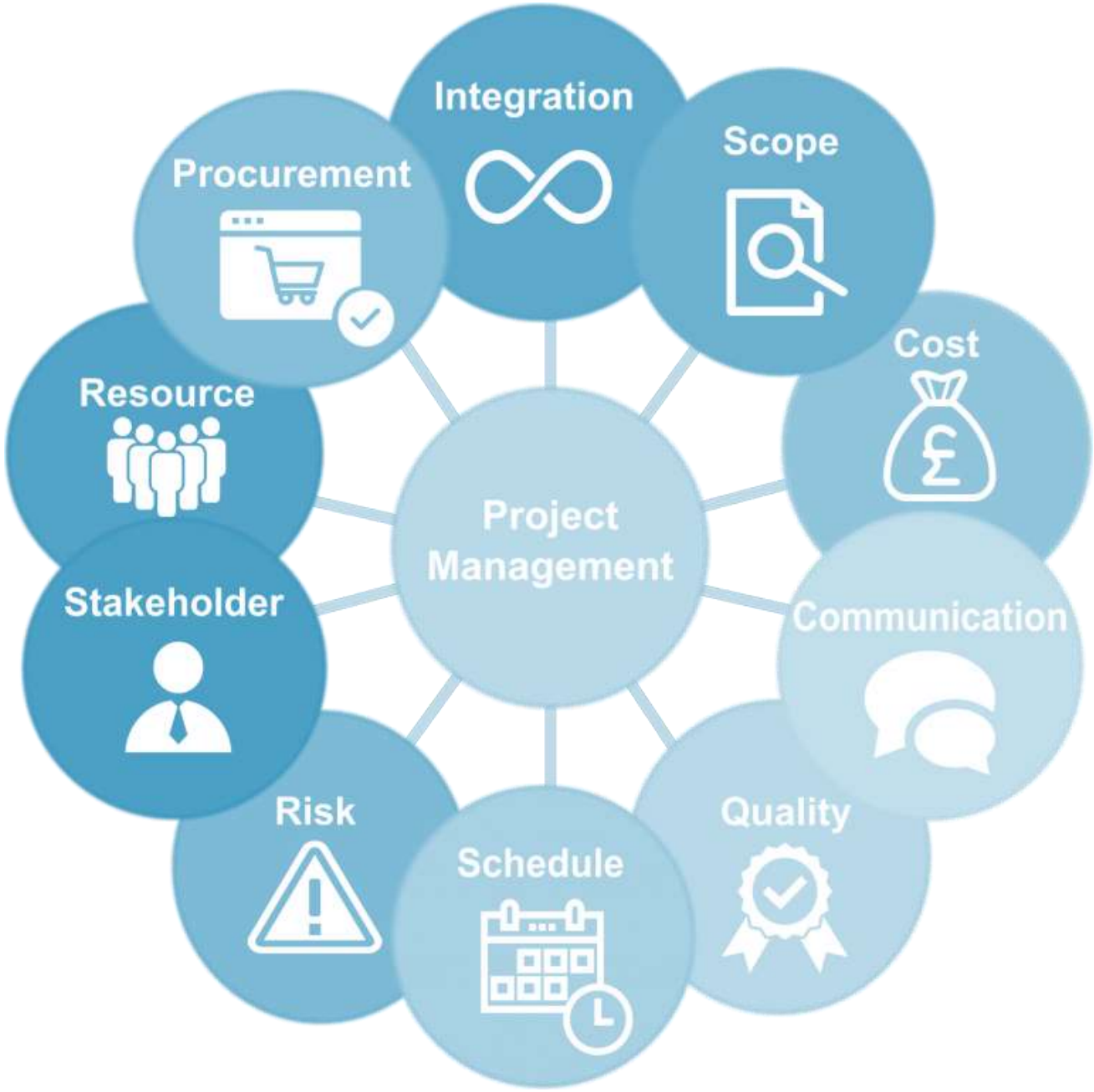
- Projects involve employees in decision-making processes.
- Identifies a way of dealing with risks that is a systems engineering approach.
- It allows to realize some changes in connection with the company's strategies.

# What is Project Management in Software?

- The main characteristics that distinguish software projects from other projects are: invisibility, complexity, relevance and flexibility.
- Invisibility: For example, a construction project is observable as it is being built, but a software project is not visible to that degree. Software project management processes can be expressed as a process that makes visibility invisible.

# What is Project Management in Software?

- Complexity: Software products are inherently more complex than other projects.
- Conformity: The goal in software projects is conformity with customer requirements.
- Flexibility: The ability to easily make changes to software products ensures the flexibility of the project.


Integration
Scope
Procurement
Cost
Resource
Project Management
Stakeholder
Communication
Risk
Schedule
Quality

# Classification of Projects

- Projects can vary to create different technical products. Therefore, the characteristics of a project must be defined, depending on how it is planned and managed.
- In making this definition, the following factors need to be considered: responsibilities to users, embedded systems versus information systems, and goals versus product.

# Project Types

- By Degree of Complexity; projects are classified according to their degree of complexity as high, medium, low, very low.
- According to the Technology Level, projects are divided into practical knowledge, best available technology, advanced technology and invention.
- According to Risk Level; projects are divided into levels according to their risk level: dangerous, high, medium, low and very low.
- According to Project Duration; if projects last less than 3 months, they are called short projects, if they last between 3 and 9 months, they are called short-medium projects, if they last between 9 and 18 months, they are called medium-long projects and if they last more than 18 months, they are called long projects.

# Project Integration Management

- Creating a Project Initiation Document; this is the document where the project officially starts and the project is put into operation.
- Establishment of the Management Plan is the document that defines how the project will proceed and how the work in the project will be carried out.
- Directing and Managing the Execution of the Project; manages the execution of the activities planned in the project management plan by focusing on the plan and delivering it by the project deadline.

# Project Integration Management

- Monitoring and Controlling the Work; it is aimed to make the project more efficient by analyzing and evaluating the work in the project and exchanging information.
- Performing Integrated Change Controls is the process where changes in planning are controlled in the project management process.
- Project and Project Phase Closure is the project closure process that covers the planned activities of large-scale projects.

# Project Risk Management

- The uncertainty that prevents the achievement of the desired quality in the targeted outputs in these processes is the subject of project risk management.
- Project risk management is divided into sub-processes. These processes are

# Project Risk Management

- Qualitative Risk Analysis is the prioritization of identified risks among them.
- Quantitative Risk Analysis; the probabilities and effects of identified risks are specified in numerical expression.
- Planning Strategies to Respond to Risks; the activities to be carried out to eliminate the risks that may arise in the project or to reduce their effects are determined.
- Monitoring and Controlling Risks is the section where project risks are monitored, new risks are identified and their effectiveness is monitored and controlled through analysis.

# Project Scope Management

- It is the process that includes the necessary transactions of the project and the project scope document is prepared. Project scope management is divided into sub-processes. These processes are
  - Scope Planning is the stage where existing stakeholders and project needs are identified.
  - Defining the Scope is the process where the products, services and outputs of the project are defined in detail.

# Project Scope Management

- Establishment of the Work Breakdown Structure; project documents are updated and edits are made to the dictionary of the work breakdown structure.
- Verification of Scope is the process of checking with techniques whether the project is meeting expectations as the steps progress.
- Scope Control includes the follow-up of scope control phases by evaluating project and product scopes.

# Project Time Management

- One of the success criteria of projects is the completion of the project within the planned time. However, project time management is divided into sub-processes. These processes are
  - Defining Activities is the process of defining the activities that occur within min. resources and time by reducing the work in the project to basic steps in line with the expected needs and the accompanying time.
  - Sequencing of Activities; since the activities within the project are interrelated, they need to be sequenced correctly.

# Project Time Management

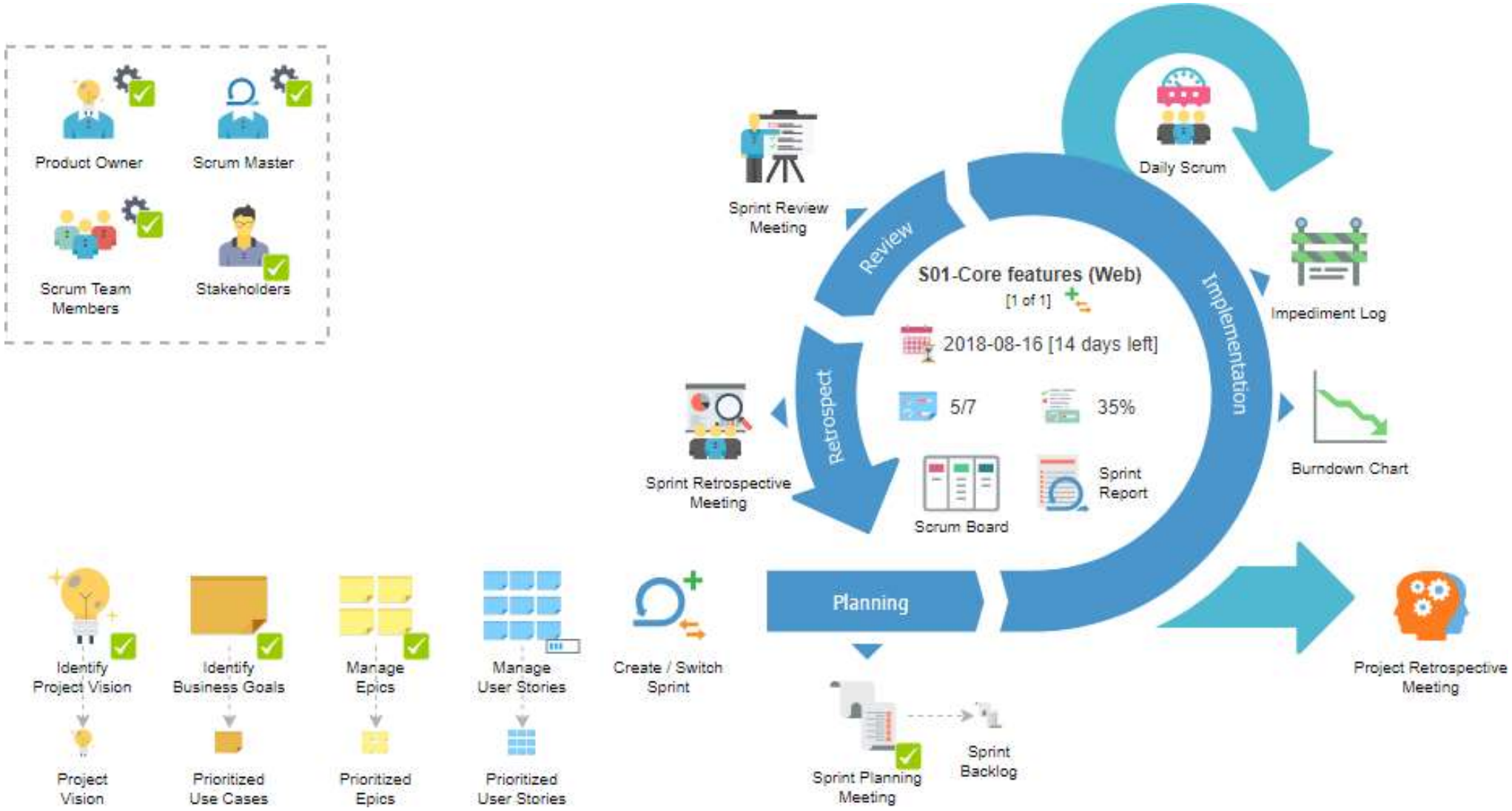
- Estimation of All Activity Resources; the amount of tools and equipment required for the activities defined in the project is estimated.
- Estimation of Activity Durations; the durations of activities that may affect the entire project process should be determined in a realistic manner.
- Timeline Development is the stage where activity durations, resource needs and timeline constraints are determined for the project schedule.
- Control of the Timeline; the control of the project management plan and timeline stages should be ensured and the comparison with the targeted point in the project should be made at this stage.

# Project Quality Management

- Project quality management is divided into sub-processes. These processes are
  - Quality Planning is the section created to determine project objectives.
  - Quality Assurance Implementation is the process that ensures the efficient operation of the quality management processes identified in project management.
  - Implementation of Quality Control is checking that the outputs obtained at the end of the project comply with quality standards.

# Project Management Methodologies

- Waterfall Methodology
- Agile Methodology
- Scrum Methodology
- Kanban Methodology


Product Owner
Scrum Master
Scrum Team Members
Stakeholders
Sprint Review Meeting
Review
Daily Scrum
Implementation
Impediment Log
S01-Core features (Web)
[1 of 1]
2018-08-16 [14 days left]
5/7
35%
Retrospect
Sprint Retrospective Meeting
Scrum Board
Sprint Report
Burndown Chart
Identify Project Vision
Identify Business Goals
Manage Epics
Manage User Stories
Create / Switch Sprint
Planning
Project Retrospective Meeting
Project Vision
Prioritized Use Cases
Prioritized Epics
Prioritized User Stories
Sprint Planning Meeting
Sprint Backlog

# Waterfall Methodology

- Waterfall methodology approaches the project process in a linear way. Each phase is completed in turn and the next phase is started. This methodology is based on a specific plan from the beginning to the end of the project and is often used in large and complex projects. Phases
  - Needs Analysis: The requirements of the project are determined.
  - Planning The project is planned and budgeted.
  - Implementation The implementation of the plan begins.
  - Testing and Validation: The application is tested and validated.
  - Commissioning The project is completed and put into use.
  - Maintenance and Support: Maintenance and support is provided during the lifetime of the project.

# Agile Methodology

- Agile is a methodology based on a flexible and iterative approach. The project process is divided into small and rapid iterations. At the end of each iteration, a usable product emerges. This methodology aims to adapt quickly to changing requirements. Basic Principles
  - Individuals and Interactions: Communication and cooperation between people is important.
  - Functional Software: Functional software must be delivered within a specific timeframe.
  - Customer Cooperation: The customer should be continuously involved in the project.
  - Openness to Changes: It should be able to respond quickly to changing requirements.

# Scrum Methodology

- Scrum is a framework of the Agile methodology and is widely used, especially in software development projects. Scrum is designed to increase flexibility, ensure fast delivery and maximize customer feedback. Main Roles
  - Product Owner: Sets the goal of the product and sets priorities.
  - Scrum Master Ensures that the team runs smoothly.
  - Development Team: The team that creates the software.

# Scrum Methodology

- Key Components:
  - Sprint: A collection of tasks planned to be completed in a specific time frame.
  - Backlog: A list of work to be done for the project.
  - Daily Scrum Meeting: Short daily meetings allow team members to share their progress.

# Kanban Methodology

- Kanban, which literally means label, is a tool used in information transmission in the lean concept. In the pull system, it is the tool used in information transmission that aims to trigger the movement of the material or the start of production.

- Kanban is known as the alerting tool that authorizes and instructs the production or withdrawal of materials in a pull system. Within a just-in-time production system, kanban has a great pulling power in the distribution of small pieces of stock to production centers.

# Kanban Methodology

- Kanbans always move in the opposite direction to the flow of production, but from end to end with the physical units, linking the stages of production in an orderly way. This system is also known as backward progression.

- The Kanban system uses simple cards to keep close track of production. The simple logic here is as follows: No workstation is allowed to produce a product unless it is requested by the station following it, meaning that each station is the customer of the station before it. This simple view prevents working with accumulated inventory. There is no need to use computers at all.

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