MEIM | MASTER IN ENTREPRENEURSHIP INNOVATION MANAGEMENT IN COLLABORATION WITH MIT SLOAN

IN COLLABORATION WITH MIT MANAGEMENT SLOAN SCHOOL

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Agile Project Management

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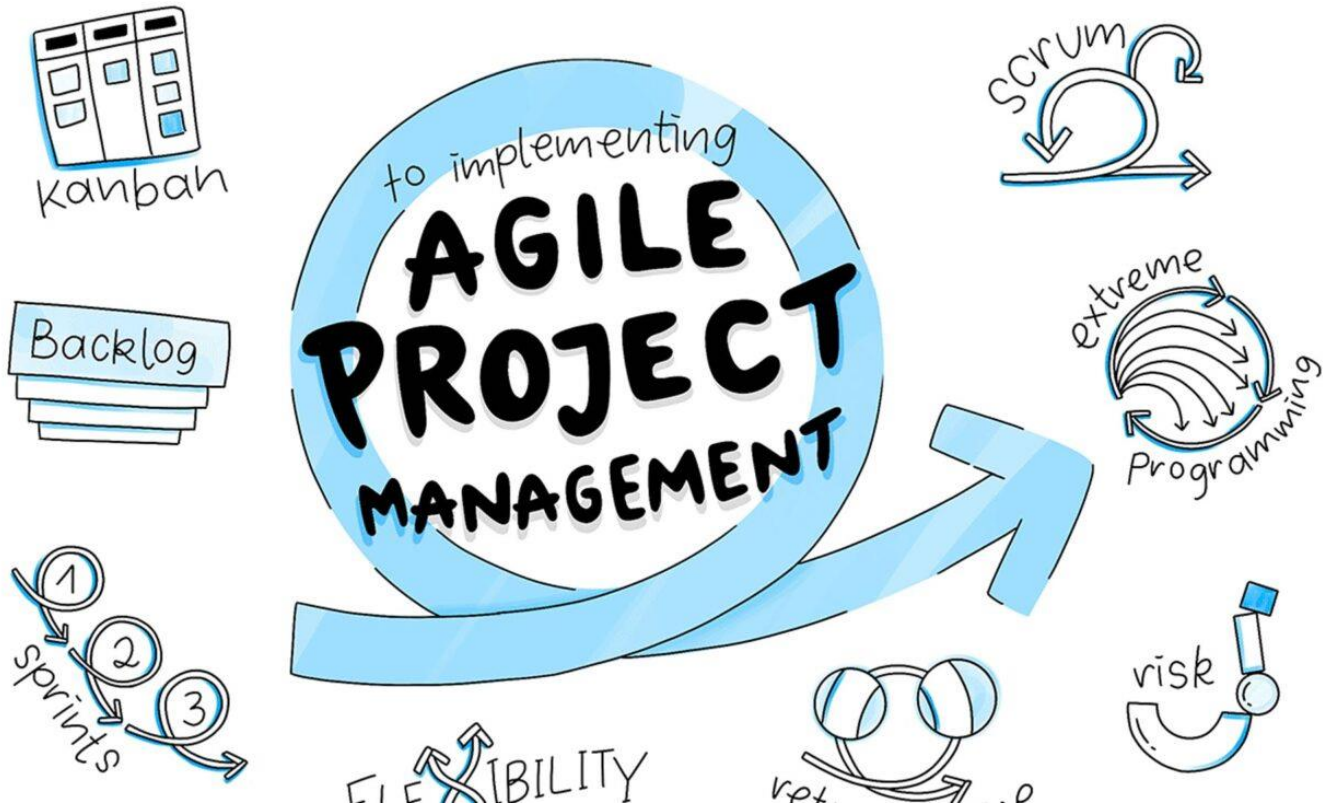
Agenda

- **Introduction**
- **Digital Vortex**
- **Waterfall Method**
- **Agile Method**
- **Agile Scrum Framework**
- **Kanban & Planning Poker**



Introduction

The business world is speeding up and product lifecycles are much shorter. This is forcing organizations to start new projects at an increasing rate.

However, as projects become more complex, project failures, delays, and missed deadlines are becoming increasingly common.

Key role of Project Management

Project Management is the application of knowledge, attitudes, tools and techniques to the activities of a project in order to achieve its objectives *(Project Management Body of Knowledge)*

A **project** is temporary effort undertaken to create a unique product, service or result *(Project Management Body of Knowledge)*

Project Management definition

Why PM is important?

1. it brings leadership and direction to projects
2. ensures global vision and motivation
3. improves team growth and development
4. supports efficient work planning
5. improve flexibility and competitiveness
6. reduces (or at least try to control) the failure risks

Project management: main aim

The main aim of Project Management is to predict possible problems that could hinder the success of a project.

Planning, organizing and **controlling** activities are the main steps to carry out a project with the greatest possible success, minimizing the risk factor.

The main steps of the PM

1. Planning

   Defintion of a detailed plan

   Formalizing the objectives without to be vague and with generic concepts

   Definition of intermediate results in pursuit of the final objective

2. Organizing

   Identification of resources (also human resources)

   Definition of the budgets and time

The main steps of the PM

3. Controlling

Periodic controls

Defintion of KPI

Possible parameters are: Quality, Balance and Completion time

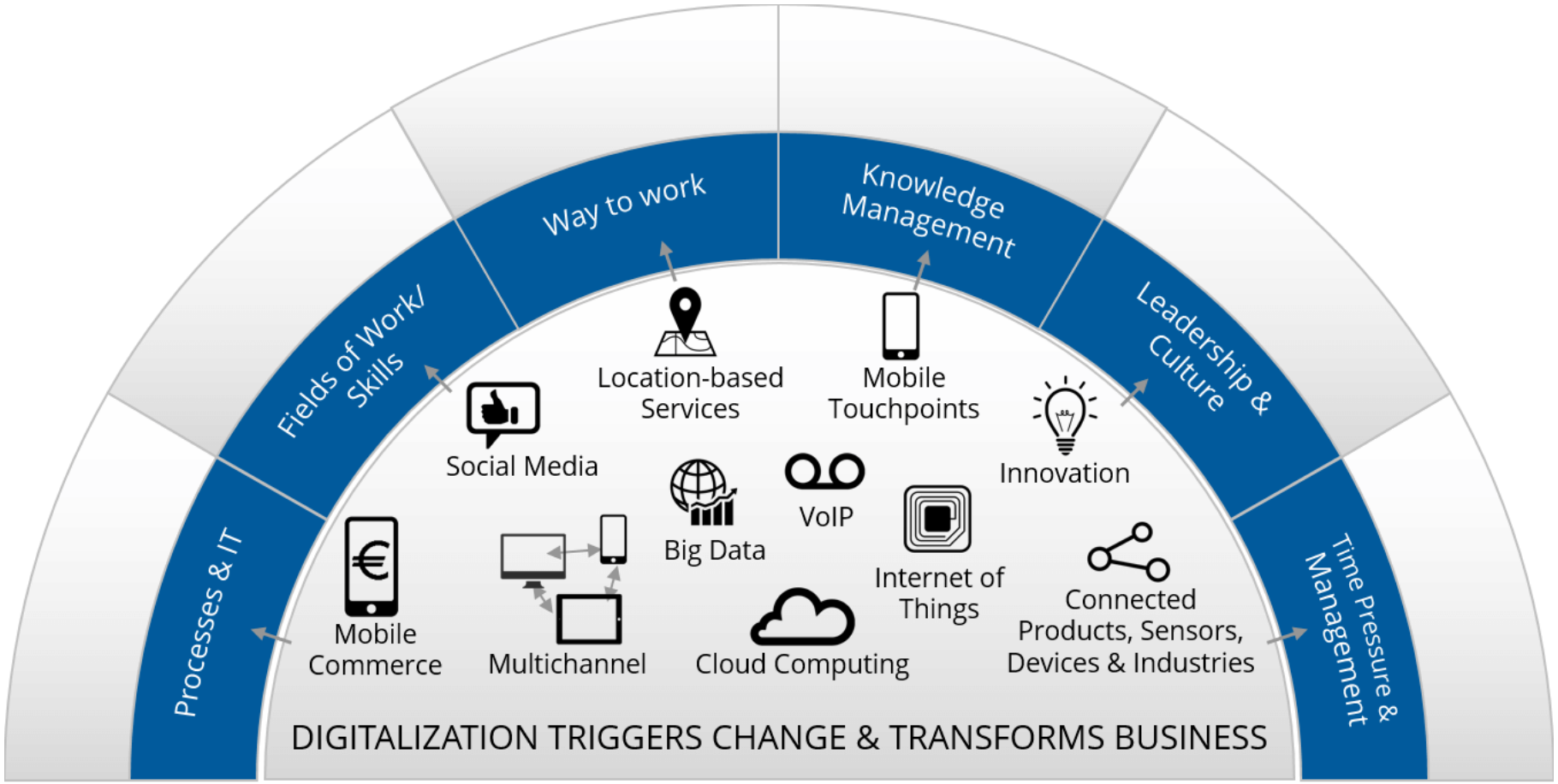
Risk control is essential for companies

Most of the risks can be eliminated or reduced by intervening in the planning of the project, evaluating it step by step, and by having the right amount of resources (human and economic) right from the start.

Main benefits of PM for companies

1. Improve project efficiency
2. Increase quality and quantity
3. Improve customer satisfaction
4. Let to develop good practices
5. Improve team growth and development
6. Improve flexibility and competitiveness
7. Reduces risks

Digital business transformation



Digital business transformation

Digital Enterprise

An ideal end-state whereby an enterprise is fully technology-enabled and optimized.

Digital Transformation (Digitizing)

The process by which an organization becomes digital.

Digital Disrutption is a force that **amplifies competition**: which can come from any anyone, at any time and from any industry

Digital Distruption is a Costant Force

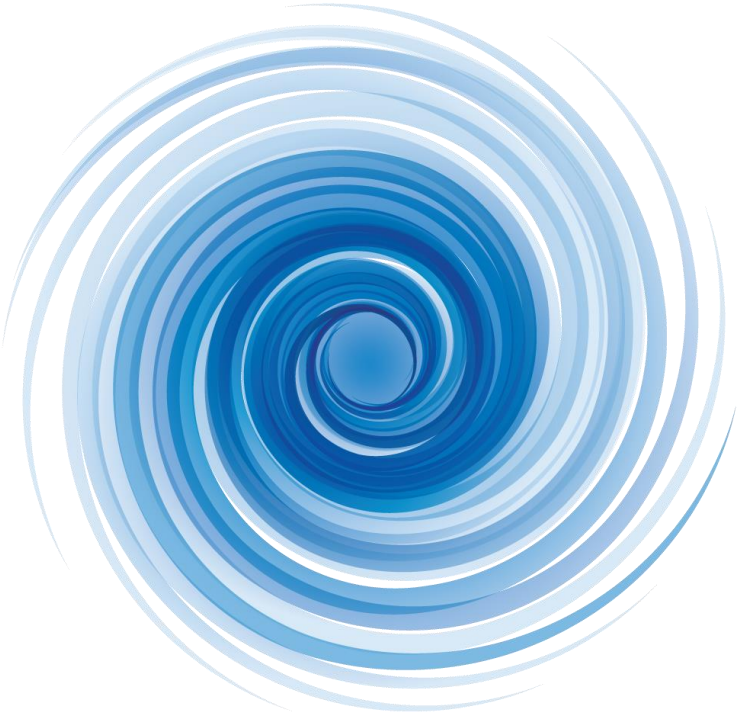
The effect of digital technologies and business models on a company's current value proposition, and its resulting market position.

Digital distruption **threatens** all type of organizations

Digital distruption **creates new value**

Digital Vortex: definition

Digital Vortex is the inevitable movement of industries toward a "digital center" in which business models, offerings, and value chains are digitized to the maximum extent possible



Three main features:

- It pulls objects relentlessly toward its center
- Vortices are highly chaotic
- Objects within a vortex may recombine as they collide with one another and converge toward the center

Who is fulelling the Vortex?
The Internet of Everything/Thing
The Modern Consumer
The Modern Employee

The Internet of Everything/Thing

The Modern Employee

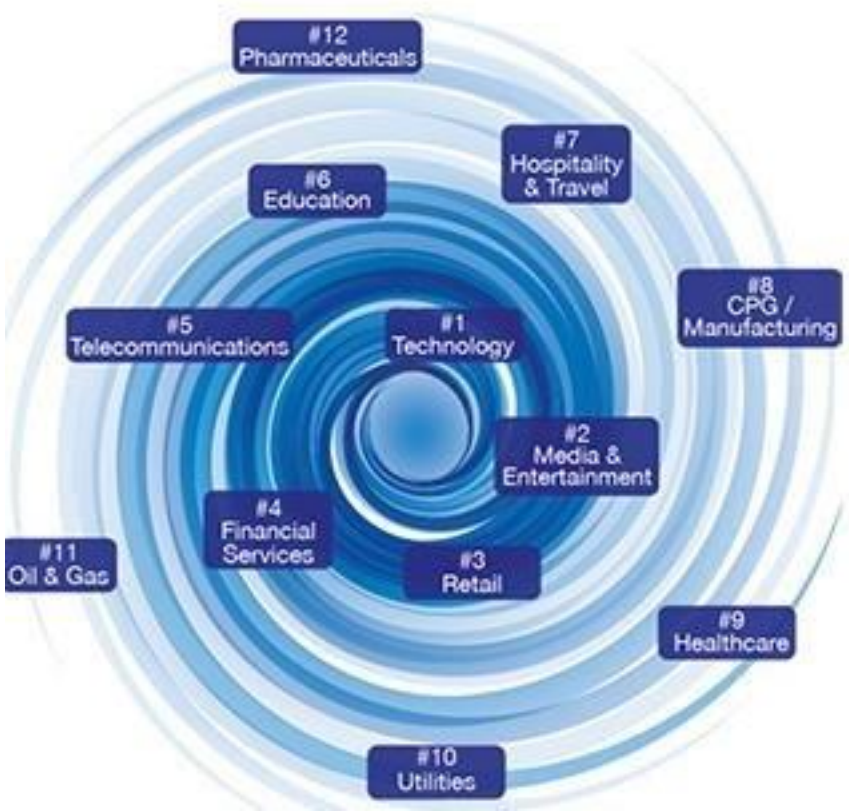
How Millennials are changing the workplace:

1. Mobile and Flexible workspaces are a must
2. Performance is measured in results and not time behind a desk
3. Freelance workers

Born with cell phones in hand, they account for more than 1/3 of the US labor pool and represent tremendous spending power

Digital Vortex

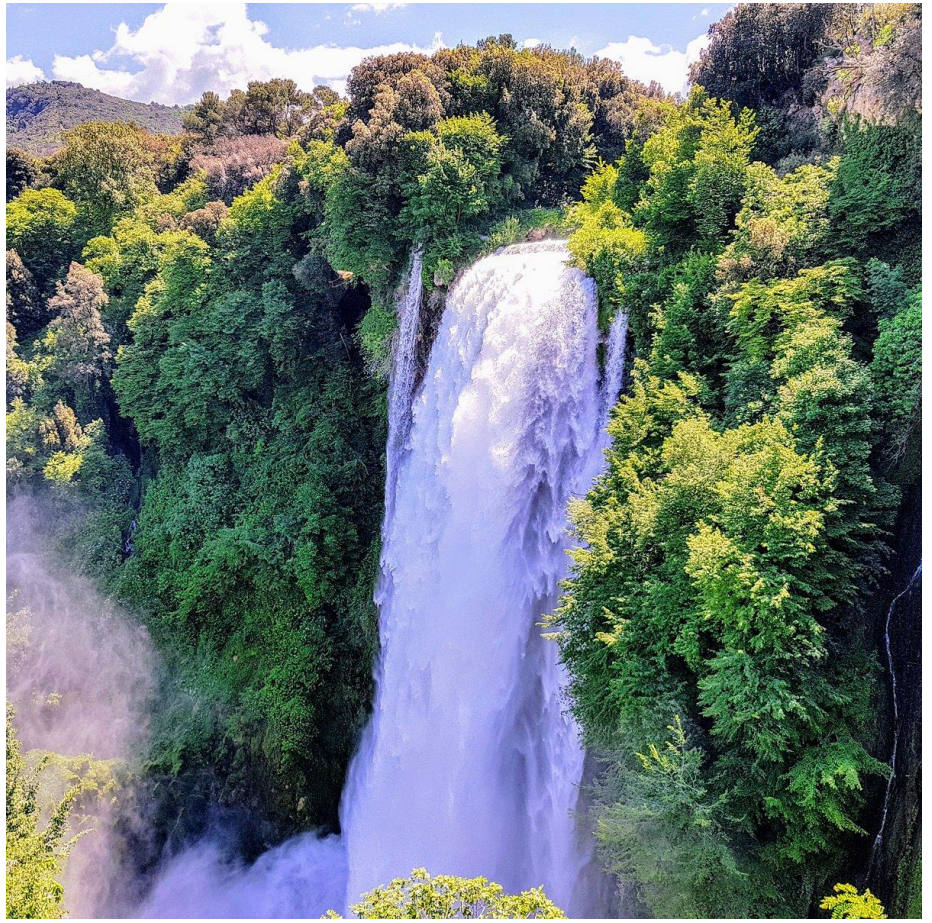
2015



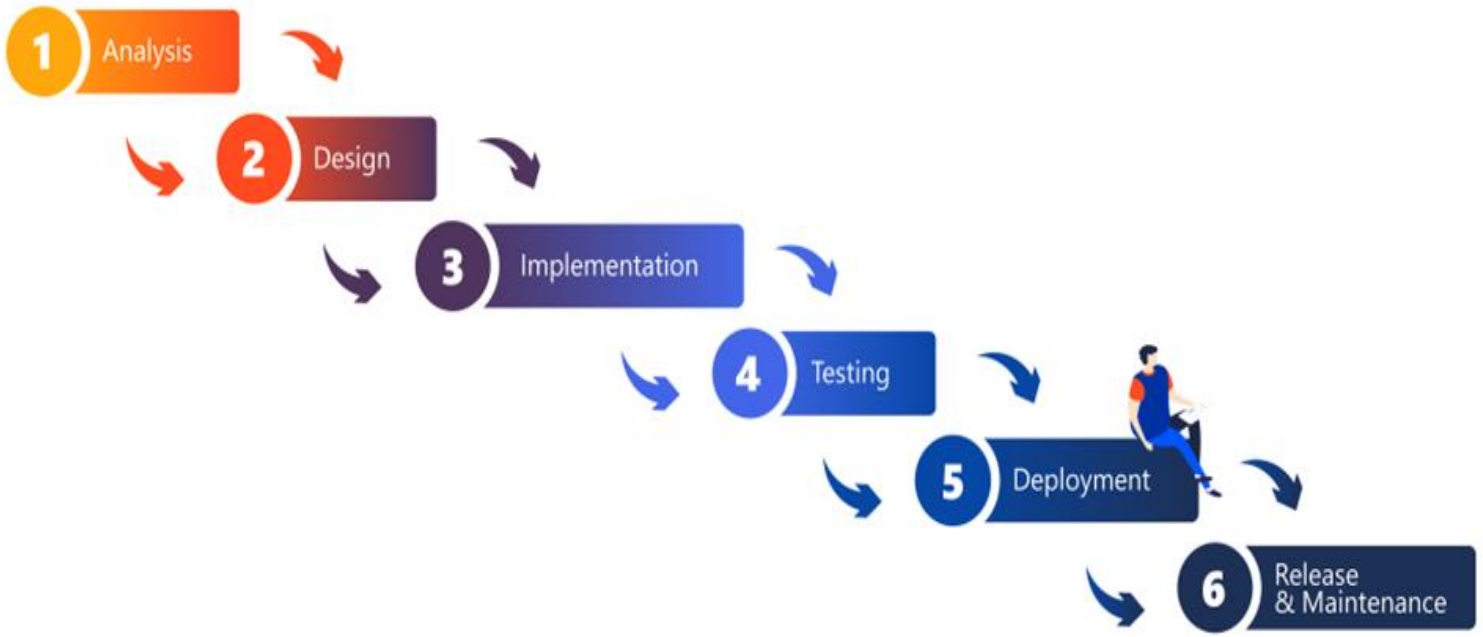
2017

Waterfall Method

1. Prescriptive model
2. Simple method to apply
3. Systematic and strictly sequential approach
4. Previous stage outputs represents next stage inputs



Waterfall Method



Strengths and Weaknesses of Waterfall Method

Strengths:

1. Adapts to big and mobile teams
2. Structured organization of resources
3. Changes are possible (exclusively) at the beginning of the project
4. Strictly defined activities, deadlines and deliverables

Strengths and Weaknesses of Waterfall Method

Weaknesses:

1. No adaptability to potential changes
2. Ignore mid-process customer feedback
3. Delayed Test Period
4. Coordination issues
5. Rigidity of applications
6. Time to market could last years

Etimologia di AGILE

Dal latino *agĭlis*, *agĕre* «do, move»

It means something that moves easily

Agile Project Management

Agile is a methodology developed for the software industry with the aim to speed-up identification and correction of defects in the development processes.

This approach is alternative to the traditional Waterfall approach and provides developers and teams with a way to deliver a better product faster, through short, iterative and interactive sessions/***sprints***.

The basic idea is not to be **predictive**, but **adaptive ->** propose values and practices to better adapt to the constant evolution of user needs.

Agile Project Management

The agile model has the characteristic of making the management of the flow of internal information and the execution of tasks more fluid.

Being agile means **prioritizing customer** success, **collaborating** with the customer, **adapting frequently** to changes, and **delivering fast** cycles.

High **commitment** of **employees** -> crucial role in the success of the methodology.

In agile management, projects are optimized because a minimum set of steps ensures deliveries that continuously generate value for the customer.

Agile Project Management

Operational tips

- **Focus on collaboration**: Processes are fundamental, but team interaction keeps the project going
- **Be functional:** functional products and services are more important than detailed project documentation
- **Seeking flexibility**: contracts are essential to formalize agreements but should not limit adjustments along the way or collaboration with the client
- **Making room for the unexpected**: planning is essential to organize production, but accepting changes both the company and the customer.

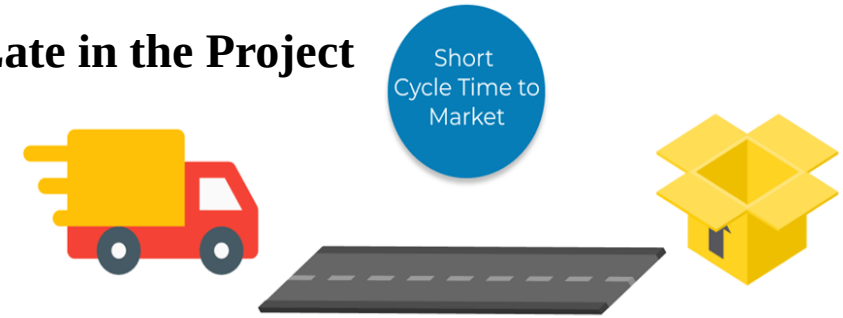
The Agile Manifesto

The Agile Manifesto was published in 2001

"Formal declaration of the four core values and twelve principles for an iterative, people-centered approach to software development."

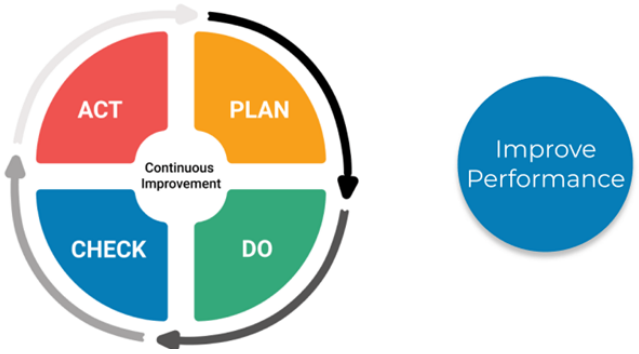
The 12 Agile Principles

1. **Satisfy Customers Through Early & Continuous Delivery**
2. **Welcome Changing Requirements Even Late in the Project**
3. **Deliver Value Frequently**
4. **Break the Silos of Your Project**
5. **Build Projects Around Motivated Individuals**
6. **The Most Effective Way of Communication is Face-to-face**



The 12 Agile Principles

7. **Working Software is the Primary Measure of Progress**
8. **Maintain a Sustainable Working Pace**
9. **Continuous Excellence Enhances Agility**
10. **Simplicity is Essential**
11. **Self-organizing Teams Generate More Value**
12. **Regularly Reflect and Adjust Your Way of Work to Boost Effectiveness**



Agile PM: Strenghts and Weaknesses

Strengths ….

- Faster development of solutions
- Reduction of waste
- Greater flexibility and adaptability to change
- Greater success through more focused efforts
- Faster delivery times
- Faster detection of issues and defects

Agile PM: Strenghts and Weaknesses

…. Strengths

- An optimized development process
- A leaner and lighter framework
- Optimal project control
- An increase in focus on the specific needs of the client
- More frequent and constant collaboration and feedback

Agile PM: Strenghts and Weaknesses

Weaknesses

1. Need to present extreme clarity objectives
2. A working strategy that is not in line with more traditional mentalities
3. Difficulty in clearly establishing costs, time and resources at the start of the project
4. Difficulty in keeping track of progress because the agile methodology is based on an incremental system.

Agile VS Waterfall

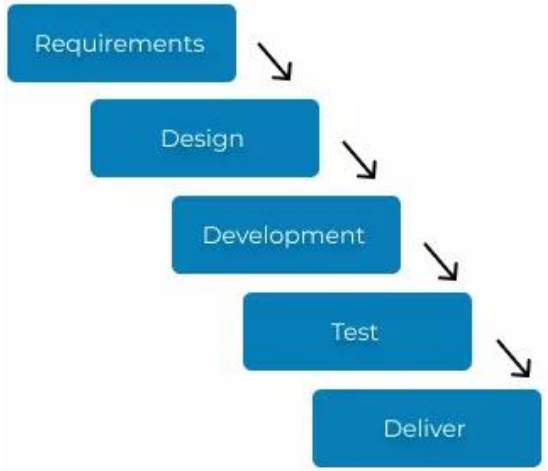
Agile thinking promotes **flexibility** and **adaptability** to changes emerging along the process of creating value, while Waterfall is a linear model for product development with strict planning and step-by-step plan execution at its heart

Bothe originated in the **software development domain** and both are nowadays employed for managing knowledge work in multiple industry fields.

Agile teams are more **reactive to changes** along the project lifecycle, whereas Waterfall is suitable for projects where the **requirements are well-defined**, and a clear plan is devised.

Agile VS Waterfall

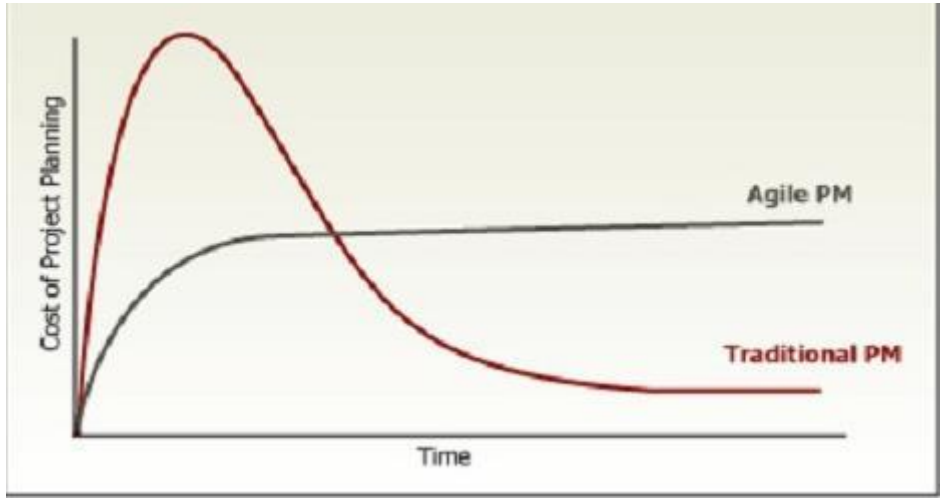
1. Customer Involvement
2. Requirements Changes
3. Scope
4. Work Prioritization
5. Agile Team vs. Waterfall Team
6. Planning in Agile vs. Waterfall



Agile VS Waterfall: What is the best?

- Both Agile and Waterfall aim at improving the way work is done, they support that mission differently

- They can be successful applied in different contexts and situations



Agile VS Waterfall: What is the best?

Focus on this aspects:

- **Complexity of project** (standardized products)
- **Rigidity** (time and budget constraints)
- **Value of the project** (what customers and stakeholders appreciate? Continuos feedback?, iteratyive updates?)
- **Corporate culture** (habits, values, behaviours)

Agile Methods and Tools

Different agile methods have developed able to address different organizational features.

Among the most used are:

SCRUM: is a framework designed to manage processes

KANBAN: is a visual tool define to support the agile management project

LEAN CULTURE: is a management philosophy, used in the production of the Toyota System. This culture faces a vision of how project management steps should be performed to reduce waste and ensure maximum productivity.

Agile Scrum Framework

Scrum is a framework, while Agile is a mindset

Scrum is a framework that helps teams work together, encourages teams to learn through experience and to reflect on the results achieved and on failures to continually improve.

Scrum describes a series of meetings, tools, and roles that work together to help teams structure and manage their work

Agile Scrum Framework

In the Scrum Framework, 3 artefacts exist:

- **Product backlog:** list of jobs to be performed and is managed by the product owner. This is a dynamic list of features that serves as an input to the sprint backlog. It is constantly reviewed and managed by the product owner
- **the sprint backlog:** list of activities or changes to implement. In the sprint planning meeting the team chooses from the product backlog the elements they will work on for the sprint. A sprint backlog can be flexible and evolve during a sprint. However, the fundamental goal of the sprint - what the team wants to achieve from the current sprint - cannot change.
- **the "increment":** is the usable end product of a sprint. It is often used to mean the definition of "completed", a milestone achieved.

Agile Scrum Framework

SPRINT is a defined period of time in which all the work is done.

It is necessary to set up the sprint, establishing the timebox, sprint goal, and starting point. The planning session kicks off the sprint by defining the program and focus areas.

When conducted correctly, it also creates an environment that provides motivation and motivation for the team, setting the stage for its success.

Inadequate sprint plans, which set unrealistic expectations, can lead the team astray.

Agile Scrum Framework

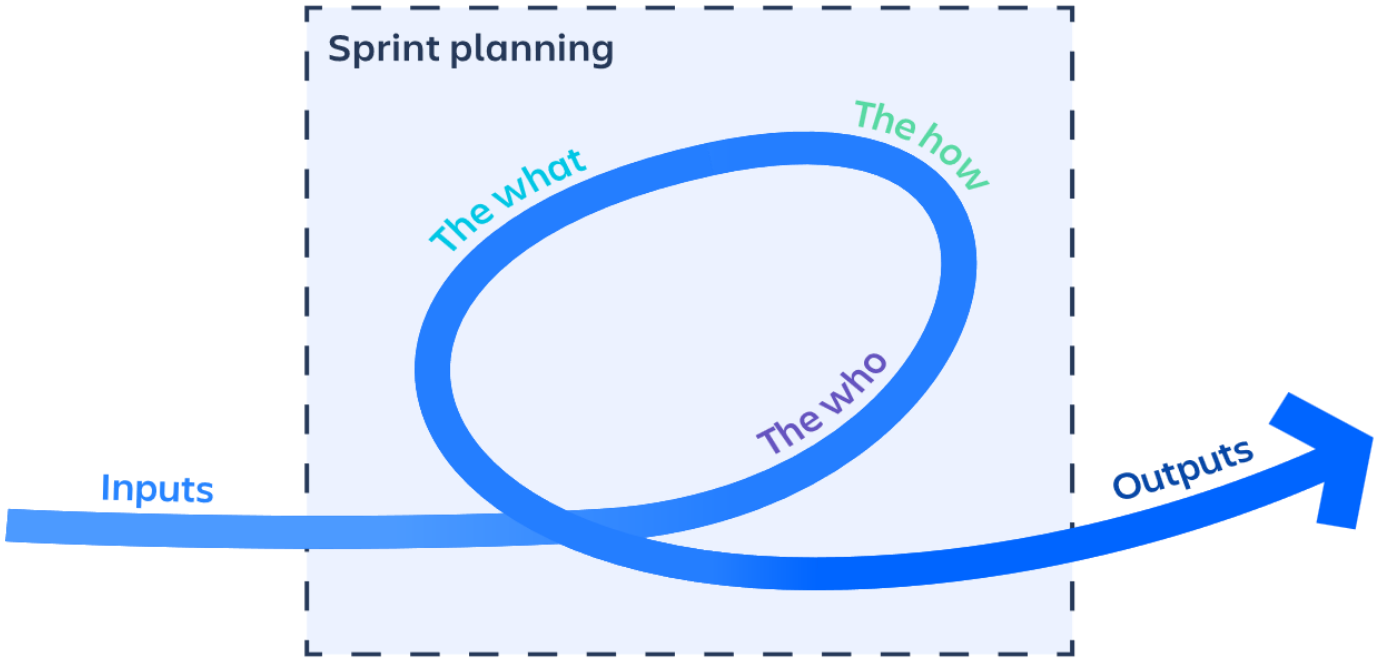
Scrum is a heuristic framework based on continuous learning and adaptation to variable factors.

It takes into account that the team does not have all the knowledge at the start of a project and that it will evolve as it gains experience.

It is structured to help teams adapt naturally to changing user conditions and needs, with process-built prioritization and short release cycles that allow the team to constantly learn and improve.

No rigid framework, although structured

Agile Scrum Framework



Agile Scrum Framework: the Events

Sequential events, ceremonies, or meetings that Scrum teams run regularly

The key ceremonies a Scrum team should attend:

1. **Backlog organization**: Definition of the list of jobs to be performed. This backlog is defined on the basis of the roadmap and requisites of the product. This event is organized and managed by product owner.
2. **Sprint planning:** The work to be performed (scope) during the current sprint is planned during this meeting by the entire development team, which is led by the Scrum Master and within which the team decides the goal of the sprint. At the conclusion of the planning meeting, each member of the Scrum team should have a clear understanding of what can be delivered in the sprint and how the increment can be delivered.
3. **Sprint**: A sprint is the period of time effective in which the Scrum team collaborates to complete an increment. During this time, the scope can be re-negotiated between the product owner and the development team as needed. This is the crucial aspect of the empirical nature of Scrum.

Agile Scrum Framework: the Events

Sequential events, ceremonies, or meetings that Scrum teams run regularly

The key ceremonies a Scrum team should attend:

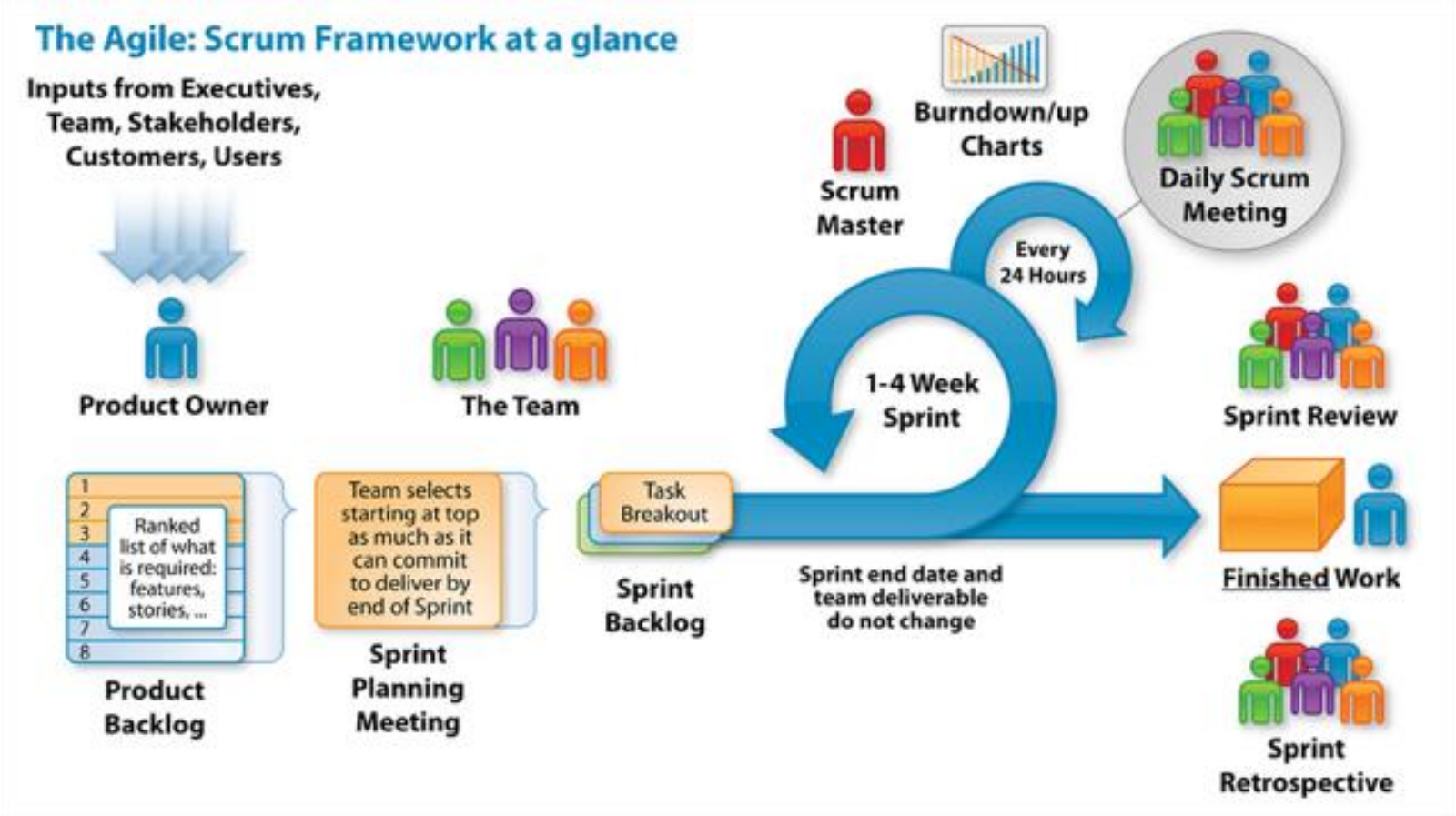
4. **Daily scrum or daily stand-up meeting**: an extremely short daily meeting that, for convenience, always takes place at the same time (usually in the morning) and in the same place. The goal of the daily Scrum is to make sure all team members are aligned with the sprint goal. The stand-up meeting is the time when all concerns about achieving the sprint goal, or any blockers are expressed
5. **Sprint Review:** : At the end of the sprint, the team meets for an informal session for the purpose of viewing a demo or inspecting the increment. The development team shows the backlog items with the status "Completed" to stakeholders or team members for the purpose of receiving feedback. The product owner can decide whether or not to release the increment, even if in most cases the increment is released
6. **Sprint retrospective:** The retrospective is the time when teams come together to document and discuss what worked and what didn't work in a sprint, project The idea is to create a situation where the team can focus on the positives and areas for improvement for the future.

Agile Scrum Framework: the main Roles

A Scrum team needs three specific roles:

1. **Scrum Product Owner:** the promoter of their products. Focused on understanding the needs of the business, customers and the market, so he prioritizes the work that needs to be done by the design team. He creates and manages the product backlog, gives the team clear guidance. Primarily responsible for ensuring that the development team delivers maximum value to the business.
2. **Scrum Master**: the promoter of Scrum activities within their teams. He supports teams, product owners and the company on the Scrum process and work to refine its practices. He has a deep understanding of the team's work and can help them optimize transparency and delivery flow. As the lead facilitator, plan the necessary resources (both human and logistical) for sprint planning, stand-up meeting, sprint review and sprint retrospective.
3. **Development team:** it includes not only developers but also testers, designers, and operational engineers. the promoters of sustainable development practices. The most effective Scrum teams are close-knit, located in the same place, and typically include five to seven members. Team members have different skills, but they share their knowledge so that no one can become a bottleneck in job delivery.

Agile Scrum Framework



Agile Kanban

The Kanban method is carried out, operationally, through blackboards, on which tags are used to keep improvements fixed and to help the team in managing processes, committing resources in the right amount of tasks, thus preventing delays or overloads of work.

It is therefore possible to divide the project into different “stacks” on the blackboard to which we assign very specific resources only when these are necessary. This approach allows us to keep inventory under control and intervene where necessary without long notice

Agile Kanban: the benefits

The main benefits are:

1. Reduction of waste
2. No constraints due pre-existing stocks
3. Increased team productivity
4. Effective process management
5. Feedback

Planning Poker

Each participant is provided with some cards each with a possible estimate. Estimates on the cards are usually a sequence of numbers.

The moderator illustrates one “User Story” at a time, inviting the participants to make their observations or requests for clarification, before expressing an evaluation.

The Product Owner answers the team's questions by clarifying all doubts on the individual user stories. Each participant chooses the card that best represents the estimate of that "user story" based on her personal evaluation. When everyone has chosen their card, they are revealed simultaneously.

If there is already consensus, the estimate is practically made, and we move on to the next "user story".

If the evaluations are very distant, one begins to comment on those at the two extremes, the highest and the lowest, to understand the rationale that led to that estimate.

Planning Poker

The approach is very effective, because people are involved in the game-technique; the estimate is accepted because it is the result of a democratic debate, any problems of the "user stories" emerge before making the estimate.

Planning Poker meetings, based on trust between people, are even more effective if:

- Only those who actually have to do the job vote.
- Managers don't vote. Instead, they can participate to clarify particular aspects of the "user stories".
- Don't go into too much detail in discussions
- Establish a priori the duration of the discussion of each "user story" and try to respect it.
- If there is no consensus on the third round of voting, adopt the broadest estimate and move on, so as to avoid anyone saying they haven't had enough time.
- Make sure the user stories are understood before the meeting, so that you can focus on the durations and not on their nature.

Thank you for the attention!