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Webinar 4. Methods and approaches towards project management.

0. Discussion of home exercises and questions/doubts.
1. What is a project management approach?
2. Process determined approaches (PMP, PRINCE2).
3. Systems thinking > Lean > Agile > Scrum.
4. Mixed approaches to project management.
5. Project Tailoring.
6. Common obstacles to successful project management.
7. Summary. Q&A session.

There are more than 8 000 project management approaches you can choose and tailor to your needs. Each project approach has its advantages and disadvantages. During this webinar, we will discuss the most popular approaches, figure out their peculiarities, discuss some examples and decide which one works best for your projects.

What is a project management approach?

A project management approach, sometimes called project management methodology, is a set of rules and principles that guide your organisation in implementation of any project with optimum performance. In other words, this is a framework that provides necessary tools for management of a project in the best possible way.

Upon choosing a project management approach, given such variables as time, cost, scope, will depend whether you will succeed or fail in your project.

Why are there so many project approaches?

There are no two exact projects. Even if you use the similar templates, goals, and priorities, there can appear new challenges and risks, so you need to tailor your project to specific conditions. Given that, there is no one-size fits all project approach, one approach can perfectly fit for one project, but for another one will be a nightmare.

How to choose the best possible approach for your project and team?

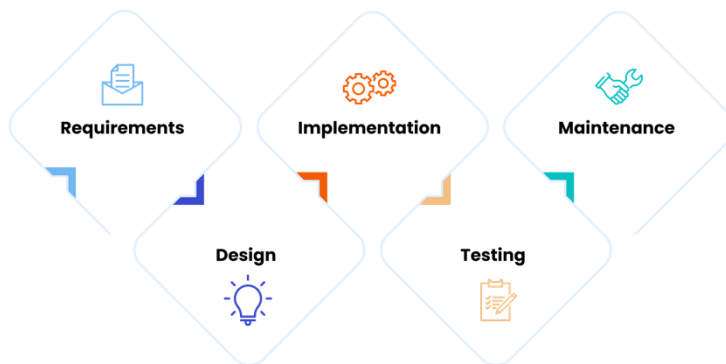
There are many variables that can affect your choice. The most important factors you should take into consideration while choosing the appropriate approach are:

- Cost – total amount of money needed to complete a project. What is a project budget (small, middle, large)? How many installments you will have? Is it possible to change the budget? Are any penalties for delays or poor quality?
- Scope – total amount of work needed to complete a project. What are the key objectives of a project? What are the major deliverables?
- Time – total amount of time needed to complete a project. What are the main project phases? When do you need to deliver a project task?
- Team – group of people that assure project implementation. How many people will work on a project? Are there any obstacles for engaging people at specific project phase?
- Risks – positive or negative events that can affect your project. What are internal or external events that can affect your project? Can we estimate a level of impact? What responses can minimise negative risks?
- Flexibility – tolerance to changes. Can we change the scope, time, or cost in a project?
- Stakeholders – direct or indirect beneficiaries of a project, people who will be affected by a project results. At what stages do we need to engage stakeholders? To what extent do we need to engage stakeholders? Who are a project’s stakeholders?

Generally, we can divide project management methodologies into two types:

- Waterfall – is a sequential and/or linear process of project management;
 - o PRINCE2, PMP, others;
- Systems thinking > Lean > Agile > Scrum
 - o Systems thinking is a framework for seeing interrelations rather than things, for seeing patterns of change rather than statistic “snapshots”, citation of Peter Senge;
 - Lean is a learn-measure-build cycle which? continuously improves key processes;
 - Agile – adaptation to changes, able to seize emerging opportunities;
 - o Scrum is focused on delivering the highest business value in the shortest time and allows rapidly and repeatedly inspect actual working software.

Waterfall methodology applies to projects with predictive sequence of steps, where each project phase starts after completion of the previous one and there is no possibility to go back to the previous stage (it’s like swimming against a waterfall – tough and no fun). This approach does not tolerate any unexpected changes or modifications during the project implementation. This approach can be used if a project requirements are clear and well documented, the technology is mature and understood, and if there is no room for flexibility. The main areas where the waterfall methodology is applied are manufacturing, construction, repeatable services, any production of tangible products.



There are five fixed sequences in such projects, namely:

- Requirements. Define the issue. Identify scope of the issue and develop plan to tackle the issue. Study the issue in order to define requirements needed for solving it. Define “what” to do (?)
- Design. Draft a solution based upon the requirements. Define

“how” to do it (?)

- Implementation. Implement the solution based upon the plan.
- Testing. Test the product to ensure the requirement have been satisfied.
- Maintenance.

Advantages of Waterfall Methodology:

- Clear rules. As requirements documentation is developed at the initial stage, everyone understands the project’s goals and objectives.
- Timing is under control. Starting and ending points of each phase are clearly defined, so it is easy to monitor progress and avoid “slippages”.
- No budget surprises, unless you are failing in delivering agreed products. Usually, a contract prescribes all financial rules, including budget, number of installments, schedule of installments.
- You get what you planned. Big attention to documents means no surprises with end products.
- Client involvement is minimal, except at the initial and final stages. It limits possible communication failures.

Disadvantages of the Waterfall Methodology:

- Sometimes it’s difficult to define all project’s requirements at the initial stage.
- Lack of flexibility.
- Longer time of project implementation as each stage should start after completion of the previous one.
- Any changes of project scope are challenging.

- Limited engagement of clients in the project implementation.

Use this project management methodology if:

- Project objectives and goals are clearly defined and they are not going to change.
- Clients/stakeholders have a clear vision how the final product should look like and they will not change it.
- A project is consistent and predictable.
- A project requires comprehensive documentation and extensive project tracking.
- You would need to hire new people within a project midway and integrate them as quickly as possible.

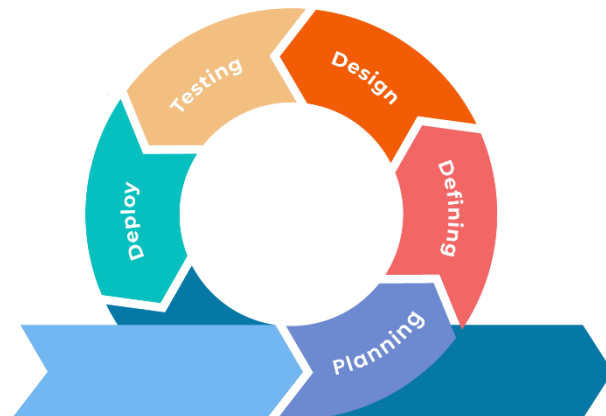
Do not use this approach if:

- Project requirements are flexible and liable to change.
- There is no full picture of all requirements at the beginning of the project.
- Stakeholders should be engaged throughout the whole project. A product should be adapted in accordance with feedbacks during the project implementation.

Agile is an iterative frameworks that helps teams to deliver a product faster, effectively respond to changes, and continuously improve a product delivery at each project stage. Agile aims to deliver the right product, with incremental and frequent delivery of small chunks of functionality, through small cross-functional self-organising teams, enabling frequent customer feedback and course correction as needed (Agile Manifesto). Given that, Agile offers a tailored approach to challenges faced by Waterfall approaches, namely difficulties with delivering large products within projects, where client requirements change frequently. Initially, Agile has been used for software and IT application development projects. However, after a while it expanded to other industries, such as marketing, construction, engineering, finances. Agile breaks down large projects into small and manageable pieces called iterations. At the end of each iteration is produced a product, which is usable.

Using Agile it is possible to tailor a project lifecycle to requirements and needs. Not all stages in the agile development cycle can happen in sequence, they are flexible and happening simultaneously. The main stages of agile project lifecycle are:

- Requirement analysis. Development team together with stakeholders identify requirements, which are detailed and quantifiable;
- Planning – once an idea is confirmed, project team jointly identifies end product features, priorities and assigns tasks to specific iteration.
- Design is prepared based on identified requirements, the project team decides on plan to proceed.
- Development of implementation – development features within scheduled iterations.
- Testing. Testing the product against accepted requirements in order to make sure the product is solving clients' needs.
- Deployment. Deliver the product to clients.



Advantages of Agile:

- Flexibility. Agile is suitable for changing and uncertain environment.
- Improved quality of a product. Delivering ready-to-release increment each iteration provides high quality results.
- In time delivery of what? due to short initial period and no breaks between project stages.

- More close collaboration with stakeholders allows to monitor the project progress and makes sure all tasks are completed according to plan.

Disadvantages of Agile:

- Lack of profound documentation leads to difficulties in introducing new people to the project.
- Less predictability. At the beginning of a project it is difficult to calculate accurately how much effort will be needed in order to deliver the product.
- Full time engagement. Project team should constantly interact with each other in order to meet client expectations.
- Less planning can easily put a project off track.

Use Agile if:

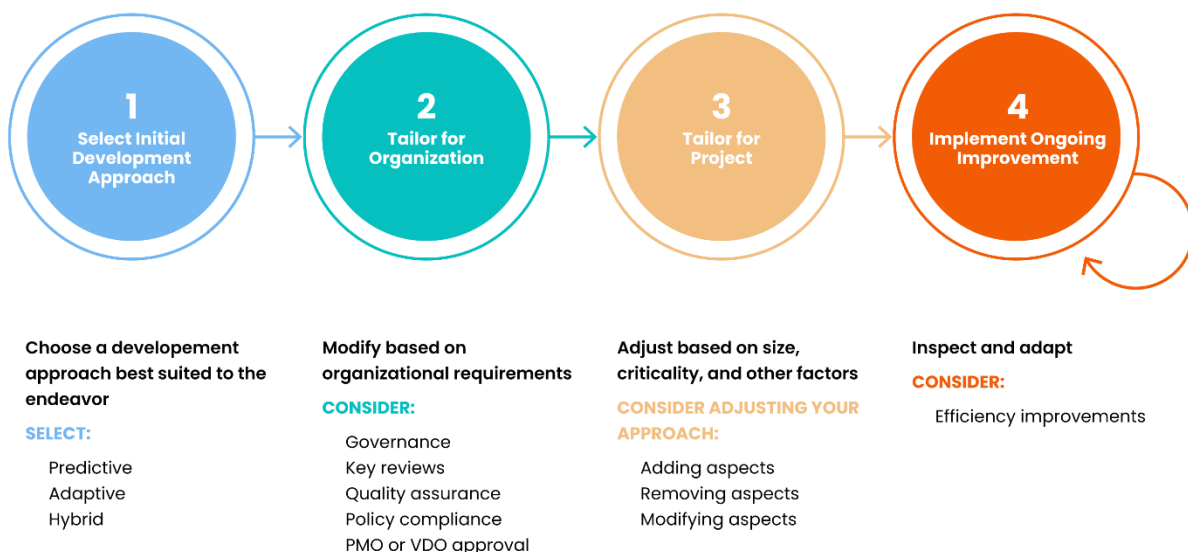
- A project should be flexible and requirements are going to be changed.
- At the initial stage there is no clarity how the solution will look like.
- A product should be delivered quickly.
- Stakeholders or clients should be involved in project implementation at every stage.

Do not use Agile if:

- A project requires a lot of documentation and you plan to engage new employees in the middle of a project.
- A project has predictable deliverables. Clients and project teams know clearly how the product will look like from the very beginning.
- A project cannot be changed during its course.
- Project team is not self-motivated.
- A project has strict rules and deadlines.






What is Project Tailoring? Why do you need to tailor a project methodology to project needs?

According to PMBOK Guide six edition, “tailoring is determining the appropriate combination of processes, inputs, tools, techniques, outputs and lifecycle phases to manage a project” (PMBOK). In other words, doing tailoring a project manager, in cooperation with a project team and a client, chooses an appropriate project management approach to successfully deliver a product. As every project is unique, a project manager adjusts project tools to variables (time, scope, cost, etc.). Another option for tailoring is using ready and uniform approaches (available online for free) towards project management. These general approaches should not be applied to every project, as using one type of approach can be counterproductive and can lead to project failure. In order to tailor your approach to project needs, you can follow the algorithm: 1. Identify a project type -> Inputs -> Constraints -> Resources -> Develop approach -> Outputs -> Continuous improvement -> Monitor key performance indicators -> Deliver a final product.





Common obstacles to successful project management

Obstacles		Solutions
Lack of collaboration	> 	Communication is paramount. Ensure good communication through setting up regular meetings/calls;
Poor work organisation	> 	Set up a clear division of tasks and work flow, so everyone is aware about his/her responsibilities and deadlines.
Poor planning	> 	Spend enough time studying potential risks and consulting stakeholders.
Shifting priorities	> 	Keep project goals clear at each stage of the project.
Insufficient reporting	> 	Make sure you are comparing “oranges to oranges” when reporting on your projects, use the same metrics throughout your project.

References

- Project Management Institute, Inc. *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)–Sixth Edition*. 6th ed., Project Management Institute, 2017.
- Agile Manifesto, available at <https://agilemanifesto.org/>.