



Agile Project Management
Sample Material
VS-1255

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1. AGILE METHODOLOGIES

Various agile methodologies, are

- ✓ Dynamic System Development Methodology (DSDM) - It is an agile framework for software projects. It was used to fine-tune the traditional approaches. The most recent version of DSDM is called DSDM Atern. The name Atern is a short for Arctic Tern - a seabird that can travel vast distances that represents many features of the method which are natural ways of working such as prioritization and collaboration.
- ✓ Scrum - It is the most popular agile framework, which concentrates particularly on how to manage tasks within a team-based development environment. Scrum uses iterative and incremental development model, with shorter duration of iterations. Scrum is relatively simple to implement and focuses on quick and frequent deliveries.
- ✓ Extreme Programming (XP) - It is a type of agile software development. It advocates frequent releases in short development cycles, which is intended to improve productivity and introduce checkpoints where new customer requirements can be adopted. The methodology takes its name from the idea that the beneficial elements of traditional software engineering practices are taken to extreme levels. (Extreme Programming is a software-development discipline that organizes people to produce higher-quality software more productively.) XP addresses the analysis, development, and test phases with novel approaches that make a substantial difference to the quality of the end-product.
- ✓ Test-driven Development (TDD) - It is a software development process that relies on the repetition of a very short development cycle: first the developer writes an automated test case that defines a desired improvement or a new function, then it produces the least amount of code to pass that test, and finally brings the new code to acceptable standards.
- ✓ Lean - It is a production practice that considers the expenditure of resources for any goal other than the creation of value for the end-customer to be wasteful, and thus a target for elimination. Working from the perspective of the customer who consumes a product or service, the term value is defined as any action or process that a customer would be willing to pay for. Lean is centered on preserving value with less work.
- ✓ Kanban - It is a system to improve and keep up a high level of production. Kanban is one method through which Just-In-Time (JIT), the strategy the organizations employ to control the inventory expenses, is achieved. Kanban became an effective tool in support of running a production system as a whole, and it proved to be an excellent way for promoting improvement.

1.1. Scrum

Scrum is an iterative and incremental framework for managing product development. It defines "a flexible, holistic product development strategy where a development team works as a unit to reach a common goal", challenges assumptions of the "traditional, sequential approach" to product development, and enables teams to self-organize by encouraging physical co-location or close online collaboration of all team members, as well as daily face-to-face communication among all team members and disciplines involved.

A key principle of Scrum is the dual recognition that customers will change their minds about what they want or need (often called requirements volatility) and that there will be unpredictable

challenges—for which a predictive or planned approach is not suited. As such, Scrum adopts an evidence-based empirical approach—accepting that the problem cannot be fully understood or defined up front, and instead focusing on how to maximize the team's ability to deliver quickly, to respond to emerging requirements, and to adapt to evolving technologies and changes in market conditions.

Many of the terms used in Scrum (e.g., scrum master) are typically written with leading capitals (i.e., Scrum Master) or as conjoint words written in camel case (i.e., ScrumMaster).

While the trademark on the term Scrum itself has been allowed to lapse, so that it is deemed as owned by the wider community rather than an individual, the leading capital is retained—except when used with other words (as in daily scrum or scrum team).

Scrum is considered to be a lightweight agile method that uses practices, events, roles, artifacts, and rules for project execution. This method is supported by three “pillars” that guide all facets of the Scrum project:

- ✓ **Transparency:** Everything on a Scrum project is visible to all who have a stake in the outcome. The outcome of Scrum is transparent and visible to stakeholders, thereby fostering a very open and collaborative culture. This requires creating a common standard or definition that is understood and agreed by all in the team. Examples of such are the use of burndown charts, impediments log, convention of daily stand-up meetings, or a ‘definition-of-done’ between the development team and the user accepting the work.
- ✓ **Inspection:** The Scrum project is inspected on a regular basis to ensure that progress is being made toward the goals and objectives. The members of a Scrum team frequently inspect how the project is progressing toward its goal and keeping a check on the variances. Examples of opportunities for inspection are sprint reviews and sprint retrospectives. During these events the project team inspects and reflects on the project metrics like escaped defect rate or burndown charts or user feedback.
- ✓ **Adaptation:** Processes are adjusted as needed when problems or undesirable issues present themselves. Adaptation is the ‘secret-sauce’ how Scrum teams continuously strive for improvement. All ceremonies of Scrum has feedback loops, where the team comes together and optimizes the product or the process of making it. Such an adjustment happens in real time.

The benefits of Scrum include but are not limited to the following:

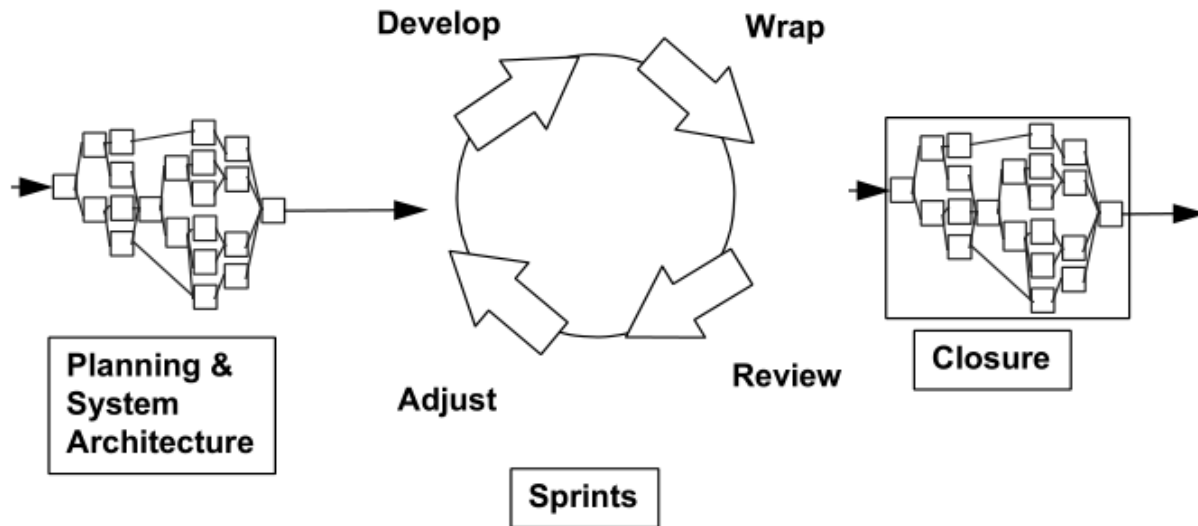
- ✓ The process is incremental and iterative.
- ✓ Requirements are permitted to change over a period of time.
- ✓ The end users are actively involved throughout the project.
- ✓ The process is straightforward and uncomplicated.

Possible weaknesses of Scrum methods include:

- ✓ In the event that a team member leaves the project, the impact is significant.
- ✓ The Scrum project requires experienced team members. Inexperienced team members can lead to project delays.
- ✓ The method is very informal.

A typical Scrum project has six to ten team members. This agile method is more suited to small teams, however, it can be adapted to large teams as well. Companies and projects that are team, value, and customer oriented are the best candidates for Scrum methods.

The primary difference between the defined (waterfall, spiral and iterative) and empirical (SCRUM) approach is that The SCRUM approach assumes that the analysis, design, and development processes in the Sprint phase are unpredictable. A control mechanism is used to manage the unpredictability and control the risk. Flexibility, responsiveness, and reliability are the results.



History

Hiroataka Takeuchi and Ikujiro Nonaka introduced the term scrum in the context of product development in their 1986 Harvard Business Review article, "New New Product Development Game". Takeuchi and Nonaka later argued in *The Knowledge Creating Company* that it is a form of "organizational knowledge creation, especially good at bringing about innovation continuously, incrementally and spirally".

The authors described a new approach to commercial product development that would increase speed and flexibility, based on case studies from manufacturing firms in the automotive, photocopier and printer industries. They called this the holistic or rugby approach, as the whole process is performed by one cross-functional team across multiple overlapping phases, where the team "tries to go the distance as a unit, passing the ball back and forth". (In rugby football, a scrum is used to restart play, as the forwards of each team interlock with their heads down and attempt to gain possession of the ball.)

In the early 1990s, Ken Schwaber used what would become Scrum at his company, Advanced Development Methods; while Jeff Sutherland, John Scumniotales and Jeff McKenna, developed a similar approach at Easel Corporation, referring to it using the single word Scrum.

In 1995, Sutherland and Schwaber jointly presented a paper describing the Scrum framework at the Business Object Design and Implementation Workshop held as part of Object-Oriented Programming, Systems, Languages & Applications '95 (OOPSLA '95) in Austin, Texas. Over the

following years, Schwaber and Sutherland collaborated to combine this material—with their experience and evolving good practice—to develop what became known as Scrum.

In 2001, Schwaber worked with Mike Beedle to describe the method in the book, *Agile Software Development with Scrum*. Scrum's approach to planning and managing product development involves bringing decision-making authority to the level of operation properties and certainties.

In 2002, Schwaber with others founded the Scrum Alliance and set up the Certified Scrum accreditation series. Schwaber left the Scrum Alliance in late 2009 and founded Scrum.org which oversees the parallel Professional Scrum accreditation series.

Since 2010, there is a public document called *The Scrum Guide* that defines sort of an official version of Scrum and is occasionally revised. In 2018 it was expanded upon with the publication of *The Kanban Guide for Scrum Teams*.

Roles

There are three core roles in the Scrum framework. These are ideally co-located to deliver potentially shippable product increments every sprint. Together these three roles form the scrum team. While many organizations have other roles involved with defining and delivering the product, Scrum defines only these three.

Product owner - The product owner represents the product's stakeholders and the voice of the customer; and is accountable for ensuring that the team delivers value to the business. The product owner defines the product in customer-centric terms (typically user stories), adds them to the product backlog, and prioritizes them based on importance and dependencies. Scrum teams should have one product owner. This role should not be combined with that of the scrum master. The product owner should focus on the business side of product development and spend the majority of their time liaising with stakeholders and should not dictate how the team reaches a technical solution. This role is equivalent to the customer representative role in some other agile frameworks such as extreme programming (XP).

Communication is a core responsibility of the product owner. The ability to convey priorities and empathize with team members and stakeholders is vital to steer product development in the right direction. The product owner role bridges the communication gap between the team and its stakeholders, serving as a proxy for stakeholders to the team and as a team representative to the overall stakeholder community.

As the face of the team to the stakeholders, the following are some of the communication tasks of the product owner to the stakeholders:

- ✓ demonstrates the solution to key stakeholders who were not present at a sprint review;
- ✓ defines and announces releases;
- ✓ communicates team status;
- ✓ organizes milestone reviews;
- ✓ educates stakeholders in the development process;
- ✓ negotiates priorities, scope, funding, and schedule;
- ✓ ensures that the product backlog is visible, transparent, and clear.

Empathy is a key attribute for a product owner to have—the ability to put one's self in another's shoes. A product owner converses with different stakeholders, who have a variety of backgrounds, job roles, and objectives. A product owner must be able to see from these different points of view. To be effective, it is wise for a product owner to know the level of detail the audience needs. The development team needs thorough feedback and specifications so they can build a product up to expectation, while an executive sponsor may just need summaries of progress. Providing more information than necessary may lose stakeholder interest and waste time. A direct means of communication is the most preferred by seasoned agile product owners.

A product owner's ability to communicate effectively is also enhanced by being skilled in techniques that identify stakeholder needs, negotiate priorities between stakeholder interests, and collaborate with developers to ensure effective implementation of requirements.

Development team - The development team is responsible for delivering potentially shippable product increments every sprint (the sprint goal).

The team has from three to nine members who carry out all tasks required to build the product increments (analysis, design, development, testing, technical writing, etc.). Although there will be several disciplines represented in the team, its members are referred to generically as developers. To avoid potential confusion that this only refers to programmers, some organizations call this a delivery team and its members just team members.

The development team in Scrum is self-organizing, even though there may be interaction with other roles outside the team, such as a project management office (PMO).

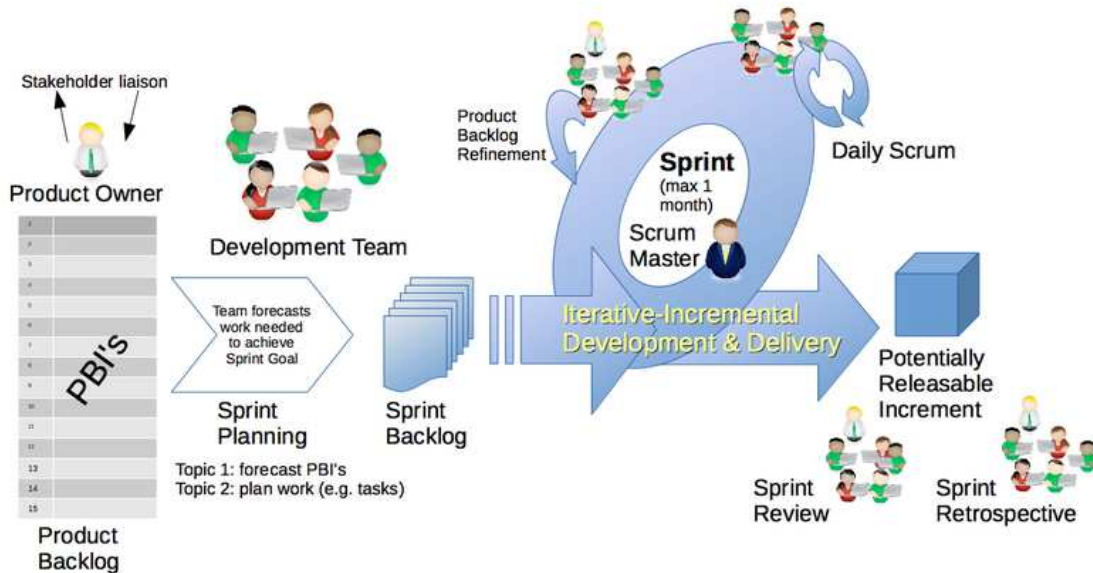
Scrum master - Scrum is facilitated by a scrum master, who is accountable for removing impediments to the ability of the team to deliver the product goals and deliverables. The scrum master is not a traditional team lead or project manager but acts as a buffer between the team and any distracting influences. The scrum master ensures that the Scrum framework is followed. The scrum master helps to ensure the team follows the agreed processes in the Scrum framework, often facilitates key sessions, and encourages the team to improve. The role has also been referred to as a team facilitator or servant-leader to reinforce these dual perspectives.

The core responsibilities of a scrum master include (but are not limited to):

- ✓ Helping the product owner maintain the product backlog in a way that ensures the needed work is well understood so the team can continually make forward progress
- ✓ Helping the team to determine the definition of done for the product, with input from key stakeholders
- ✓ Coaching the team, within the Scrum principles, in order to deliver high-quality features for its product
- ✓ Promoting self-organization within the team
- ✓ Helping the scrum team to avoid or remove impediments to its progress, whether internal or external to the team
- ✓ Facilitating team events to ensure regular progress
- ✓ Educating key stakeholders in the product on Scrum principles
- ✓ Coaching the development team in self-organization and cross-functionality

One of the ways the scrum master role differs from a project manager is that the latter may have people management responsibilities and the scrum master does not. Scrum does not formally recognise the role of project manager, as traditional command and control tendencies would cause difficulties.

Workflow



Sprint - A sprint (or iteration) is the basic unit of development in Scrum. The sprint is a timeboxed effort; that is, it is restricted to a specific duration. The duration is fixed in advance for each sprint and is normally between one week and one month, with two weeks being the most common.

Each sprint starts with a sprint planning event that aims to define a sprint backlog, identify the work for the sprint, and make an estimated forecast for the sprint goal. Each sprint ends with a sprint review and sprint retrospective, that reviews progress to show to stakeholders and identify lessons and improvements for the next sprints.

Scrum emphasizes working product at the end of the sprint that is really done. In the case of software, this likely includes that the software has been fully integrated, tested and documented, and is potentially shippable.

Certifications

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- Certified Treasury Market Professional
- Certified Wealth Manager

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- Certified Hadoop and Mapreduce Professional

➤ Cloud Computing

- Certified Cloud Computing Professional

➤ Design

- Certified Interior Designer

➤ Digital Media

- Certified Social Media Marketing Professional
- Certified Inbound Marketing Professional
- Certified Digital Marketing Master

➤ Foreign Trade

- Certified Export Import (Foreign Trade) Professional

➤ Health, Nutrition and Well Being

- Certified Fitness Instructor

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- Certified HR Staffing Manager
- Certified Human Resources Manager
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- Certified Project Management Professional

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- Certified Real Estate Consultant

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- Certified Business Law Analyst
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- Certified Advertising Sales Professional

➤ Sales, BPO

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