

PROJECT MANAGEMENT

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Speaker
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METHODOLOGIES



What is a methodology?

A project management methodology is a set of principles and practices which drive team in organizing projects to ensure their optimal performance.

Basically, it is a framework that helps to manage the project in the best possible way.

Project management is so important to organizations and teams, but to be truly effective, it must ensure that you correctly map the project management methodology to the type of team, project, organization and objectives.

HOW TO CHOOSE a methodology

There are various methodologies and when consider the different objectives, KPIs and production methods but also different types of industries and teams, it makes sense that there is no single approach to managing a project.

Many software developers began to find that traditional project management methods hindered rather than helped their workflows and negatively impacted their performance and results.

How do you know which project management method (or methods, plural) is right for the team?

HOW TO CHOOSE a methodology

There are many factors that will influence the project management methodology. Here is a quick breakdown of some of the key considerations that can help you decide:

- **Cost and Budget:** On a \$ to \$ \$ scale, what budget are you working with? Is there room for change if necessary, or is it essential that it stays within these predetermined limits?
- **Team size:** How many people are involved? How many stakeholders? Is your team relatively compact and self-organized, or more sprawling, with the need for more rigorous delegation?
- **Ability to Take Risks:** Is it a huge project with a big impact that needs to be carefully managed to deliver very serious results? Or is it a smaller scale project with a little more room to play?
- **Flexibility:** Is there room to change the scope of the project during the process? And the finished product?
- **Timeline:** How much time is allocated to deliver the brief? Do you need a quick turnaround or is it more important that you have a well-finished result, no matter how long it takes?
- **Customer / stakeholder collaboration:** How does the customer / stakeholder need - or want - to be involved in the process? To what extent do you need or want them to be involved?
- **Product:** Many product vendors propose a proprietary methodology for carrying out the project, is it right to adopt it?

Benefits of having a project management methodology

- **Team members have the same guidelines for their workflow**
- **Your team is prepared ahead of time to address issues and troubleshoot**
- **Making adjustments to your workflow is easier**
- **You can explain your project approach to stakeholders and clients**
- **Team priorities are always the same, and individuals understand the impact of their contributions.**

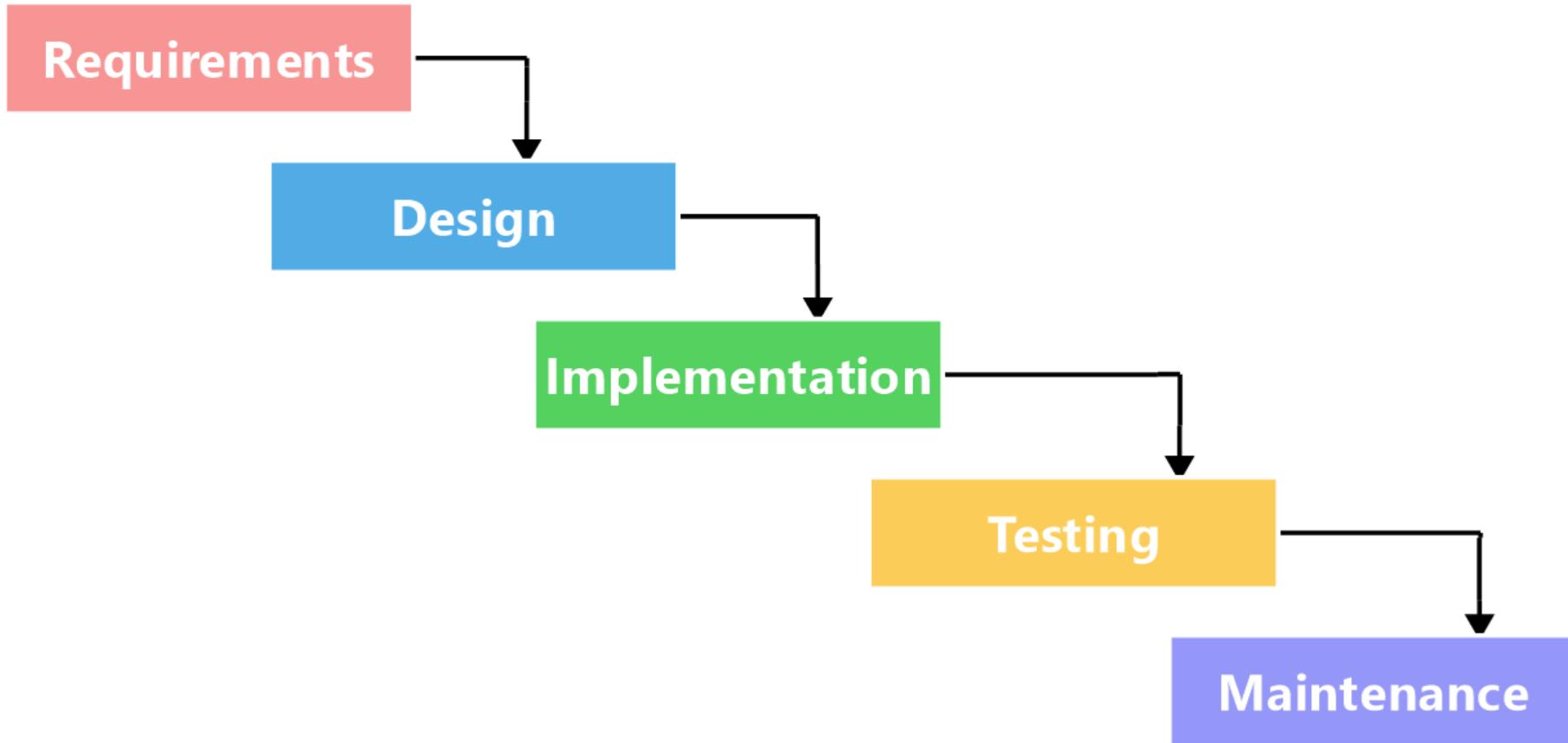
THE MOST COMMON METHODOLOGIES

- Waterfall
- Agile
- Scrum
- Kanban
- eXtreme
- Adaptive Project Framework
- Lean
- Six Sigma
- Critical Path
- PMBOK
- PRINCE2
- RAD
- ITIL

WATERFALL

Description	The Waterfall method is a traditional approach to project management. In it, activities and phases are completed in a linear and sequential manner and each phase of the project must be completed before the next one begins.
Features	The phases of Waterfall project management generally follow this sequence: Requirements => Analysis => Design => Realization => Test => Distribution and maintenance Progress flows in one direction, like a real waterfall.
Critical Issues	Like a real waterfall, however, it can quickly become dangerous. Since everything is mapped out in the beginning, there is a lot of room for error if expectations don't match reality. And it is not possible to go back to an earlier stage once it is completed.
Benefits	<ul style="list-style-type: none">○ The ultimate goal of the project is clearly defined and will not change.○ Stakeholders know exactly what they want (and it won't change).○ The project is consistent and predictable (i.e. it will not change).○ The project is in a regulated sector that requires in-depth project monitoring or documentation.○ You may need to get new people involved in the project halfway through and get them up to speed quickly.
Constrains	<ul style="list-style-type: none">○ The project could change.○ You don't have a complete picture of all the requirements before you begin.○ You need to do continuous testing or adapt to feedback during the process.

WATERFALL

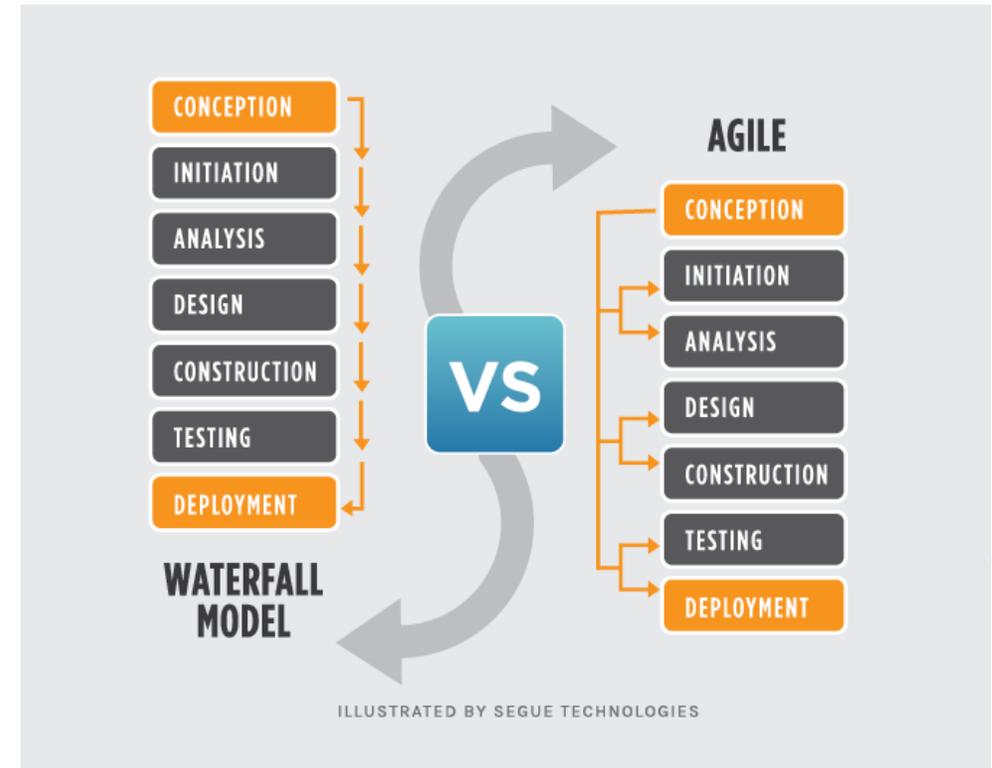
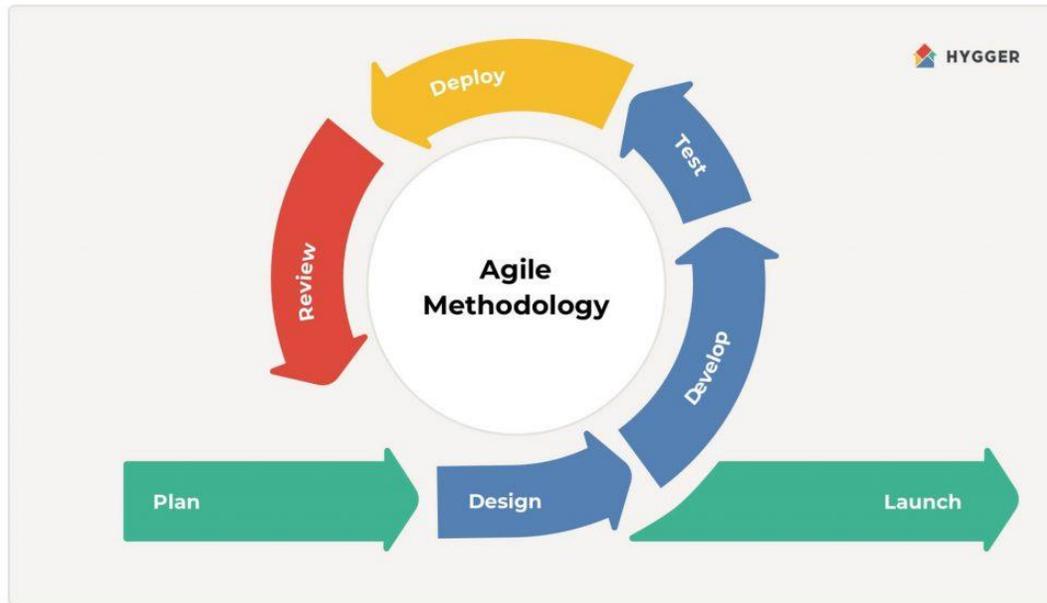


Credit by
web

agile

Description	The agile project management methodology stems from a growing dissatisfaction with the linear approach of traditional project management methodologies.
Features	<p>It is collaborative. It's fast. It is open to data-driven change. Therefore, agile project management methodologies usually involve short work steps with frequent testing, re-evaluations, and adaptations. In many agile methods, all the work to be done is added to a backlog that teams can work on at each stage or cycle, with project managers or product owners prioritizing the backlog so teams know what to focus on. first.</p>
Critical Issues	It is a methodology that does not provide for a large organization so it relies heavily on the proactive attitude of people
Benefits	<ul style="list-style-type: none">○ The project could change.○ At first you are not sure what the solution will be.○ You have to work fast and it is more important to see rapid progress than perfect results.○ Stakeholders or the customer need (or want) to be involved at every stage○ You need to involve new people in the project halfway through and get them up to speed quickly.
Constrains	<ul style="list-style-type: none">○ A lot of documentation is required (for example, if you intend to involve new people during the project).○ A predictable deliverable is needed and you need to be very clear on how it looks from the start.○ The project cannot afford to change over its course.○ You don't have self-motivated people.○ Strict deadlines or results to be met.

agile



Credit by web

scrum

Description	Scrum is a form of agile project management. You can think of it more as a framework than as a project management methodology in itself.
Features	With Scrum, work is broken down into short cycles known as "sprints," which usually last around 1-2 weeks. The work is taken from the backlog (see: Agile project management, above) for each iteration of the sprint, Small teams are led by a Scrum Master (who is not the same as the project manager) throughout the sprint, after which they review their performance in a "sprint retrospective" and make any necessary adjustments before starting the next sprint.
Critical Issues	It is possible that some teams go faster than others
Benefits	<ul style="list-style-type: none">○ Continuous improvement is sought.
Constrains	<ul style="list-style-type: none">○ You don't have the full commitment on the part of the team to make it work.



kanban

Description	Coming from the manufacturing industry, the term "kanban" has evolved to denote a picture in which activities are visually represented as they progress through columns on a kanban board. Work is pulled from the default backlog on a continuous basis as the team has capacity and is moved through the columns on the whiteboard, with each column representing a step in the process.
Features	It helps to see where bottlenecks are likely to form - if you notice that one of your columns has clogged, for example, you will know that this is a step in your process that needs to be examined. When used as part of an agile project management methodology, it is also common to implement work in progress (WIP) limits. Work in progress limits the amount of activities in play at any given time, which means you can only have a certain number of activities in each column (or on the board in general).
Critical Issues	There is a minimum risk that resources will only see part of the process
Benefits	<ul style="list-style-type: none">○ Visual representation of the progress of the project.○ Status updates at a glance.○ Encourage the use of WIP limits so that the team can stay focused.
Constrains	<ul style="list-style-type: none">○ The process is complex or has a lot of stages.

eXtreme

Description	The eXtreme Programming (XP) methodology is another form of agile project management designed for software development.
Features	Emphasize teamwork and collaboration between managers, customers and developers, with self-organizing teams. It has a defined set of rules that teams should follow, which are based on its five values: simplicity, communication (face to face is preferable), feedback, respect and courage.
Critical Issues	Vision too focused on development and less on process
Benefits	<ul style="list-style-type: none">○ We want to promote teamwork and collaboration.○ You have a small co-located team.
Constrains	<ul style="list-style-type: none">○ The team is spread across different places and time zones.

Adaptive Project Framework (APF)

Description	The Adaptive Project Framework (APF) methodology, also known as Adaptive Project Management (APM), is a type of agile project management methodology that has been designed with the inevitability of change in mind.
Features	The key attribute of APF is that teams need to be able to adaptively respond to change. This means that by using adaptive project framework methods, teams must try to anticipate risks and prepare for contingencies in their project. They need to understand that key components are constantly evolving and be able to constantly reevaluate results and decisions with these moving parts in mind.
Critical Issues	It requires a lot of communication with all stakeholders and, like other agile project management methodologies, being able to work collaboratively. If the teams are distributed it is very difficult to adopt this type of approach.
Benefits	<ul style="list-style-type: none">○ The final goals are known
Constrains	<ul style="list-style-type: none">○ When predictability is needed.○ You don't have the resources to handle the potential downsides of adaptability (e.g., scope scrolling, reworking, time misuse).

lean

Description	Lean is another project management methodology that has its origins in manufacturing (and specifically the Toyota Production System). It's about applying lean principles to project management methods to maximize value and minimize waste.
Features	Waste consumes resources without adding value to the customer. Irregularity occurs when you have overproduction in one area that knocks out all other areas, leaving you with excessive inventory (waste!) Or inefficient (even wasteful!) Processes. Overloading occurs when resources such as equipment and people are overstressed, which can often lead to breakdowns, both in machines and in humans.
Critical Issues	Resistance to control
Benefits	<ul style="list-style-type: none">○ You are looking for a set of principles that will help you reduce waste and optimize flow.○ We always try to improve and add value for the customer.○ Cost reduction.
Constrains	<ul style="list-style-type: none">○ You cannot afford to run into supply problems or lose room for errors.○ You don't have the budget to invest (while lean project management aims to reduce overall costs, it can be expensive to implement).

Six sigma

Description	<p>Six Sigma is a high-quality methodology for improving processes with an emphasis on ensuring consistency in output and quality.</p> <p>There are a few different models available, such as Lean Six Sigma and Agile Sigma, but ultimately Six Sigma is a business methodology that aims to eliminate defects and reduce variation using its defined methodologies.</p> <p>Six Sigma models can be used to optimize and improve existing processes or create new ones.</p>
Features	<ul style="list-style-type: none">○ To improve business processes, you can use the Six Sigma DMAIC process, which stands for the phases in the project methodology: Definition, Measurement, Analysis, Implementation, Control.○ To create new processes or products, you can use the Six Sigma DMADV process: Definition, Measurement, Analysis, Design, Verification.○ As a set of principles and techniques (it is sometimes also described as a "philosophy") rather than a project management methodology in itself, Six Sigma methods can be applied alongside many other project management methodologies, such as Lean and Agile.
Critical Issues	<p>You need a Six Sigma culture in the company and the consulting costs are high</p>
Benefits	<ul style="list-style-type: none">○ They are looking for a set of principles and philosophies to bring into almost all projects and organizations.
Constrains	<ul style="list-style-type: none">○ You don't have a lot of budget to invest in training - it can be expensive to get training and certification.○ You are looking for a defined process for a particular project rather than a set of guiding rules.

critical path

Description	The critical path method (also known as critical path analysis) is a way to identify and schedule all the critical activities that make up the project, as well as their dependencies.
Features	<ul style="list-style-type: none">○ Identify all the essential activities to be carried out to achieve the project objective○ Estimate how long each of these activities will take (bearing in mind that some activities will need to be completed before others can be started)○ Use all of this information to plan the "critical path" you will need to take to get your project done as quickly as possible without missing any crucial steps.
Critical Issues	Not suitable for an Agile approach
Benefits	<ul style="list-style-type: none">○ The project is large and complex.○ The project has many dependencies.○ We are looking for a visual way to map the sequence of activities.○ You need to identify the most important activities so that you can better allocate resources.○ You have a strict schedule and deadlines, with no room for stupid business.
Constrains	<ul style="list-style-type: none">○ You don't need something with a lot of complexity.○ Unsure of deadlines, timelines or durations.○ The project needs room to change.

prince2

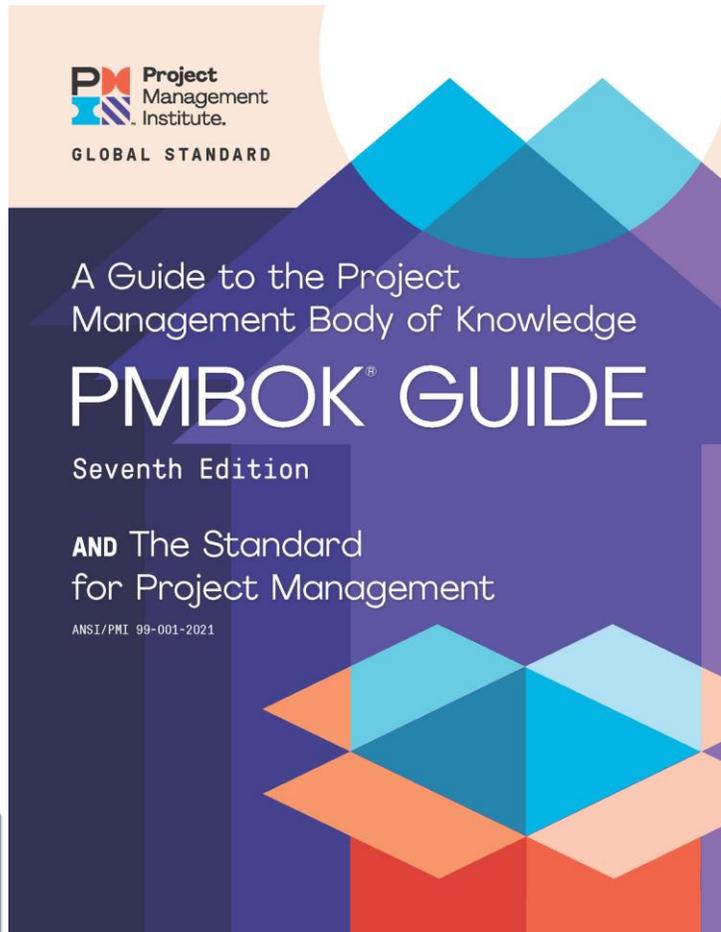
Description	PRINCE2 offers professionals and organizations the essential information to successfully manage projects of any type and size. It provides a framework focused on organization and control throughout the entire project.
Features	<p>The topics describe aspects of project management that must be addressed on an ongoing basis and in parallel for the entire duration of the project. They define the specific treatment envisaged by PRINCE2 to be applied to the various project management standards and the related explanations.</p> <ul style="list-style-type: none">○ Business case: Document the ongoing justification of the project.○ Organization: define the roles and responsibilities throughout the project.○ Quality: define what the requirements and acceptance criteria are and how the project will respect them.○ Plans: define the steps required to develop the PRINCE2 plans and techniques to be used.○ Risk: effectively identify the risks and opportunities that may have an impact on the project.○ Change: how the project manager will evaluate and act in relation to changes to the project.○ Progress: assess the ongoing feasibility of plans and how and if the project should continue.
Critical Issues	It adapts to particular contexts that require a Global template
Benefits	<ul style="list-style-type: none">○ We are looking for a high quality in project management.○ PRINCE2 is used in international contexts.
Constrains	<ul style="list-style-type: none">○ The seven-step process is not associated with existing projects.○ You have to customize (or even ignore) the steps in the process.

RAD

Description	Rapid Application Development (RAD) is a type of agile project management methodology that aims to facilitate faster software development.
Features	Use rapid versions of prototypes and iterations to gather feedback in a short period of time and value user feedback against rigorous planning and requirements recording.
Critical Issues	Specific for software development
Benefits	<ul style="list-style-type: none">○ You want to be able to provide customers / clients / stakeholders with a working model much earlier (even if it is not perfect).○ You want to create multiple prototypes and work with stakeholders to choose the best one.○ Speed is of the essence.○ We want to encourage code reuse.
Constrains	<ul style="list-style-type: none">○ You don't have an experienced team.○ Customers or stakeholders do not have the time to engage in such a collaborative process or cannot provide feedback within the required time frame.○ You have an extensive team.○ It is preferred to have a detailed specification outlining all functional and non-functional requirements.

Description	ITIL has become the standard in IT service management. Regardless of the business context, ITIL enables organizations to offer their services in an efficient and quality-oriented way.
Features	<p>It is a series of best practices for the provision of IT services: it standardizes the selection, planning, delivery and support of IT services to maximize efficiency and maintain predictable service levels.</p> <p>The ITIL framework is divided into five broad categories:</p> <ul style="list-style-type: none"> ○ Service Strategy ○ Service Design ○ Service Transition ○ Service Operation ○ Continual Service Improvement
Critical Issues	Specific for IT services
Benefits	<ul style="list-style-type: none"> ○ It provides maximum value to users ○ We seek the optimization of resources and capabilities ○ You want to offer useful and reliable services ○ You have planning processes with specific objectives in mind ○ You want to clearly define the roles for each activity
Constrains	<ul style="list-style-type: none"> ○ You have a small IT facility

PMBOK



- A Guide to the Project Management Body of Knowledge (PMBOK® Guide) is PMI’s flagship publication and is a fundamental resource for effective project management in any industry. Over the years, business has changed considerably, but projects remain critical drivers of business success.
- The book includes The Standard for Project Management. The standard is the foundation upon which the vast body of knowledge builds, and the guide serves to capture and summarize that knowledge.

- Reflects the full range of development approaches (predictive, traditional, adaptive, agile, hybrid, etc.)
- Provides an entire section devoted to tailoring the development approach and processes
- Expands the list of tools and techniques in a new section, “Models, Methods, and Artifacts”
- Focuses on project outcomes in addition to deliverables

PM SOFTWARE: JIRA

The screenshot displays the Jira Software interface for a project named 'Nucleus'. The top navigation bar includes 'Your work', 'Projects', 'Filters', 'Dashboards', 'People', 'Apps', and a 'Create' button. A search bar is located on the right. The left sidebar contains navigation options: Roadmap, Backlog (selected), Board, Code, On-call, Project pages, Add item, and Project settings. The main content area is titled 'Backlog' and shows a list of issues under 'Sprint 3' (5 issues, 3/Jan/19 02:59 PM - 7/Feb/19 02:59 PM). The issues are categorized by labels: BILLING, ACCOUNTS, and FEEDBACK. A 'Forms' epic is expanded on the left, showing progress bars for 'Forms', 'Feedback', 'Accounts', 'Billing', and 'AWS spike'. A '+ Create issue' button is at the bottom.

Issue ID	Issue Description	Label	Assignee
NUC-335	Affelite links integration - frontend	BILLING	[Avatar]
NUC-342	Fast trip search	ACCOUNTS	[Avatar]
NUC-341	Quick payment	FEEDBACK	[Avatar]
NUC-340	Account settings defaults	ACCOUNTS	[Avatar]
NUC-339	Billing system integration - frontend	[None]	[Avatar]
NUC-337	Multi-dest search UI mobileweb	ACCOUNTS	[Avatar]
NUC-360	Onboard workout options (OWO)	ACCOUNTS	[Avatar]
NUC-344	Optimize experience for mobile web	BILLING	[Avatar]
NUC-338	Multi-dest search UI web	ACCOUNTS	[Avatar]
NUC-354	Shopping cart purchasing error - quick fix required.	[None]	[Avatar]
NUC-343	Fluid booking on tablets	FEEDBACK	[Avatar]
NUC-346	Adapt web app no new payments provider	[None]	[Avatar]
NUC-336	Quick booking for accomodations - web	[None]	[Avatar]

Example of a scrum board

PM SOFTWARE: JIRA

Jira Software Your work **Projects** Filters Dashboards People Apps

Search

Nucleus Software project

- Roadmap
- Board**
- Code
- On-call
- Pages
- Add item
- Project settings

Projects / Nucleus
Board

GROUP BY None

TO DO 12

- Implement feedback collector (NUC-205)
- Bump version for new API for billing (NUC-206)
- Create subscription plans and discount codes in Stripe (NUC-207)
- Add NPS feedback to wallboard (NUC-208)
- Add analytics events to pricing page (NUC-209)
- Resize the images for the upcoming campaign (NUC-210)

IN PROGRESS 4

- Improve a11y of the feedback form (NUC-212)
- Update T&C copy with v1.9 from the writers guild in all products that have cross country compliance (NUC-213)
- Bump feedback icon version (NUC-214)
- Tech spike on new stripe integration with paypal (NUC-215)

DONE 2

Example of a Kanban board

CASE STUDY 1: WEB APP IMPLEMENTATION IN RETAIL SECTOR



CONTEXT: THE DATA STRATEGY PROGRAM AND THE REASON WHY OF THE PROJECT

The new flyer model implementation project (Web App) is part of the broader company Data Strategy, Promo & Pricing program, which aims to identify and implement new methods and tools for analyzing and using data to guide promotional strategies, personalized interaction with the customer and, in general, business strategies and action plans towards the customer.

Reason Why: as-is process with a high manual component, resulting in a high margin of error and risk of data loss / failure to communicate operational information, time consuming actions, non-targeted information sets, communication flow not always ordered with consequent need for recovery of key information in last minute and through non-unique and sometimes unofficial channels. Impossibility of carrying out analyzes, especially ex-ante.



BUSINESS FUNCTION



Program Champion Lead



IT Director



Program Champion Team



Project Owner



Project Manager

Business Unit

ICT, Marketing, Digital Marketing, Store Network, Commercial Area, Replenishment



BUSINESS SCOPE: OBJECTIVES AND PERIMETER

Description: Redesign the flyer creation process, defining a retro-planning of the process that identifies the engagement times of each department involved and the information sets needed by each team for each phase of the flyer processing. Introduce a Web App to support the entire process, which allows you to centralize, automate, historicize and segregate information with targeted e-mailing of information sets. Prepare a structured historicization of the information in order to enable subsequent analyzes.

Goals: To make the flyer management process more efficient. Minimize time consuming components, automating information retrieval, limiting the margins of error and information loss. Having a tool (Web APP) that provides the information sets necessary to provide a quick analytical overview during the construction of the flyer and an ex-ante analysis of the effects of any rework. Integrate descriptive and predictive models to support decision making. Use the project output as an enabler for the budget process

Perimeter: Flyer Chain



SUCCESS FACTORS



CASE STUDY 1: WEB APP IMPLEMENTATION IN RETAIL SECTOR



CASE STUDY 1: WEB APP IMPLEMENTATION IN RETAIL SECTOR

Business Requirement/ Scoping

Integrated Solution Design

Sign off :

- Design Team
- Business owner (Solution Design, User Experience WalkThrough, Software Selection)

- PPT 1 Overall Solution Design
- PPT2 Arch. Landscape, env. & release
- PPT3 UX Validation
- PPT3b Device selection
- PPT 4 Project charter (org pj, piano, meth, sal)

BBP /Functional Analysis

Sign off: Design Team

#PPT / AF

Build

Solution WalkThrough 1 Key Users

Build

Include

- Technical Analysis
- Customizing
- Development
- Doc Tech
- Unit Test
- Deploy & fixing

Solution WalkThrough 2 Key Users

#AF Flusso integrazione

Sign off by: Design Team

Assembly

End User Training

Training Guide

Integration Test & UAT

Test case

Cutover

Build & data alignment

Sign off:

- Design Team
- Business Owner
- Key Users

CASE STUDY 2: IOT PROJECT IN AUTOMOTIVE SECTOR



- 1 Tail-lift
Open/Close
- 2 Tipping Box
- 3 Hydraulic bumper bar
Up/Down
- 4 Electric covering
Open/Close
- 5 Axis lifting system
On/Off
- 6 Self-steering axle lock
On/Off
- 7 Paver machine function
On/Off
- 8 Vibrating device under the
body
On/Off
- 9 Temperature measuring
device
On/Off
- 10 Camera 1 e 2
On/Off
- 11 Worklight
On/Off

Italian Automotive company leader in Europe for production of Trailer has developed and implemented an innovative System, based on the Industry 4.0 standard, which through an APP allows the activation of the functions of a trailer in complete safety, without having to get out of the tractor cabin; the APP during the operational phases is able to intercept and manage malfunctions and / or situations of lack of security.

CASE STUDY 2: IOT PROJECT IN AUTOMOTIVE SECTOR

Tablet
To manage the trailer

The APP allows to:

- start the **trailer management functions**
- **monitor in real time the operating status of the trailer**, acquiring data from the ABS / EBS system of third party, from the sensors and actuators installed on the trailer.



CASE STUDY 2: IOT PROJECT IN AUTOMOTIVE SECTOR

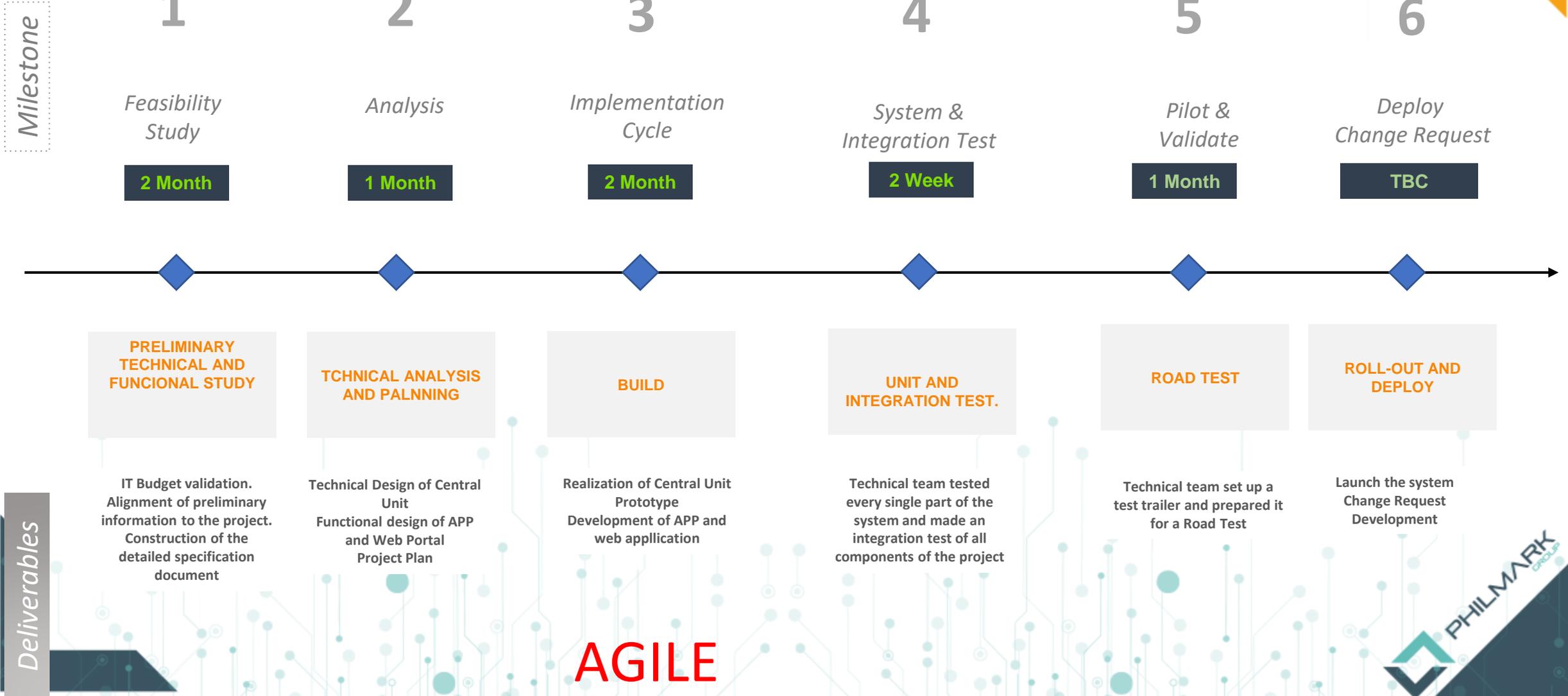
Tablet
To manage the trailer

Web portal:

Company provides APP users with a **web portal** through which it is possible to enable them to:

- **manage own fleet**
- assign to any trailer a perimeter of work associated with a geographical area (**geofencing**)
- **localize the trailer** even if not attached to the tractor
- elaborate the **driving style** of the driver
- **schedule maintenance** of the trailer
- request **Assistance to Vendor**

CASE STUDY 2: IOT PROJECT IN AUTOMOTIVE SECTOR



AGILE