



# Project Management Methodologies

## Concepts

# Introduction to project management methodologies

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- ▶ There are different project management methodologies to benefit different projects.
- ▶ For example, there is a specific methodology, which NASA uses to build a space station while the Navy employs a different methodology to build submarines.



# Introduction to project management methodologies

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- ▶ A methodology **is a model**, which project managers employ for the **design**, **planning**, **implementation** and **achievement** of their project objectives.



- ▶ The methodologies used in projects management **help to define the scope** of the project, **time constraints**, **what resources are available** and when the project needs to be **delivered**



# What is a Project Management Methodology?

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- ▶ Methodologies for project management are about **specifying what tasks need to be undertaken**, and **when to do them** in order to maximize the use of time and resources.
- ▶ They will outline **which tasks to complete first**, bearing in mind subsequent tasks that rely on the previous ones being completed.



# Definitions

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- ▶ **Project Management Methodology** is a strictly defined combination of logically related practices, methods and processes that determine how best to plan, develop, control and deliver a project throughout the continuous implementation process until successful completion and termination.
- ▶ It is a scientifically-proven, systematic and disciplined approach to project design, execution and completion.



## Purpose

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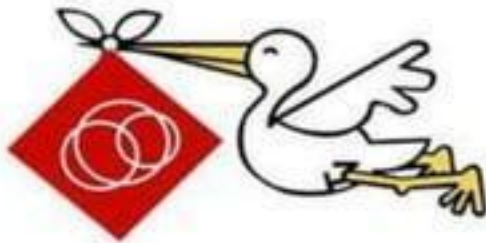
- ▶ The *purpose* of project methodology is to **allow for controlling** the entire project management process through effective decision making and problem solving, while ensuring the success of specific processes, approaches, techniques, methods and technologies.
- ▶ Typically, a methodology provides a skeleton for describing every step in depth, so that a project manager will know what to do in order to deliver and implement the work according to the schedule, budget and client specification.
- ▶ The goal of the project management **methodology is to assist all project managers within an organization to accurately execute the project management plan.**



# Methodology Types

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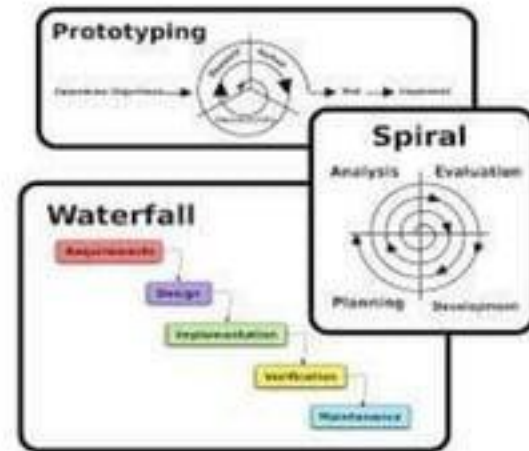
- ▶ In project management there are a variety of approaches and methods that can be employed in managing different kinds of project.
- ▶ All the types of project methodology can be conditionally divided into *traditional* and *modern* approaches.



# Methodology Types

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- ▶ A **traditional approach** involves a series of consecutive stages in the project management process. It is a step-by-step sequence to design, develop and deliver a product or service.
- ▶ It entails achieving the succession in the implementation process and provides the benefits of milestone-based planning and team building.
- ▶ In IT and software development, this methodology type is called "*Waterfall*" – one portion of work follows after another in linear sequence.



## Stages- the traditional project management methodology:

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- ▶ The following stages are included the traditional project management methodology:
  - ▶ Initiation
  - ▶ Planning and design
  - ▶ Execution
  - ▶ Control and integration
  - ▶ Closure (installation and maintenance)



# Modern project management methodologies

- ▶ **Modern methodologies** do not focus on linear processes but they provide an alternative look at project management.
- ▶ Some of the methods are best for IT and software development, while others can be implemented in production, process improvement, product engineering, and so on.
- ▶ Modern PM approaches use different models of the management process.



# Modern project management methodologies

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## ▶ **Agile Methodology**

- ▶ Agile methodology is for a project that needs extreme agility in requirements.
- ▶ The key features of agile are its **short-termed delivery cycles** (sprints), agile requirements, **dynamic team culture**, **less restrictive project control** and emphasis on **real-time communication**.
- ▶ This is a methodology that aims **to empower teams**, **encourage customer involvement** and **manage change or risk** throughout the project.
- ▶ The **focus** with this methodology **is on the development of teams**, project monitoring and responsiveness to change, with continued communication being an important aspect throughout the life of the project.



# Modern project management methodologies

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## ▶ **PRINCE2**

- ▶ **PR**ojects **I**N **C**ontrolled **E**nvironments 2 (**PRINCE2**) presents a **suite of process-driven methods** and documentation-oriented **approaches** that allow driving various projects in the private and public sector.
- ▶ It was developed by the UK Government
- ▶ The methodology **encompasses the high level management, control and organization of a project.**
- ▶ PRINCE2 is a structured approach to project management. It provides a method for managing **projects within a clearly defined framework.**
- ▶ PRINCE2 describes procedures to coordinate people and activities in a project, how to design and supervise the project, and what to do if the project has to be adjusted if it doesn't develop as planned.
- ▶ In the method **each process is specified with its key inputs and outputs and with specific goals and activities to be carried out,**
- ▶ which gives an automatic control of any deviations from the plan.

## Modern project management methodologies

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### ▶ **CPM**

- ▶ Critical path method (CPM) explores the most important or *critical* tasks of a project by defining possible activity sequences and estimating the longest duration of each sequence.
- ▶ It helps figure out how long it will take to complete the work and what tasks will compose the scope.
- ▶ The critical path method (CPM) is a step-by-step technique for process planning that defines critical and non-critical tasks with the goal of preventing time-frame problems and process bottlenecks.



# Modern project management methodologies

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## ▶ **Lean**

- ▶ Lean PM methodology intends to maximize customer value and minimize resource waste.
- ▶ Lean project management lets organizations create higher value for their customers with fewer resources.
- ▶ This approach achieves perfection in customer satisfaction and value generation through implementing an optimized process flow that eliminates waste in products, services, transportation, inventories, etc.



# Modern project management methodologies

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## ▶ **CCPM**

▶ Critical Chain Project Management (CCPM) is the way to plan, implement and review various kinds of work in single- and multi-project environments.

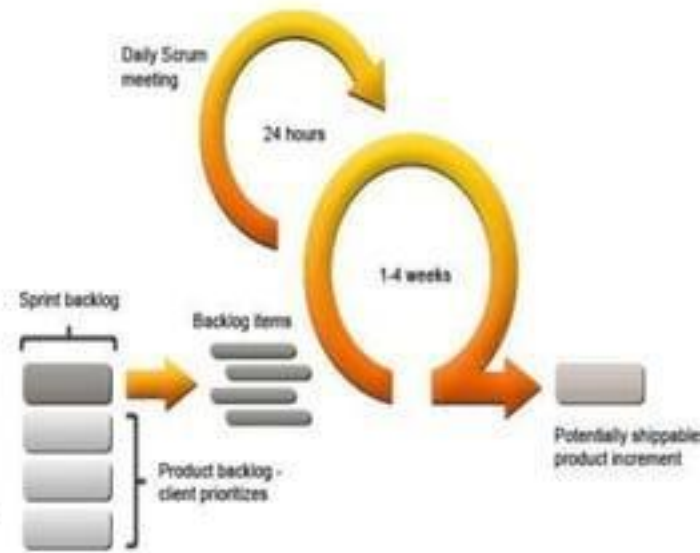
▶ This management methodology uses *Theory of Constraints* (TOC) and the *concept of buffers* to establish improved task durations and manage resource-dependent tasks and activities.



# Modern project management methodologies

## ▶ SCRUM

- ▶ SCRUM is an example of Agile PM methodology that involves teams in producing a software product in 30-day “sprints” and monthly “scrum sessions”.
- ▶ In a SCRUM-driven project, the deliverables are broken down into 30-day intervals.
- ▶ This methodology is **specific** and **applicable mainly to collaborative, 100%-dedicated teams**, with no heavily constrained time and materials budget.



# Modern project management methodologies

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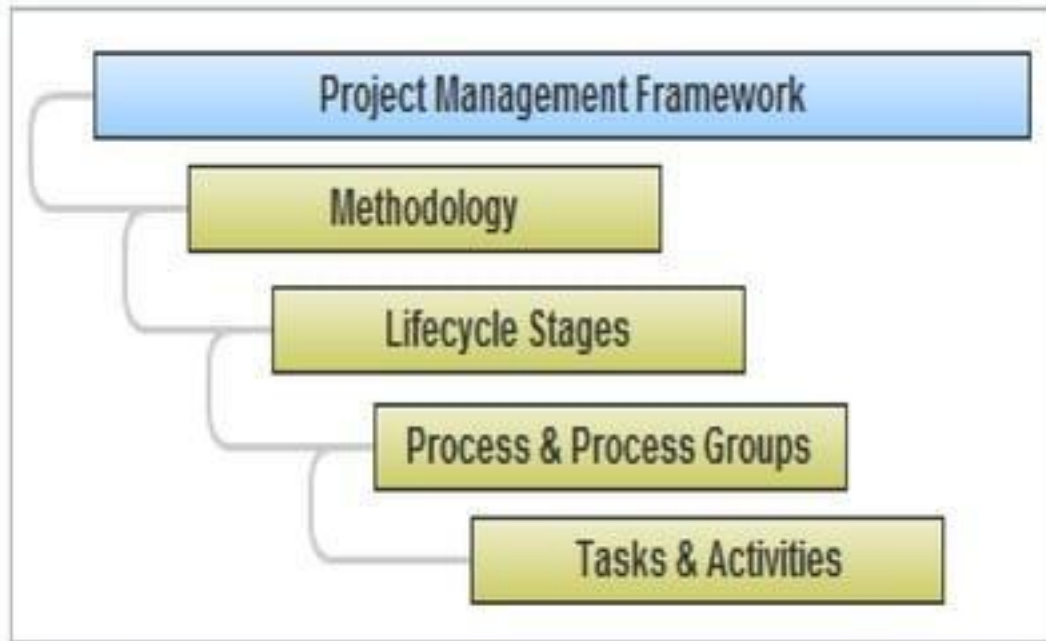
## ▶ Six Sigma

- ▶ The method of Six Sigma was originally developed by Motorola to improve its production processes by eliminating defects (defects defined as “non-conformity of a product or service to its specifications”).
- ▶ Today Six Sigma is one of the most popular and worldwide trusted examples of project management methodology for ensuring the accuracy and speed of a process’s implementation through eliminating or minimizing waste.



# Project Management Framework

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## Modern project management methodologies

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### ▶ Conclusion:

- ▶ Selecting the most suitable project management methodology could be a tricky task. When it comes to selecting an appropriate one, there are a few dozens of factors you should consider. Each project management methodology carries its own strengths and weaknesses.
- ▶ Therefore, there is no good or bad methodology and what you should follow is the most suitable one for your project management requirements.

