



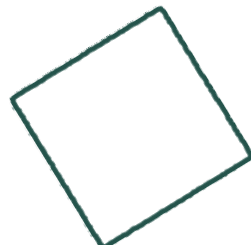
Agile Scrum Method: Self-Organization, Cross-Functionality, and Sustainably Optimized Processes

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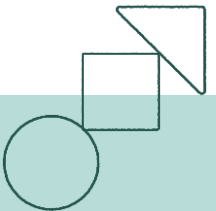


SCRUM?

Originally, the beginnings were developed by the Japanese scientists **Hiroataka Takeuchi and Ikujiro Nonaka in the mid-1980s.**

They described an **innovative approach** to **product development** which they called a holistic or "rugby" approach. This means that the entire team tries to cover the entire distance as a unit, passing the ball back and forth, rather than in a sequential relay race where the baton is passed from one to the next. They defined a flexible and all-encompassing product development strategy.

The approach is based on case studies from various industries.

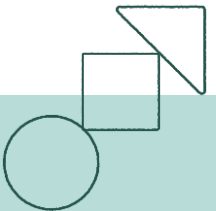


SCRUM?

Subsequently, the software developers **Jeff Sutherland and Ken Schwaber** formalized their thoughts based on the works of the Japanese scientists and published the **Scrum framework in 1995**.

Sutherland and Schwaber also published the Scrum Guide, which has since seen various revised editions. There is a tendency to grant more freedom and prescribe less.

Scrum provides the framework for **agile project management**.

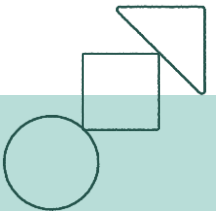


AGILITY

*Agility is the ability to shape or adapt to changes in order to be economically successful in a turbulent environment. Agility is the ability to strike **a balance between flexibility and stability.**"*

*Highsmith, 2002**

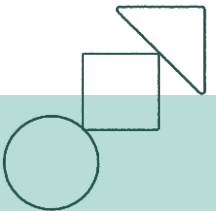
* Jim Highsmith was one of the 17 authors of the Agile Manifesto (2001) and a co-founder of the Agile Alliance



TRADITIONAL PROJECT MANAGEMENT (WATERFALL)

- There is an idea to be realized.
- At the **outset**, the exact and **detailed definition** of what the **goal** should look like is already established.
- The deadline within which the goal is to be achieved is determined.
- The workflow is divided into work packages 'backwards' starting from the deadline.
- The work packages are distributed among the individual team members, and the precise chronological sequence is determined (**cooperative approach**).
- Project meetings serve to 'hold together' the project.
- There is a hierarchical structure in place

Essentially, it involves working through a **linear, sequential process** (first this, then that, etc.), where each package must be completed before the subsequent work package can be tackled.





**WATERFALL PROJECT
MANAGEMENT (TOP DOWN)**



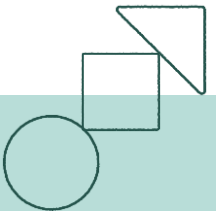
WHAT EXACTLY IS SCRUM?

Scrum is an **agile project management methodology that allows small teams to work in a self-organized manner.**

It is built on an **iterative** and **incremental process**, meaning there are recurring loops, and increments (i.e., milestones or small components) of the product, service, or outcome are delivered repeatedly. Essentially, this approach involves **collaboration** among the various stakeholders

Unlike the more **rigid waterfall project management**, where we have **successive phases** and, **at the very end**, the product, service, or outcome.

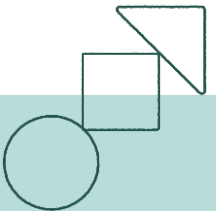
In traditional project management, everything is meticulously planned from the outset, including how the end product should look. In this approach, it's more about cooperation.



WHAT EXACTLY IS SCRUM?

- A fresh approach to project management
- An **iterative** and **incremental process**, meaning it's **adjusted** and **modified** gradually **until it's right** (iterative), and there's progress made (incremental, increments = milestones, small components of the product)
- It's NOT traditional waterfall project management
- There are **NO hierarchies**
- It's an agile project management methodology or framework where there's no detailed definition of the goal (feedback loops continuously gather feedback and respond accordingly)
- **Customers** are at the forefront

We don't pursue the goal set at the beginning, but rather what the customers expect. This is where uncertainty often arises, as it's quite common for customers not to know exactly what they want or to change their original desires.

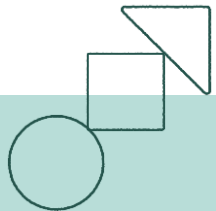




SCRUM – NO HIERARCHIES



SCRUM - ELEMENTS



ACCOUNTABILITIES

Scrum Master

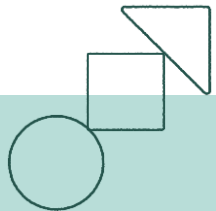
- Ensures compliance with rules, coaches and trains, **keeps the project operational**

Product Owner

- **Responsible** for the **product**, collaborates with stakeholders to define requirements implemented by the Scrum Team, however, **holds no delegation authority**; everyone operates independently and self-accountably

Scrum Team

- The members of the Scrum Team (developers) **implement requirements** and also **decide** which ones to **prioritize**



ARTEFACTS

1. Product Backlog = Prioritized features list

Everything we need to know about the product (responsibility of the Product Owner, but can be supported by others)

2. Sprint Backlog = A subset of the Product Backlog a list of work items your team plans to complete during a project sprint

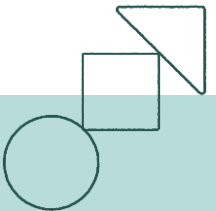
It's about developers creating a plan and a development phase, i.e., a sprint. It includes all backlog items, meaning everything that the teams plans to complete during a phase, a project sprint.

3. Increment = Milestone, or a small component of the product

A part of the product that is potentially shippable after each sprint.

Note:

In traditional project management, we would build component by component and only assemble everything at the end (e.g., website development, step-by-step development of individual pages with feedback loops).

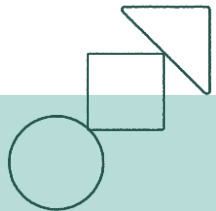


EVENTS

These are recurring meetings with specific characteristics, hence they become events in Scrum.

1. **Sprint** (project phase, a kind of '**mini-project**'), lasting a maximum of 4 weeks, hence always rapid and continuous feedback.
2. **Sprint Planning: Planning** the **next project phase**, i.e., the next **sprint**.
3. **Daily Scrum**: The **daily meeting** of the Scrum Team, fostering communication, **indicating where they currently stand** in the project, what they did the previous day, what they plan to do on the current day, and any issues to be addressed.
4. **Sprint Review at the end of the sprint: Evaluation** of the **increment**, i.e., the milestone delivered, and gathering feedback from all stakeholders (all present, Scrum Team and Scrum Stakeholders).
5. **Sprint Retrospective**: Review of the **sprint** and **teamwork**, focusing on 'lessons learned,' what went well, what didn't, and what to improve in the next sprint (only Scrum team present).

Then, it starts over again: iterative process, loops, it repeats itself.

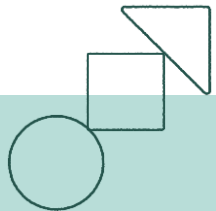
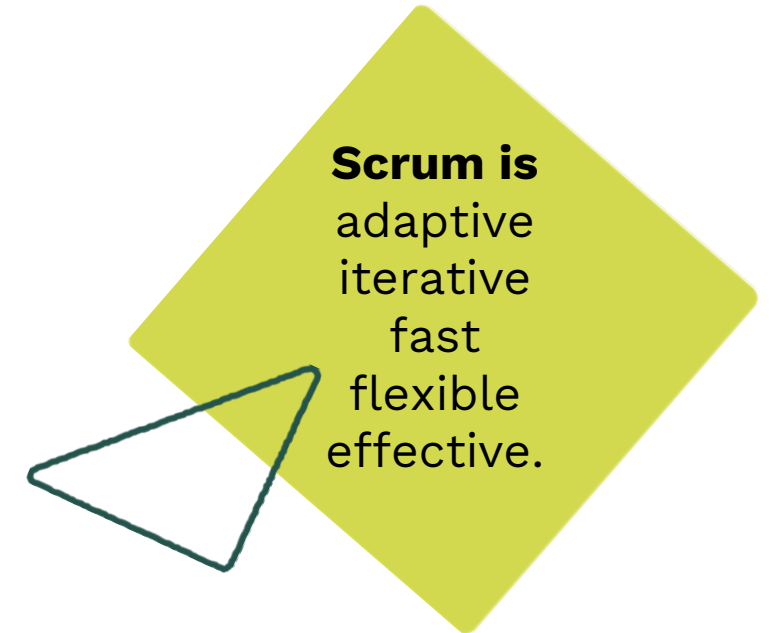


WHY SCRUM?

Scrum is one of the **most popular agile project management frameworks** that supports product and service development across **all types of industries** and in any kind of project, regardless of its complexity.

An essential strength of Scrum lies in **cross-functional, self-organized teams** dividing their work into short, concentrated work cycles, known as Sprint.

Scrum ensures **transparency in communication** and fosters a work environment of **collective accountability** and continuous progress.



WHY SCRUM?

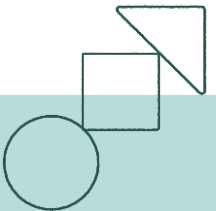
Scrum provides the framework for **agile project management** :

- **Lean processes**
- Incremental development to **optimize predictability** and
- **Risk control** (incremental, iterative approach: sprints)
- Regular **feedback loops**

Scrum is based on the premise that:

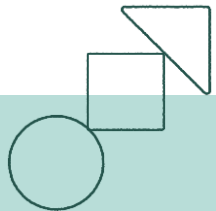
- **Knowledge is gained through experience**, and decisions are made based on **observations** (empiricism).
- Waste is minimized by **focusing on essentials** as much as possible (Lean Thinking)

A Scrum project is a **collaborative effort** to create a new product, service, or other outcome, as defined in the project vision statement.



UNLOCKING SUCCESS: THE ADVANTAGES OF SCRUM

- ▶ **Iterative Processes**
- ▶ **Customer-Centricity**
- ▶ **Adaptability**
- ▶ **Transparency and clarity**
- ▶ **Continuous feedback**
- ▶ **Continuous improvement**
- ▶ **Efficient processes**
- ▶ **Self-responsible, motivated teams**
- ▶ **Early problem-solving and cost savings**
- ▶ **Innovative work environment and continuous learning**



SCRUM VALUES

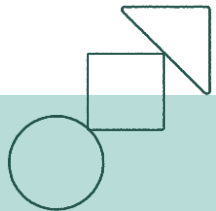
Commitment

Openness

Courage

Focus

Respect

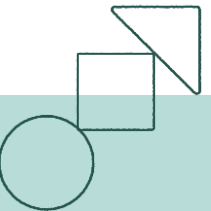


SCRUM PRINCIPLES

SCRUM is based on the Agile Manifesto (2001), which contains 12 principles applicable to all agile methods.

The Scrum principles can be applied to any type of project or organization.

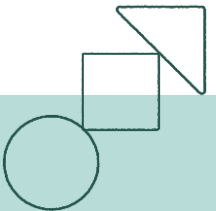
Adhering to them is crucial for the success of the Scrum methodology.



SCRUM PRINCIPLES

The 12 Scrum principles at a glance :

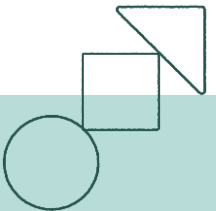
1. Satisfying customers through **valuable outcomes**.
2. **Changes are welcome**. They represent a potential competitive advantage for customers.
3. **Continuously delivering working results** (increments) to customers.
4. Developers and experts (Product Owners) **work closely together in interdisciplinary teams** throughout the project duration.
5. **People** are always at the **center**, not the process. They need support and at the same time the freedom to unfold. Rely on motivated individuals and provide an environment that fosters their development.
6. Gathering at short and regular intervals to discuss how effectiveness can be continuously improved.



SCRUM PRINCIPLES

The 12 Scrum principles at a glance :

7. Exchanging information through **direct conversations** is more efficient than any other form of communication or channel.
8. **The effectiveness of the outcomes** are the measure by which progress is measured.
9. All stakeholders involved should be **able to maintain the pace indefinitely** (Marathon principle).
10. **Technical excellence** and outstanding **design**.
11. The **essence**, and thus simplicity, is the **goal**. Leave out everything else.
12. **Self-organizing teams** in planning and implementation are synonymous with empowerment



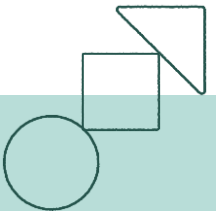
EMPIRICAL PROCESS CONTROL

Empirical" translates to "systematic learning from experience".

The work is controlled **by systematically learning from experience** and **making** corresponding **adjustments** to achieve the goal

in contrast to

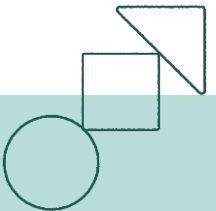
defined control, where requirements and solutions are defined as the **prescribed approach**.
Implementation is carried out by **monitoring the desired plan**, which is **compared with the actual state**.



SELF-ORGANIZATION

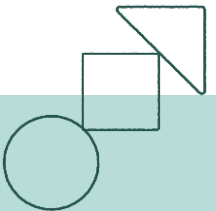
This principle is based on the assumption that self-organized team members are more motivated and therefore willing to **take on more responsibility**.

The preferred leadership style in Scrum is '**supportive leadership**', where people and their needs are prioritized in achieving results or goals



COLLABORATION

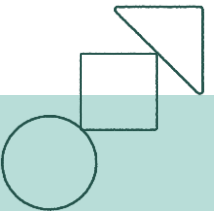
Collaboration is the **joint effort** of the **Scrum team** and their coordination with the business stakeholders to deliver and validate project results.



VALUE-BASED PRIORITIZATION

Scrum prioritizes **tasks based on value and importance**, which greatly facilitates the work structure.

Furthermore, Scrum aims to deliver a valuable product or service to customers early and continuously."

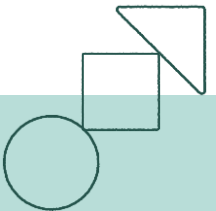


AVOIDING MEANINGLESS ACTIVITIES: MUDA

The term 'Muda' originates from Japanese and translates to 'waste', which can also be synonymous with 'meaningless activity':

The concept is part of **Lean Thinking**. In this context, waste is considered as something that does not contribute to value creation: primarily from the perspective of the customers, but also from the perspective of the company.

Waste is the **consumption of resources** in the broadest sense that do **not generate added value**.



MUDA?

Overproduction

Inventory

Motion

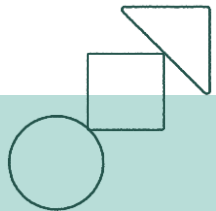
Waiting times

Transportation

Defects and rework

Unnecessary process steps / Extra processing

Unused talents

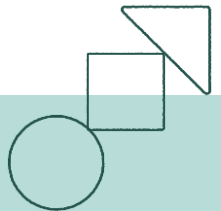


TIME-BOXING

In Scrum, time is considered one of the most important resources and constraints of project management.

“Time-Boxing” consists of defining **a specific time span** for each process and activity. This ensures that the members of the Scrum team **do not take on too much or too little work** for a given period and do not spend their time and energy on tasks that would constitute a form of waste (including excessive improvements).

Note: Arbitrary time-boxing can lead to team demotivation and deterioration of the work environment, which is why it should be applied appropriately.

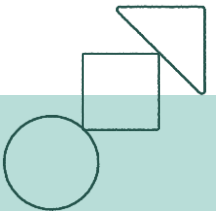


ITERATIVE DEVELOPMENT

In many complex projects, **customers** are often unable to define specific requirements, or they **lack a clear vision** of what the end product should look like.

The iterative model is more flexible and ensures that all **changes** desired by the customers throughout the project **can be incorporated**.

In Scrum, project requirements are **constantly adjusted** to **meet** current **needs**. Activities are repeatedly reviewed to develop the best possible product.



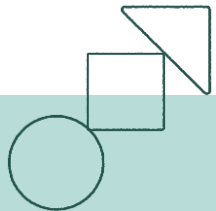
SCRUM – IN CONCLUSION

Advantages

- ❑ Flexibility
- ❑ Short communication paths
- ❑ Quick problem identification and reduced administrative effort
- ❑ Maximum transparency
- ❑ Continuous improvement process
- ❑ Motivation and effectiveness through self-organization
- ❑ Timely realization of project results

Some Constraints

- ❑ Scrum requires extraordinary efforts from all project members throughout the development process. It's not uncommon for team members to work overtime, with some logging up to 100 hours per month during peak phases and 60 hours during the rest of the project.
- ❑ Even for large-scale projects such as those in aerospace, Scrum might not be suitable, as the sheer size of the project makes detailed personal conversations practically impossible.
- ❑ For companies where product development is led by a 'genius' who invents and dictates a set of precisely defined specifications for employees to adhere to, Scrum might not be the best solution.



Thank you for your attention!

Do not hesitate to contact me for further information,
and/or if you are interested in becoming a Scrum Master.
IP-International is collaborating with VMEdU.

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