Software Systems Design

IT project management. Scrum. Team forming and team roles

Team work

1. **Scrum**
2. **Team forming**
3. **Team roles**

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Scrum

1. Scrum

What is Scrum?

Scrum is a **management and control process** that cuts through complexity to focus on building software that meets business needs. Management and teams are able to get their hands around the requirements and technologies, never let go, and deliver working software, incrementally and empirically.
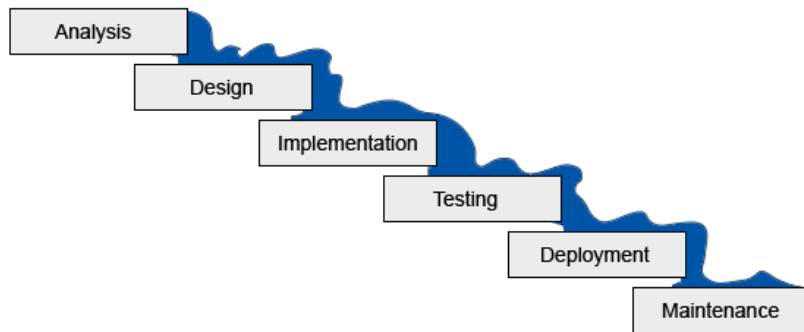
Scrum itself is **a simple framework for effective team collaboration** on complex software projects. Ken Schwaber and Jeff Sutherland have written The Scrum Guide to explain Scrum clearly and succinctly.

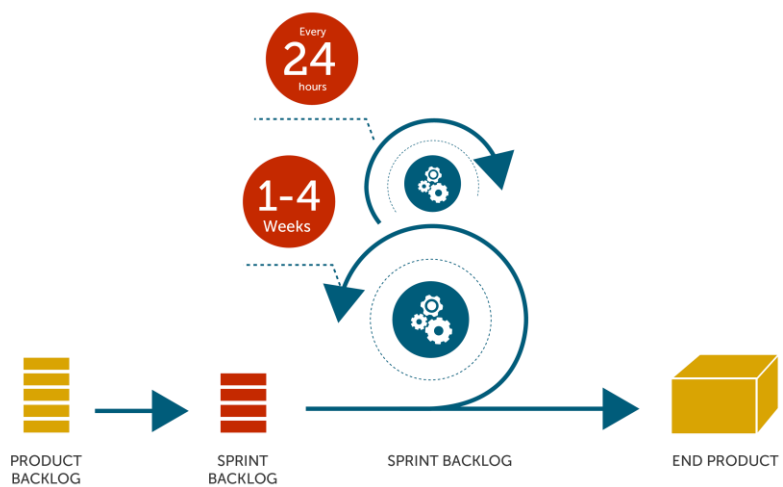**Scrum is a better way of building software**

1. Scrum

Why not waterfall?

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1. Scrum

Scrums' lifecycle

PRODUCT BACKLOG → SPRINT BACKLOG → SPRINT BACKLOG → END PRODUCT

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1. Scrum

Scrum is…

…lightweight
…easy to understand
…difficult to master

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Scrum team

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1. Scrum

Scrum team

- Product owner
- Scrum master
- Development team

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1. Scrum

Product owner

The product owner represents the **stakeholders** and is the voice of the customer, who is accountable for ensuring that the team delivers value to the business.

The product owner writes customer-centric items (typically user stories), ranks and prioritizes them, and adds them to the **product backlog.**

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1. Scrum

Product owner's responsibilities:

• 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.

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1. Scrum

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

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1. Scrum

Scrum master's responsibilities:

• 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

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1. Scrum

Development team

The development team is responsible for delivering **potentially shippable increments (PSIs)** of product at the end of each sprint (**the sprint goal**).

Development teams are **cross-functional,** with all of the skills as a team necessary to create a product increment.

The development team in scrum is **self-organizing**.

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Scrum events

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1. Scrum

Scrum events:

- Sprint
- Sprint planning
- Sprint review
- Sprint retrospective
- Daily scrum
- Backlog refinement (Backlog grooming)

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1. Scrum

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 (usually 1-4 weeks).

Each sprint starts with a **sprint planning** and ends with **a sprint review and sprint retrospective.**

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 **integrated, fully tested, end-user documented, and is potentially shippable.**

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1. Scrum

Sprint planning

- Communicates the scope of work likely during that sprint
- Selects product backlog items that likely can be done
- Prepares the sprint backlog
- Sets a four-hour time planning event limit for a two-week sprint:
    - During the first half, the whole team (development team, scrum master, and product owner) agree what product backlog items to consider for that sprint
    - During the second half, the development team decomposes the work (tasks) required to deliver those backlog items, resulting in the sprint backlog

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1. Scrum

Sprint review

At the **sprint review**, the team:
• Reviews the work that was completed and the planned work that was not completed
• Presents the completed work to the stakeholders (demo)

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1. Scrum

Sprint retrospective

At the **sprint retrospective**, the team:
• Reflects on the past sprint
• Identifies and agrees continuous process improvement actions

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1. Scrum

Daily scrum

During the daily scrum, each team-member answers three questions:

- What did I do yesterday that helped the development team meet the sprint goal?
- What will I do today to help the development team meet the sprint goal?
- Do I see any impediment that prevents me or the development team from meeting the sprint goal?

Only 15 minutes for daily scrum!

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1. Scrum

Backlog refinement (backlog grooming)

Backlog refinement (once called backlog grooming) is the ongoing process of reviewing product backlog items and checking that they are appropriately prioritised and prepared in a way that makes them clear and executable for teams once they enter sprints via the sprint planning activity.

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Scrum artifacts

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1. Scrum

Artifacts

- Product backlog
- Sprint backlog
- Product increment

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1. Scrum

Product backlog

The product backlog comprises an ordered list of requirements that a scrum team maintains for a product.

The product owner orders the product backlog items (PBIs) based on considerations such as risk, business value, dependencies, and date needed.

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1. Scrum

Sprint backlog

The sprint backlog is the list of work the development team must address during the next sprint.

The product backlog items may be broken down into tasks by the development team.

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1. Scrum

Product increment

The increment (or potentially shippable increment, PSI) is the sum of all the product backlog items completed during a sprint and all previous sprints.

At the end of a sprint, the increment must be complete, according to the scrum team's **Definition of Done (DoD),** and in a usable condition regardless of whether the product owner decides to actually release it.

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Group development

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2. Tuckman's stages of group development

The **forming–storming–norming–performing** model of group development was first proposed by Bruce Tuckman in 1965.

All these phases are **necessary** and inevitable in order for the team to grow, to face up to challenges, to tackle problems, to find solutions, to plan work, and to deliver results

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2. Group development

1st phase: FORMING

In this stage, most team members are positive and polite. Some are anxious, as they haven't fully understood what work the team will do. Others are simply excited about the task ahead.

As leader, you play a dominant role at this stage, because team members' roles and responsibilities aren't clear.

This stage can last for some time, as people start to work together, and as they make an effort to get to know their new colleagues.

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2. Group development

2nd phase: STORMING

Next, the team moves into the storming phase, where people start to push against the boundaries established in the forming stage. This is the stage where many teams fail.

Storming often starts where there is a conflict between team members' natural working styles. People may work in different ways for all sorts of reasons but, if differing working styles cause unforeseen problems, they may become frustrated.

Important: resolving conflicts, building good relationships.

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2. Group development

3rd phase: NORMING

Gradually, the team moves into the norming stage. This is when people start to resolve their differences, appreciate colleagues' strengths, and respect your authority as a leader.

Now that your team members know one another better, they may socialize together, and they are able to ask one another for help and provide constructive feedback. People develop a stronger commitment to the team goal, and you start to see good progress towards it.

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2. Group development

4th phase: PERFORMING

The team reaches the performing stage, when hard work leads, without friction, to the achievement of the team's goal. The structures and processes that you have set up support this well.

As leader, you can delegate much of your work, and you can concentrate on developing team members.

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2. Group development

Team climate – what's important?

Leader's support

Clear communication

Celebration

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2. Group development

Team's identity – what's important?

Effective meetings (kick-offs, status reviews)
Joint workplace (war room)
Team name (logo)

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Team roles

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3. Team roles

Meredith Belbin is a British researcher and management theorist best known for his work on management teams.

Belbin have identified **nine different behaviour types** that individuals display in the work place, we call these the nine Team Roles.

Typically, most people have two or three **Team Roles** that they are most comfortable with and prefer.

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3. Team roles

Team roles – Belbin's classification:

Company Worker/Implementer
Chairman/Co-ordinator
Shaper
Plant
Resource Investigator
Monitor-Evaluator
Team Worker
Completer-Finisher
Specialist

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3. Team roles

Company Worker/Implementer

Needed to plan a workable strategy and carry it out as efficiently as possible

Strengths: Practical, reliable, efficient. Turns ideas into actions and organises work that needs to be done

Allowable weaknesses: Can be a bit inflexible and slow to respond to new possibilities

Don't be surprised to find that: They might be slow to relinquish their plans in favour of positive changes

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3. Team roles

Chairman/Co-ordinator

Needed to focus on the team's objectives, draw out team members and delegate work appropriately

Strengths: Mature, confident, identifies talent. Clarifies goals. Delegates effectively

Allowable weaknesses: Can be seen as manipulative and might offload their own share of the work

Don't be surprised to find that: They might over-delegate, leaving themselves little work to do

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3. Team roles

Shaper

Provide the necessary drive to ensure that the team keep moving and do not lose focus or momentum

Strengths: Challenging, dynamic, thrives on pressure. Has the drive and courage to overcome obstacles

Allowable weaknesses: Can be prone to provocation, and may sometimes offend people's feelings

Don't be surprised to find that: They could risk becoming aggressive and bad-humoured in their attempts to get things done

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3. Team roles

Plant

Tend to be highly creative and good at solving problems in unconventional ways

Strengths: Creative, imaginative, free-thinking, generates ideas and solves difficult problems.

Allowable weaknesses: Might ignore incidentals, and may be too preoccupied to communicate effectively.

Don't be surprised to find that: They could be unorthodox or forgetful

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3. Team roles

Resource Investigator

They provide inside knowledge on the opposition and made sure that the team's idea will carry to the outside world

Strengths: Outgoing, enthusiastic. Explores opportunities and develops contacts

Allowable weaknesses: Might be over-optimistic, and can lose interest once the initial enthusiasm has passed

Don't be surprised to find that: They might forget to follow up on a lead

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3. Team roles

Monitor-Evaluator

Provides a logical eye, making impartial judgements where required and weighs up the team's options in a dispassionate way

Strengths: Sober, strategic and discerning. Sees all options and judges accurately

Allowable weaknesses: Sometimes lacks the drive and ability to inspire others and can be overly critical

Don't be surprised to find that: They could be overly critical and slow to come to decisions

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3. Team roles

Teamworker

Help the team to gel, using their versatility to identify the work required and complete it on behalf of the team.

Strengths: Co-operative, perceptive and diplomatic. Listens and averts friction

Allowable weaknesses: Can be indecisive in crunch situations and tends to avoid confrontation

Don't be surprised to find that: They might be hesitant to make unpopular decisions

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3. Team roles

Completer-Finisher

Most effectively used at the end of tasks to polish and scrutinise the work for errors, subjecting it to the highest standards of quality control

Strengths: Painstaking, conscientious, anxious. Searches out errors. Polishes and perfects

Allowable weaknesses: Can be inclined to worry unduly, and reluctant to delegate

Don't be surprised to find that: They could be accused of taking their perfectionism to extremes

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3. Team roles

Specialist

Brings in-depth knowledge of a key area to the team

Strengths: Single-minded, self-starting and dedicated. They provide specialist knowledge and skills

Allowable weaknesses: Can only contribute on a narrow front and tends to dwell on the technicalities

Don't be surprised to find that: They may have a tendency to focus only on their subject of choice

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Questions?

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