TECHNOLOGY

Coding Bootcamp

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Agile

Scrum Methodology: Overview, Values, and Roles

Learning Objectives

By the end of this lesson, you will be able to:

- ◉ Identify how scrum methodology can help set up well-defined procedures for managing project tasks and enhancing team collaboration

- ◉ Apply the concepts of sprints to plan, execute, and review a project phase, ensuring adherence to scrum principles

- ◉ Develop detailed strategies for the scrum master, product owner, and developer roles to ensure successful project delivery

- ◉ List the roles of the scrum master, product owner, and developers for ensuring effective project management

Scrum Methodology

Scrum Methodology

The scrum methodology is an Agile framework for managing and completing complex projects. It is based on well-defined procedures and roles that are integral to the product development process.

AGILE

It emphasizes iterative progress, collaboration, and adaptability through defined roles, events, and artifacts.

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Scrum Methodology

It is a flexible strategy grounded in the principles and values of the Agile Manifesto.

These Agile principles' structure scrum practices and rituals, such as sprints, daily stand-ups, sprint planning, reviews, and retrospectives, to create a productive and adaptable work environment.

Scrum Theory

The following are the foundation of scrum:

Empiricism: It asserts that knowledge comes from experience and decision-making is based on observation.

Lean thinking: It complements empiricism by focusing on the elimination of waste and the optimization of resources.

Scrum Pillars

The following are the empirical pillars of scrum:

The process and work must be visible to all involved

Transparency

Inspection

Frequent and diligent inspection of scrum artifacts is essential to detect issues

Adaptation

Immediate adjustments are crucial when requirements deviate from acceptable limits

Scrum Values

A successful use of scrum depends on the adherence of the five values:

Scrum Team

The fundamental unit of scrum is a small team of people, a scrum team. It consists of:

Scrum master

Accountable for establishing scrum

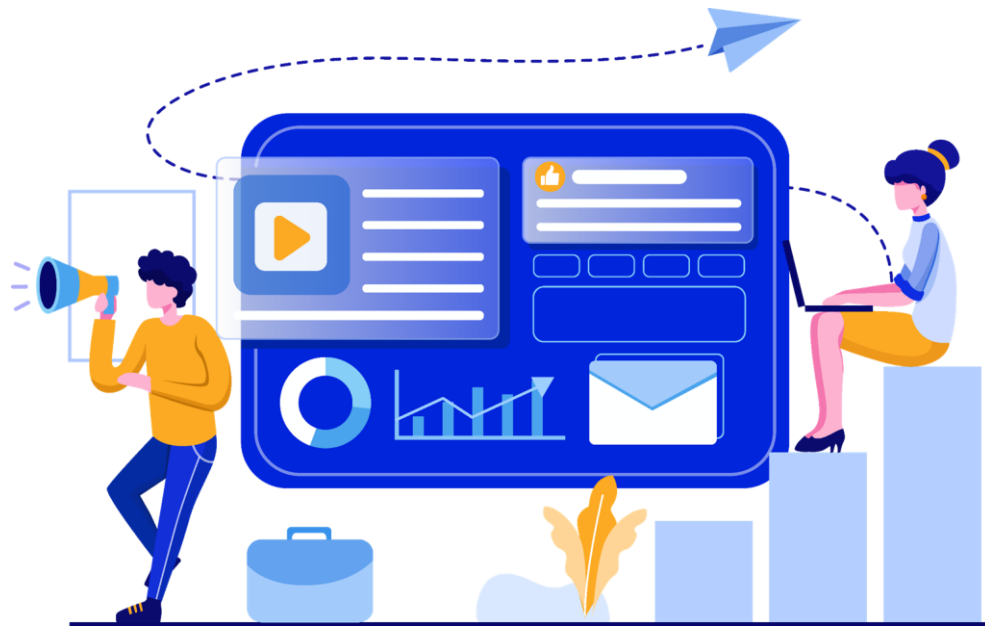**Product owner**

Represent the needs of the product stakeholders

Developers

Accountable for creating product increments

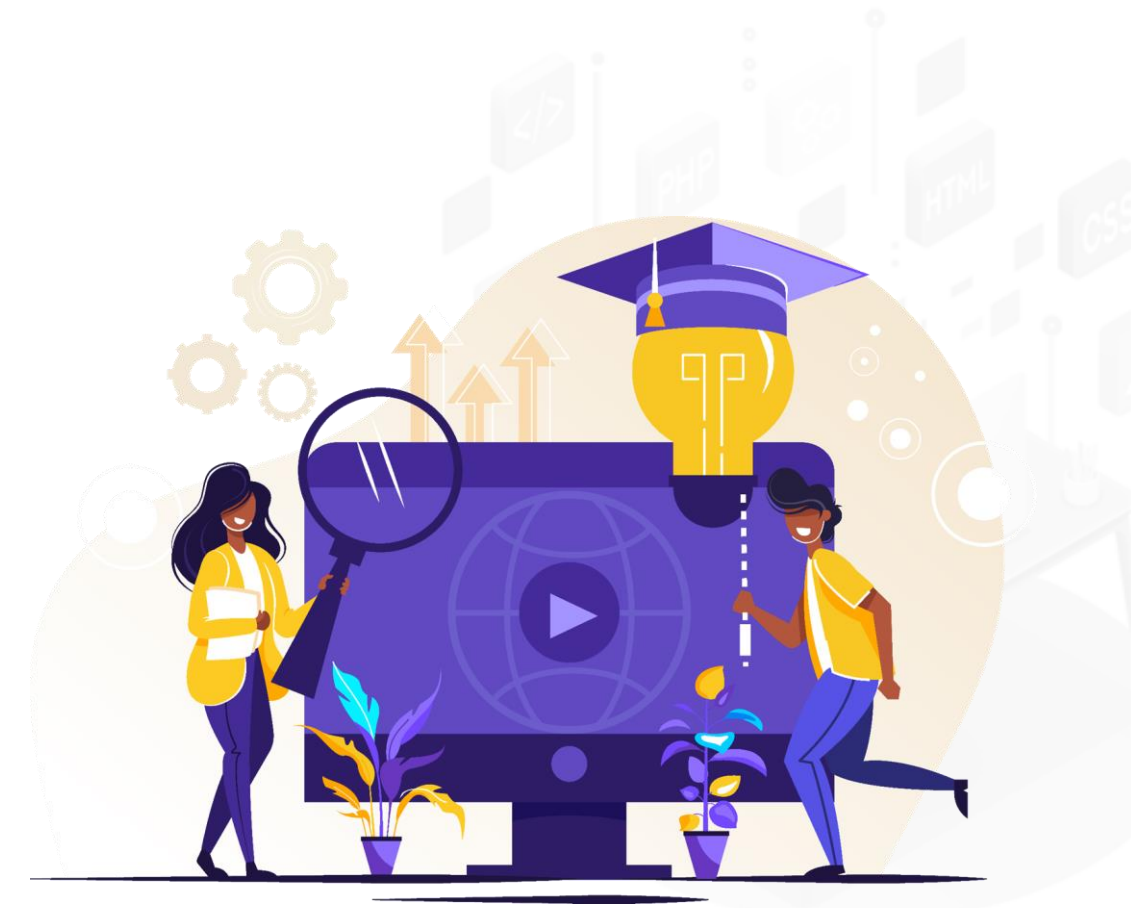# Scrum Implementation

It is not limited to software development and is also utilized in various other sectors, such as:

Sales and marketing   HR   EdTech

Scrum Implementation

Scrum is an effective methodology for implementing and generating quick results. It helps developers perform better in the following ways:
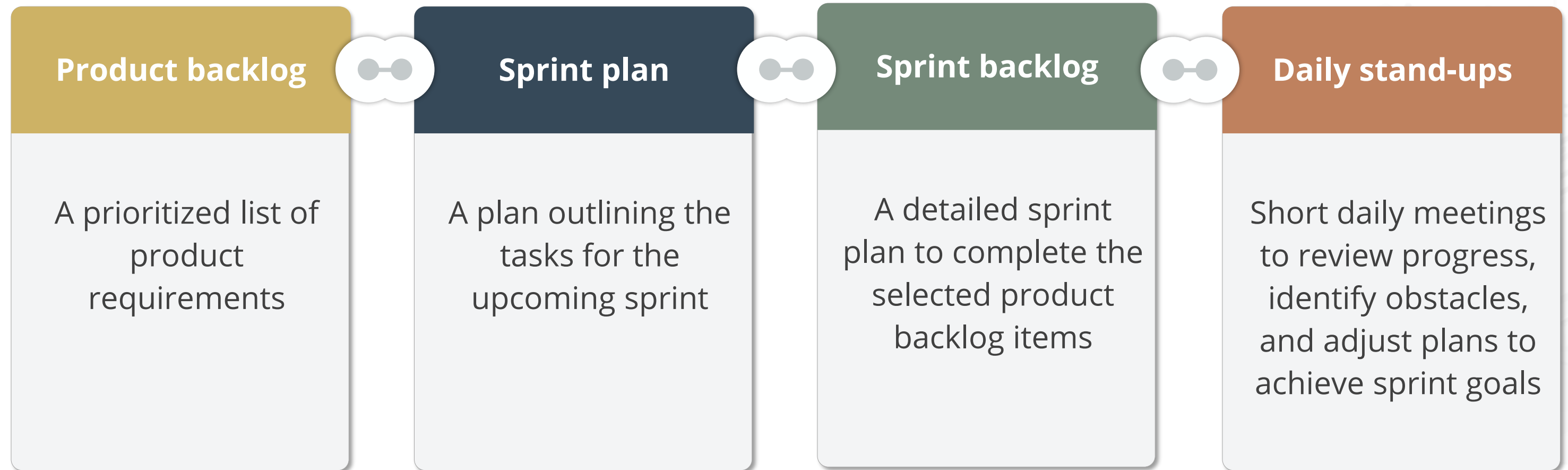
Agility and flexibility

Quality

This enables quick responses to changes, adaptive planning, and continuous testing, ensuring the efficient delivery of high-value products.

Project Planning in Scrum Methodology

In scrum, a project plan refers to the strategic roadmap that guides the development and delivery of a product through iterative cycles called sprints. The key elements of a scrum project plan include:

Product backlog	**Sprint plan**	**Sprint backlog**	**Daily stand-ups**
A prioritized list of product requirements	A plan outlining the tasks for the upcoming sprint	A detailed sprint plan to complete the selected product backlog items	Short daily meetings to review progress, identify obstacles, and adjust plans to achieve sprint goals

Project Planning in Scrum Methodology

In scrum, a project plan refers to the strategic roadmap that guides the development and delivery of a product through iterative cycles called sprints. The key elements of a scrum project plan include:

Sprint review	Sprint retrospective	Release planning
The completed tasks in a sprint are shared with the stakeholders for feedback	A reflective meeting where the team discusses successes, challenges, and improvements for the next sprint	High-level planning of multiple sprints to achieve broader goals and deliver significant product increments

Project Planning in Scrum Methodology

Project planning in scrum aims to efficiently deliver high-quality products through iterative cycles, ensuring continuous improvement, adaptability, and stakeholder alignment.

The objectives of a project plan help determine:

Higher quality

Quick delivery

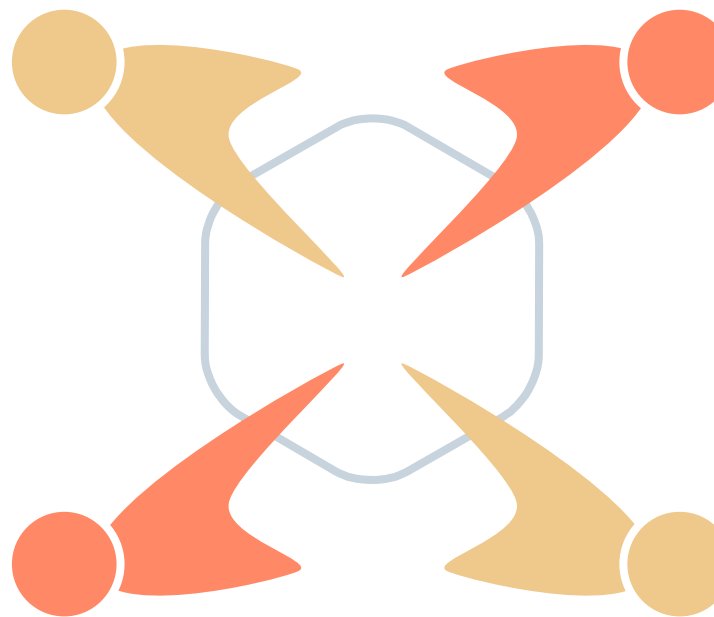Lower costs

The Concept of Sprints

Sprints

Sprints are the core iterative cycles in a scrum, designed to deliver incremental product improvements.

Characteristics of a sprint

The duration of a sprint is usually one to four weeks.

In a sprint, a scrum team works to complete a set of predefined tasks from the product backlog.

Each sprint produces a potentially shippable product increment.

The sprint review meeting showcases the completed work to the stakeholders.

Sprints

A sprint is a one-time, boxed iteration of a continuous development cycle that includes:

Sprint planning

Daily stand-ups

Sprint execution

Sprint review

Retrospective

Roles of a Scrum Master

What Is Meant by a Scrum Master?

A scrum master plays a key role in the scrum framework and is responsible for ensuring that the scrum process is followed, facilitating team collaboration, and removing obstacles that impede the team's progress.

Scrum master → Project stakeholders

They facilitate effective communication between the scrum team and stakeholders to align goals, receive feedback, and deliver a valuable product.

Roles of a Scrum Master

A scrum master ensures that the team members are perfectly trained and understand Agile software management.

They promote an Agile culture of collaboration, continuous improvement, and adherence to best practices, ensuring the team understands and effectively applies Agile principles.

Roles of a Scrum Master

The scrum master helps the team members understand and use the scrum methodology effectively to improve:

Efficiency

Productivity

Roles of a Scrum Master

The scrum master engages in:

Teaching the scrum process

Keeping the team morale high

Bringing in a new mindset

Roles of a Scrum Master

A scrum master conducts meetings, popularly known as daily scrum or stand-up meetings.

In this meeting, the following questions are asked to the team:

What did they do yesterday?

What do they plan to do today?
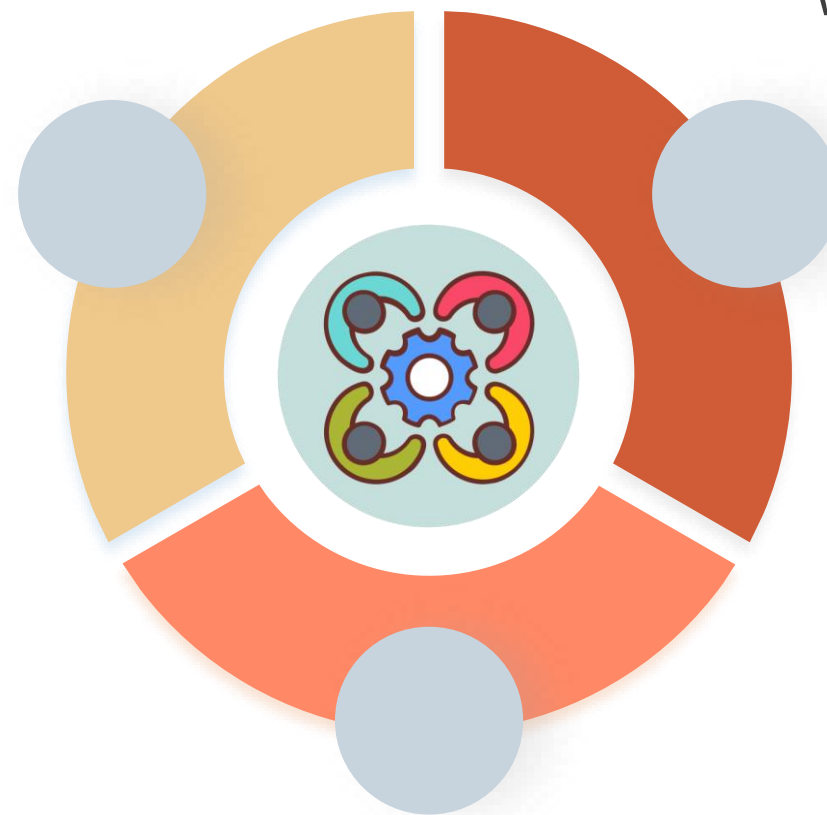
What is impeding their progress?

Roles of a Scrum Master

Team members are asked for an estimate of how much time they need to complete tasks.
A scrum master:

Tracks team progress
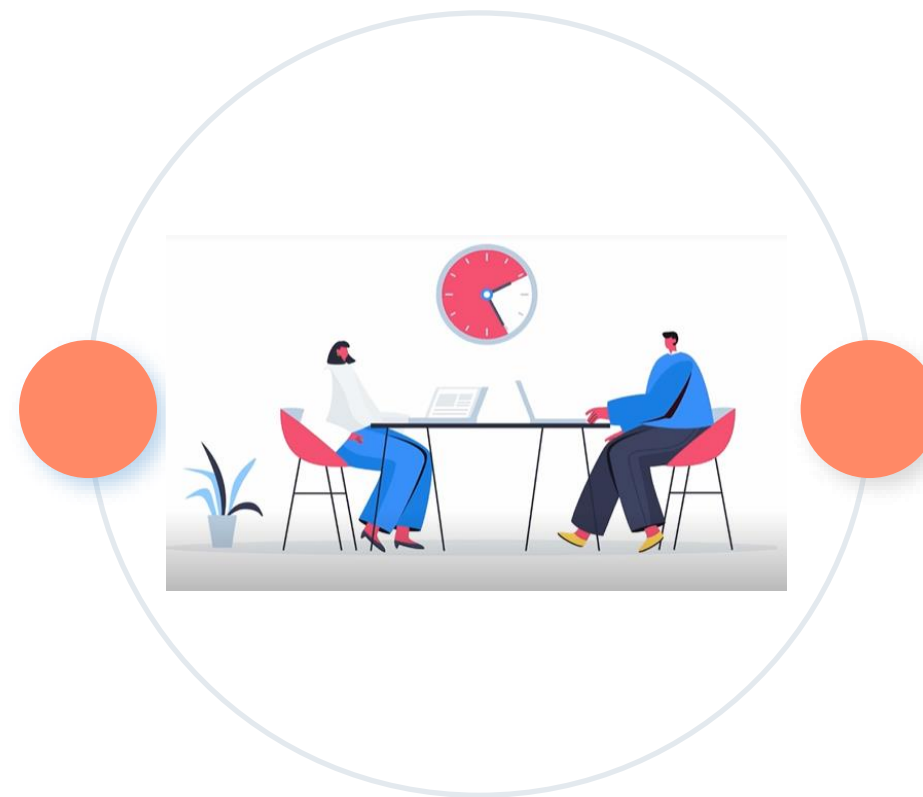
Observes any obstacles

By tracking progress and observing obstacles, the scrum master helps the team stay on track and efficiently reach their objectives.

Roles of a Scrum Master

The scrum master helps the product owner prioritize the product backlog.

Maintaining the product backlog

Operating the product backlog
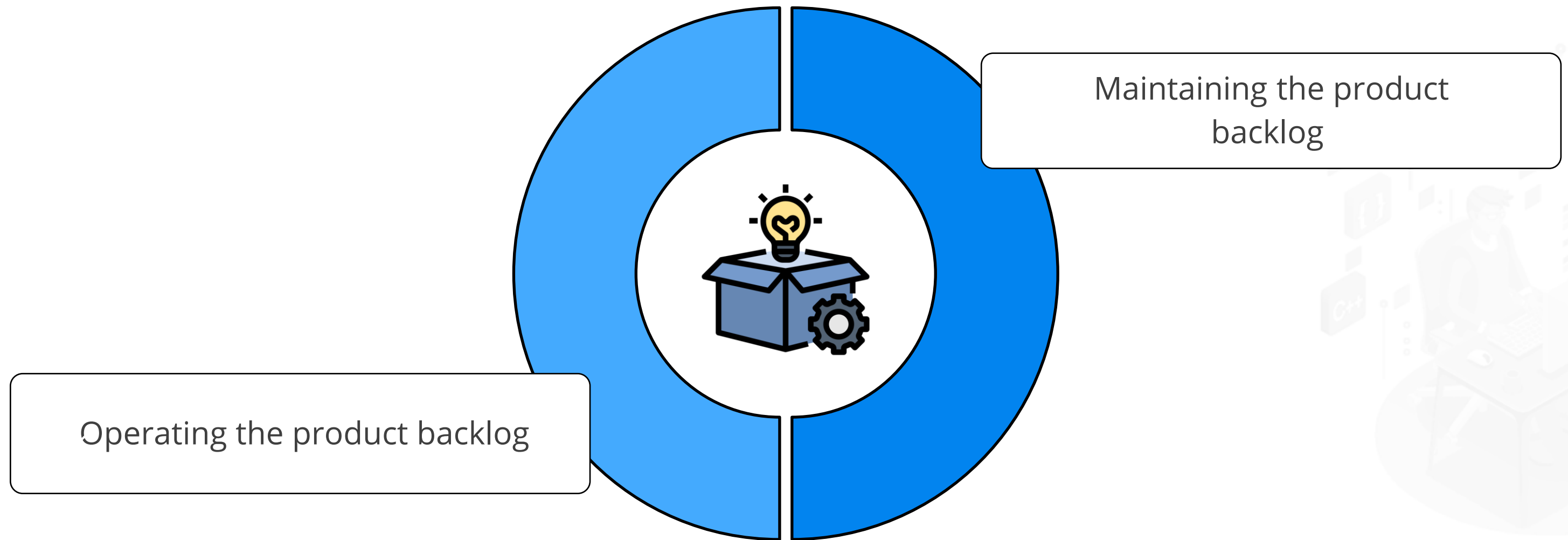
By supporting the product owner in these areas, the scrum master ensures the product backlog is effectively managed, leading to better planning, execution, and project delivery.

Roles of a Scrum Master

The scrum master works with the product owner to maintain the backlog using information from daily meetings. This helps monitor:

Current status and development needs

Status of user stories

Roles of a Scrum Master

A scrum master eliminates roadblocks in a project.

They ensures that the team can work efficiently and maintain momentum towards achieving their project goals.

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Roles of a Scrum Master

The scrum master can communicate with other meeting organizers to determine if they are needed for the meeting.

Works closely with the product stakeholders

Redistributes tasks
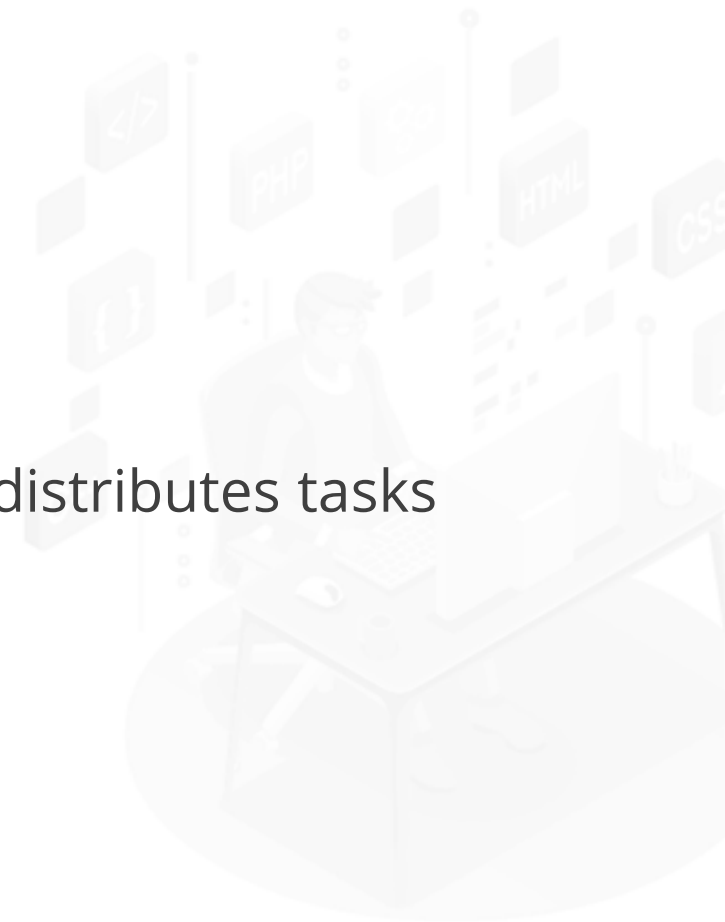
Roles of a Scrum Master

A scrum master is also a mentor to new employees and team members.
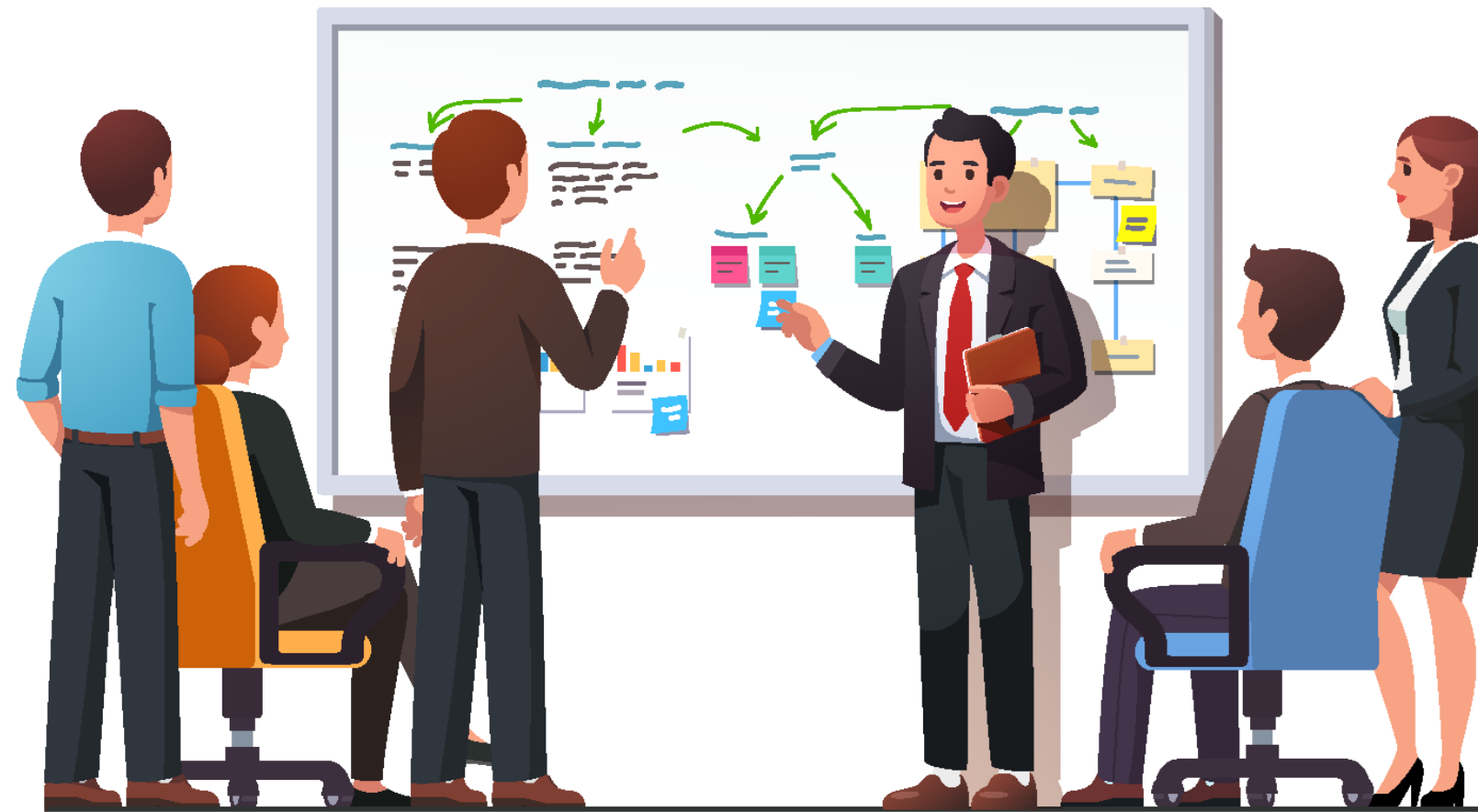
By serving as a mentor, the scrum master ensures that new employees and team members are well-equipped to contribute effectively, promoting a cohesive and productive team environment.

Roles of a Scrum Master

The scrum master invests time in mentoring the new team members and helping them understand:

The importance of team members being in sync with scrum practices

The product vision
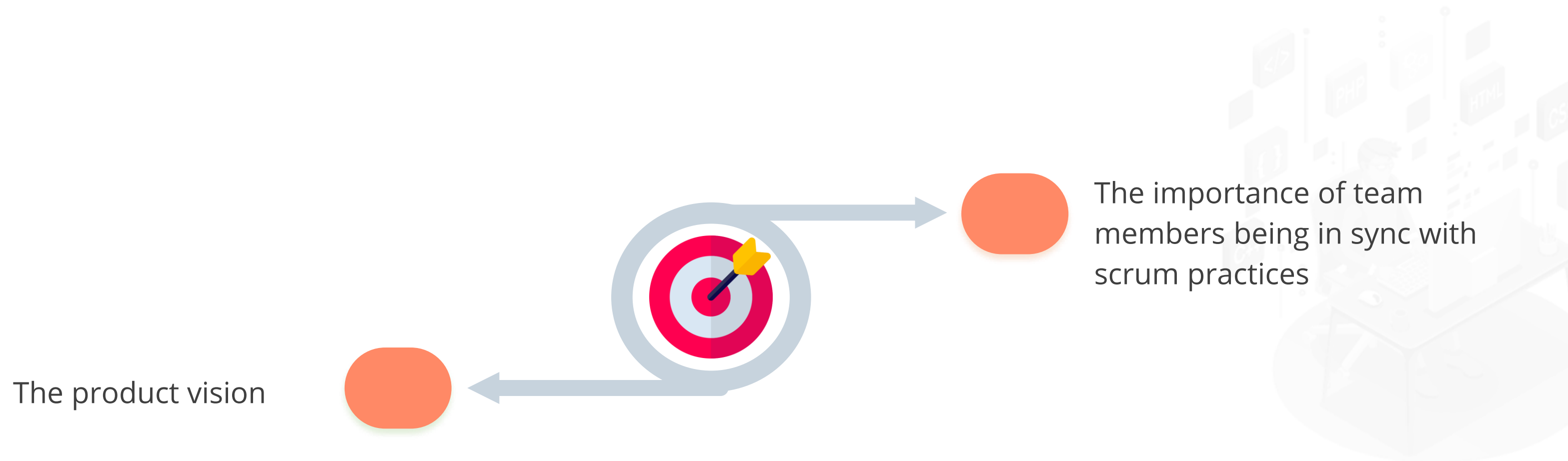
Roles of a Scrum Master

The management and the product owner frequently attempt to add unplanned stories that impact the team's progress.

By effectively managing unplanned stories and tasks, the scrum master ensures that the team remains productive and can deliver high-quality work within the sprint's timeframe.

Roles of a Scrum Master

The scrum master's responsibility is to keep the scrum team from getting caught up in a misguided sense of urgency.

They maintain team focus and balance for a productive working environment, enabling the team to consistently deliver high-quality results.

Roles of a Scrum Master

The key responsibilities of a scrum master include:

Ensuring that the product owner and developer work efficiently and effectively

To implement the scrum framework in the team and organization

Helping the team practice scrum principles and ideals

Acting as a change agent to help the team adopt existing processes to increase productivity

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Roles of a Scrum Master

The key responsibilities of a scrum master include:

Protecting the scrum team from outside interferences while they work on their committed deliverables

Removing roadblocks that prevent work from continuing

Moderating scrum rituals

Serving as a leader

Roles of a Product Owner

Roles of a Product Owner

The product owner examines market information to plan and present the product vision to partners and clients.

The product owner collaborates with the developers to help meet the deliverables.

Roles of a Product Owner

The product owner is the point of contact for the software developers.. Their roles include:

Defining the product vision
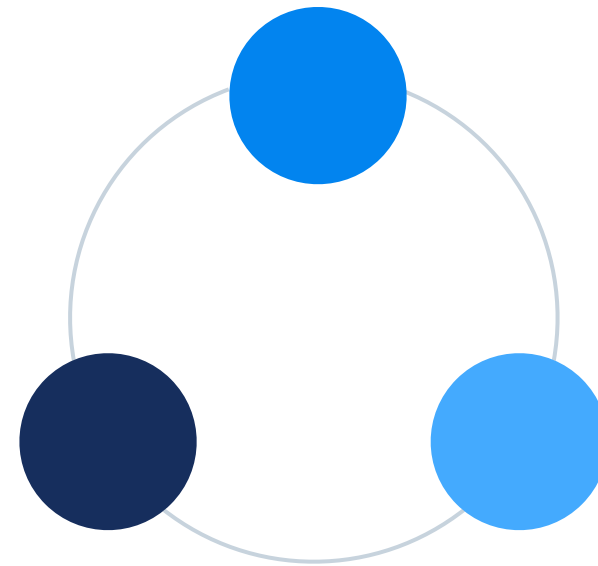
Overseeing communication with stakeholders across teams

Sharing experience to create value and develop projects
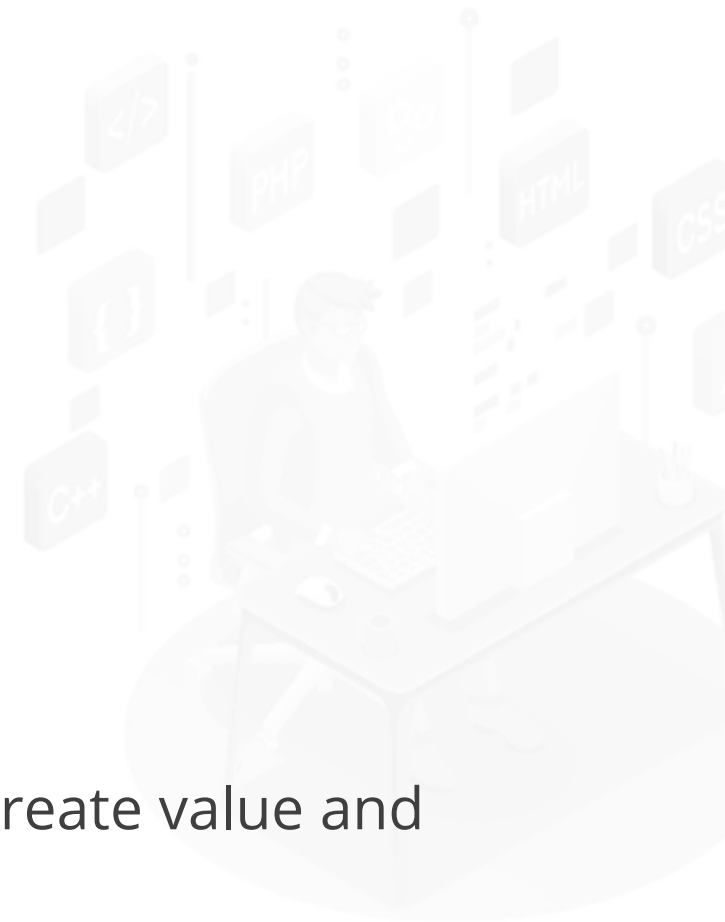
Roles of a Product Owner

A product owner helps the team maintain a strong vision for the:

Process

Products

This emphasizes the dual focus of the product owner on both the methodologies used in development and the end products delivered.

Roles of a Product Owner

All stakeholders should inevitably be on the same page to work effectively.

A product owner:

Actively manages the product backlog

Prioritizes tasks for the team

Creates a list of backlog items

Adds the tasks to the to-do list

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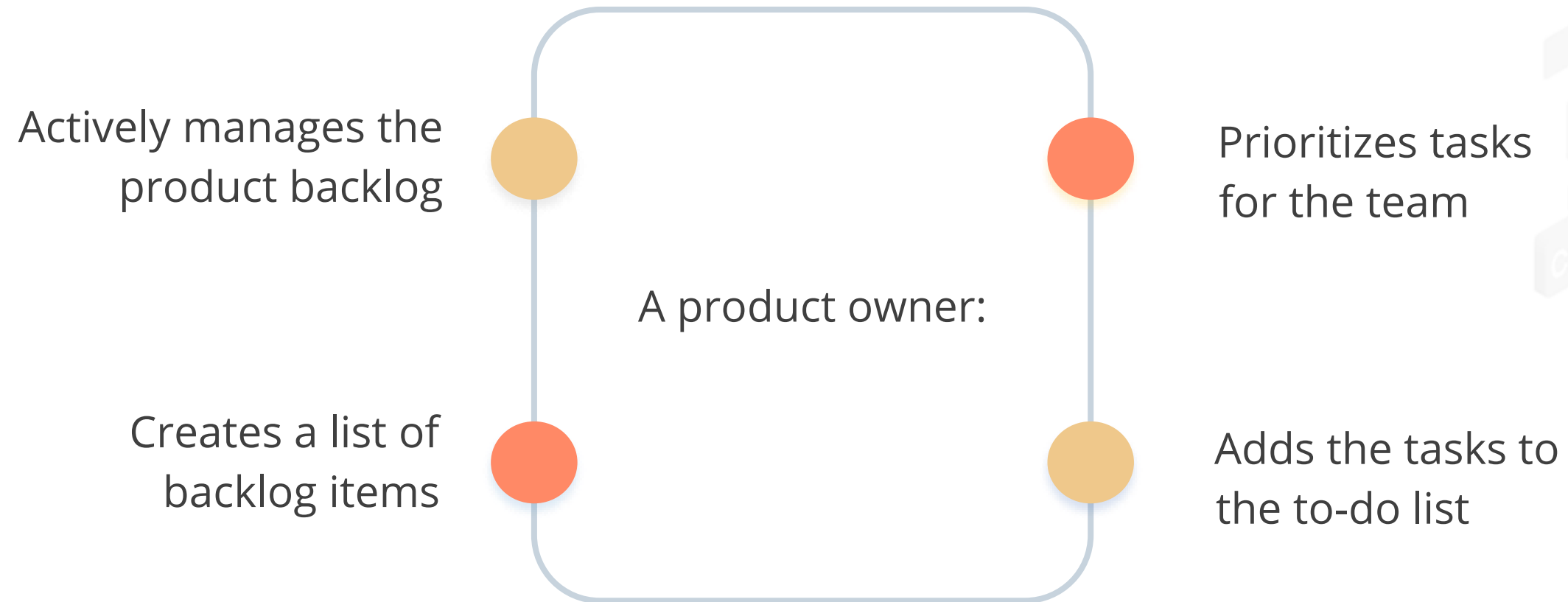
Roles of a Product Owner

Product owners need to set priorities based on stakeholder requirements, project objectives, and the overall project.

Scope

Time

Budget
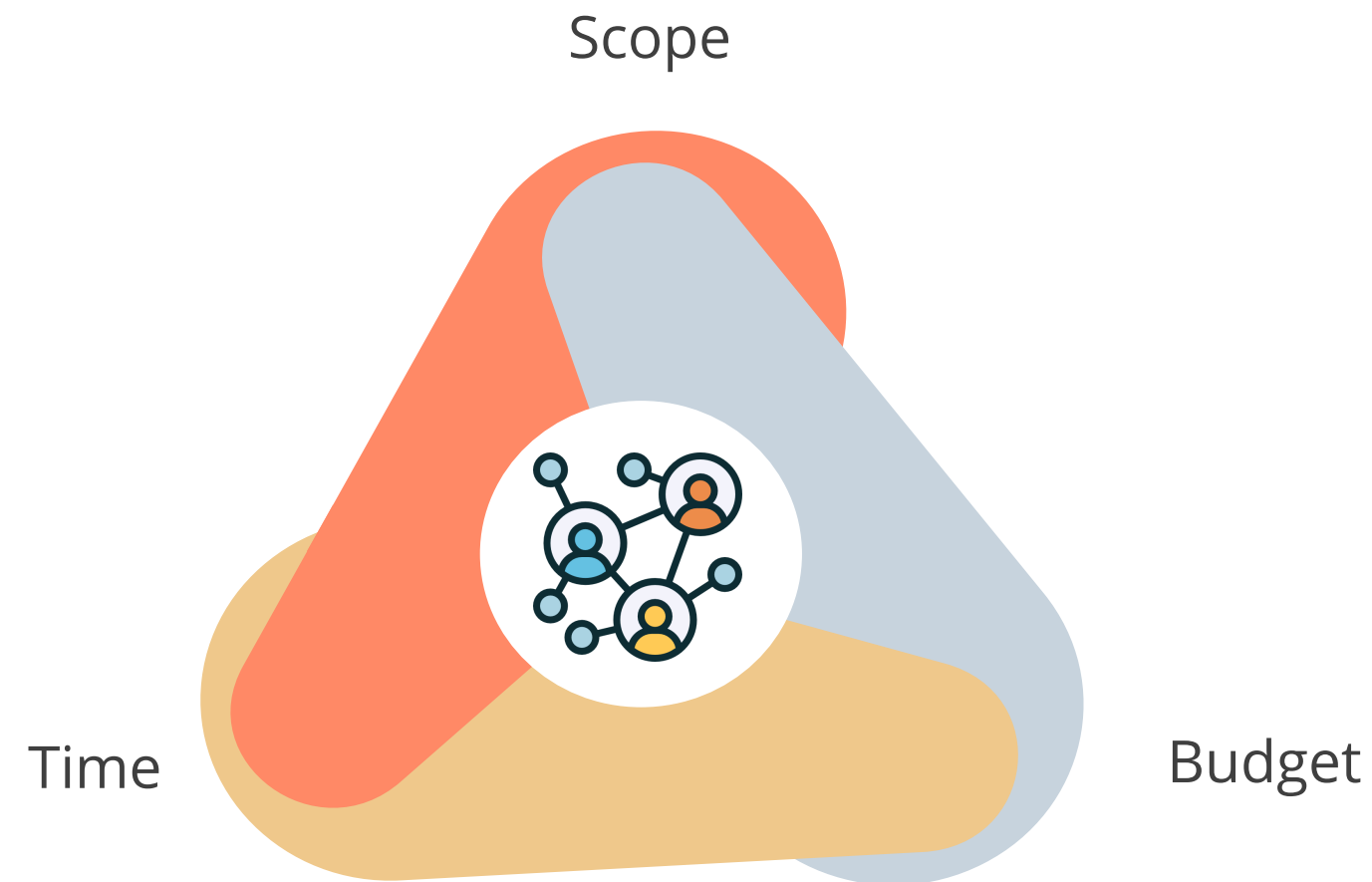
By effectively managing these elements, the product owner ensures the project remains on track and meets its objectives.

Roles of a Product Owner

Product owners have to gauge the flexible areas of work and determine:
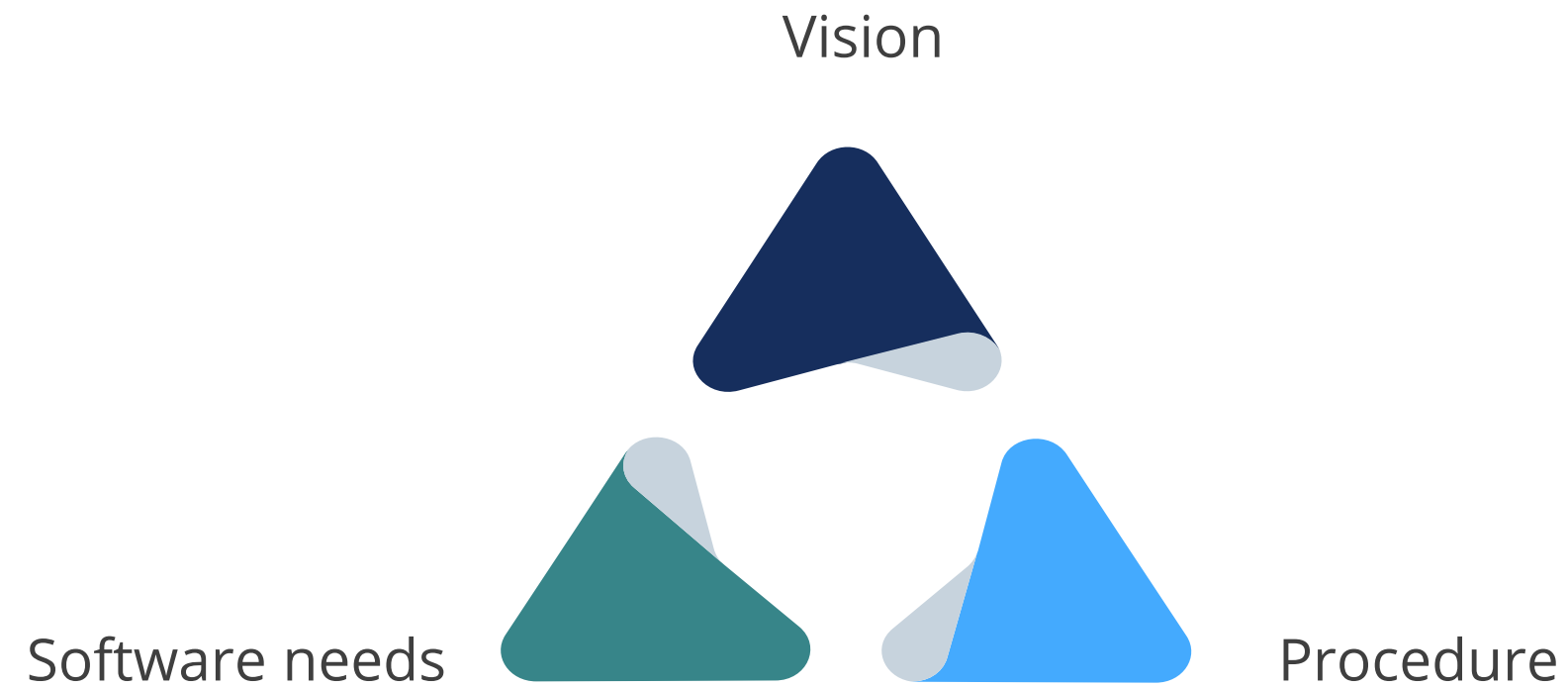
Development cycle management
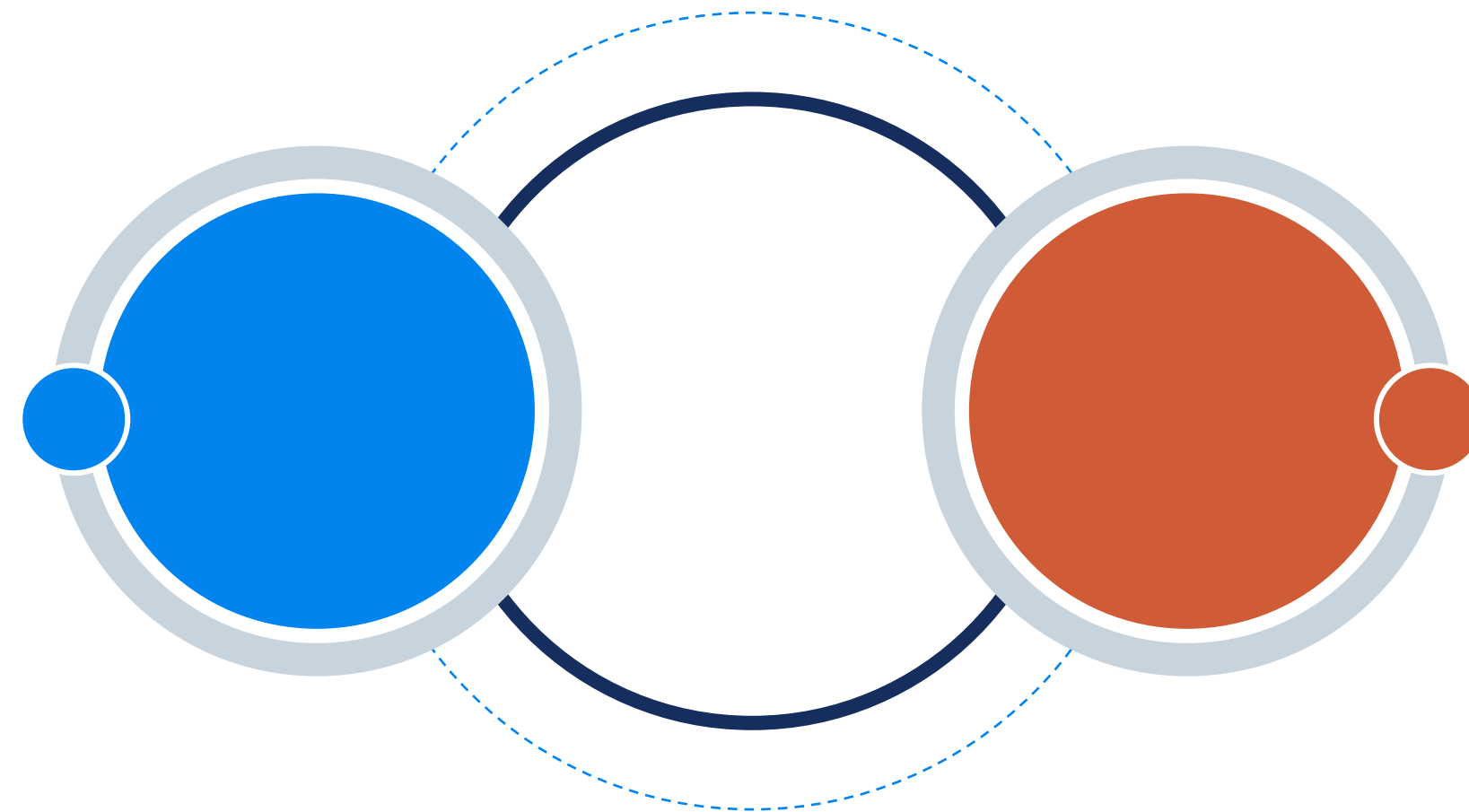
Feature prioritization

Roles of a Product Owner

Throughout the development stages, a product owner oversees:

Vision

Software needs

Procedure

These aspects are central to all stages, including planning, refining, and reviewing.

Roles of a Product Owner

During the planning stages, the product owner works with stakeholders to identify and coordinate the necessary steps for the upcoming development cycle:
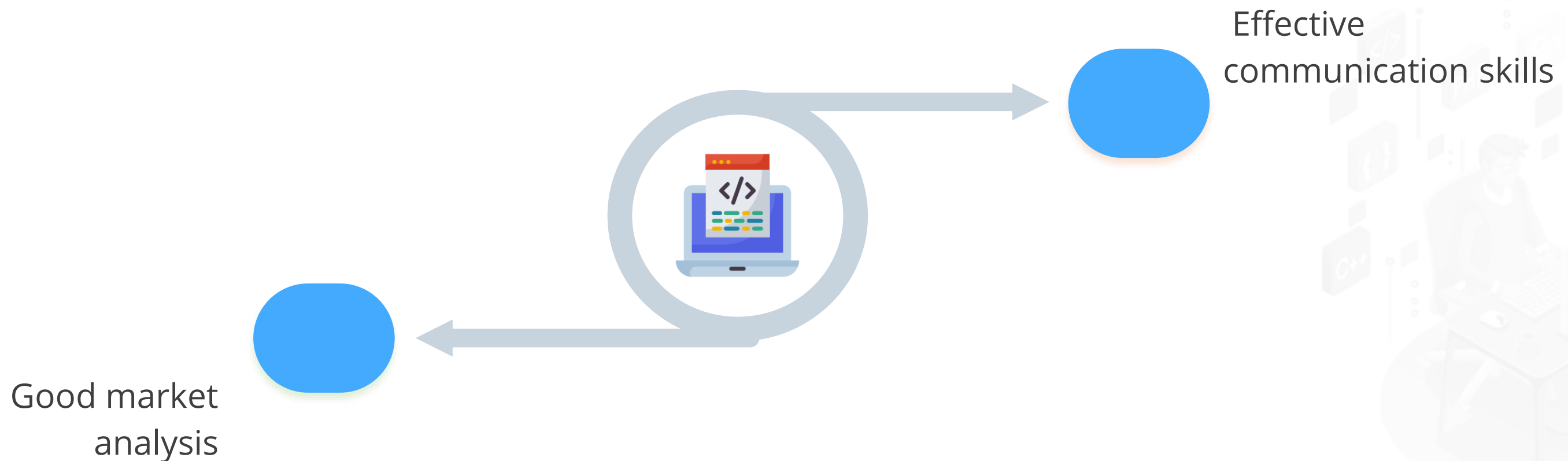
Meet with the team to refine the cycle

Identify areas for development

Create the backlog

Roles of a Product Owner

The product owner is an expert in understanding the client's needs and managing the development process effectively.
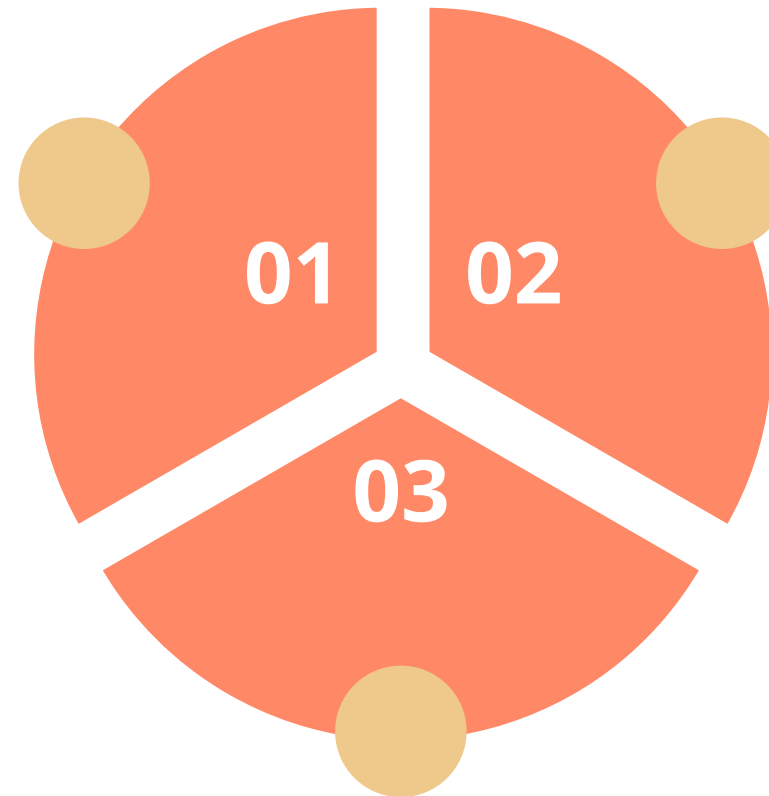
Effective communication skills

Good market analysis

By leveraging these skills, the product owner drives the development process forward, ensuring the product meets client expectations and market requirements.
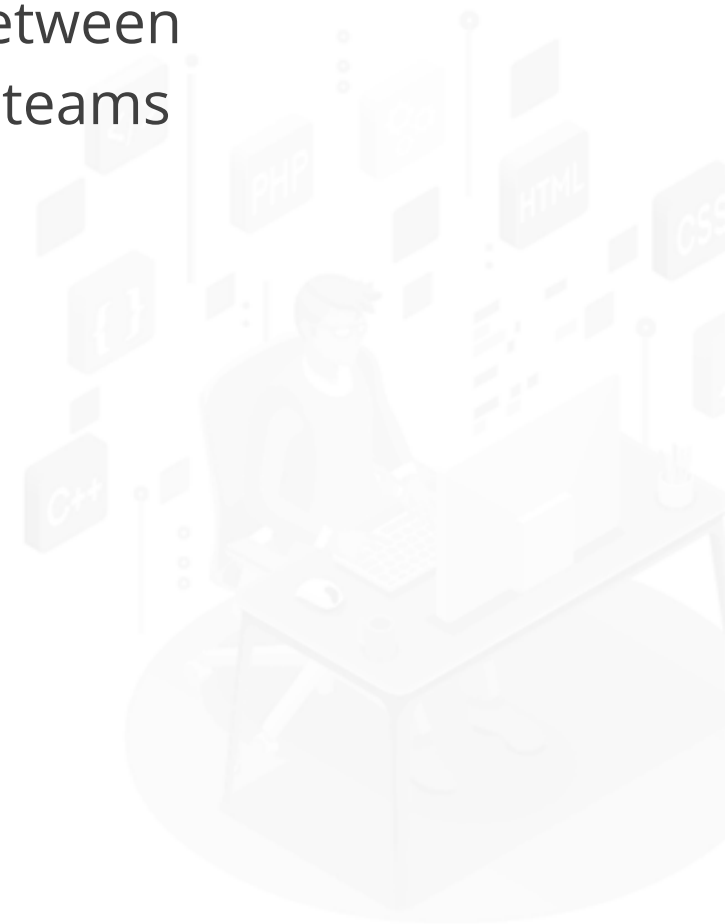
Roles of a Product Owner

The product owner:

Acts as the primary liaison

Bridges the gap between stakeholders and teams

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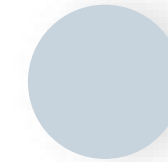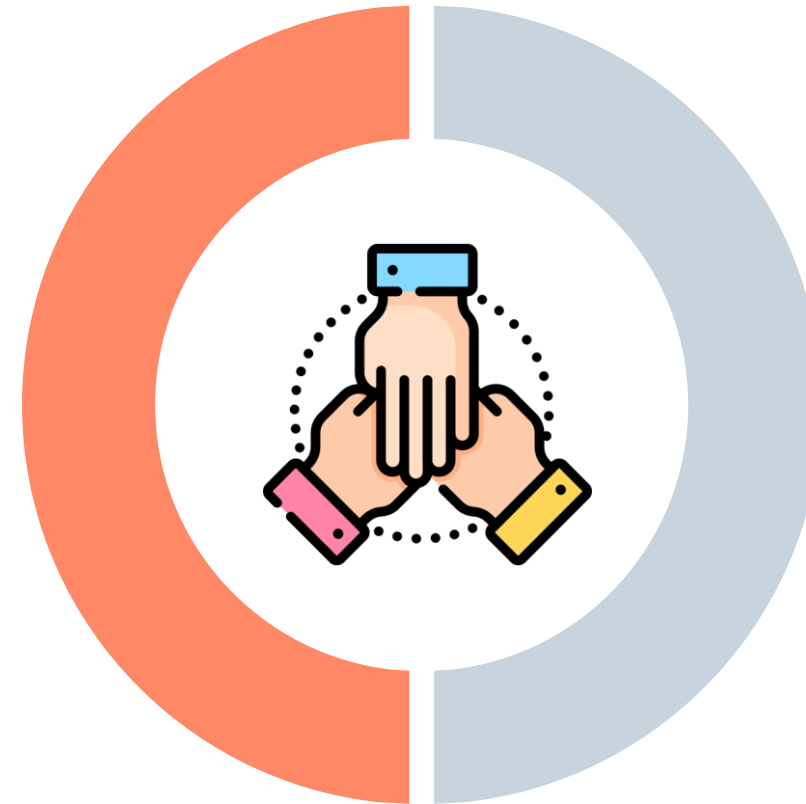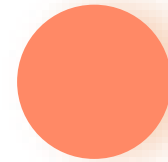Evaluates the product's progress at each iteration

They are responsible for every step of the development process and the final product release.

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Roles of a Product Owner

The product owner informs the team whether to rework or move to the next stage of development. They are responsible for:
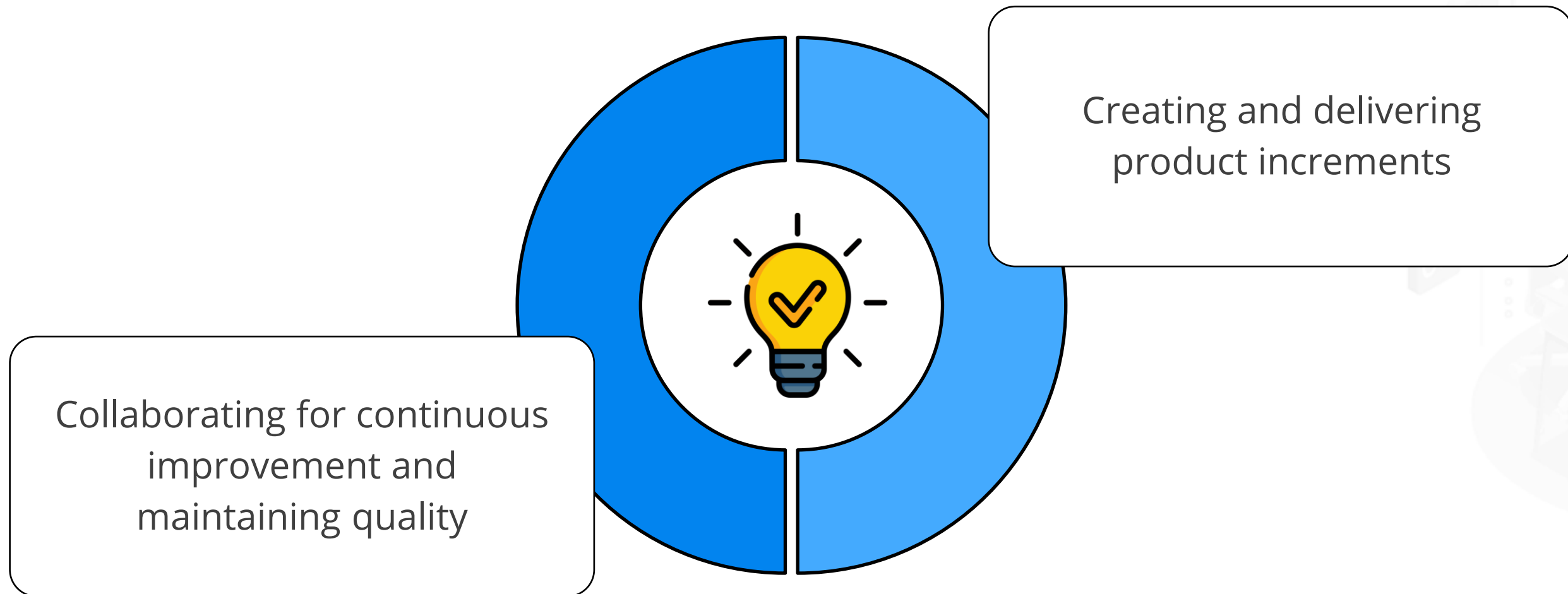
Analyzing the quality of the product

Measuring the progress of the product

Role of a Developers

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Role of Developers

The developers in a scrum are crucial for turning the product vision into reality through iterative development. Their primary responsibilities include:

Creating and delivering product increments

Collaborating for continuous improvement and maintaining quality

Role of Developers

The developers are responsible for executing a sprint. Their key responsibilities include:
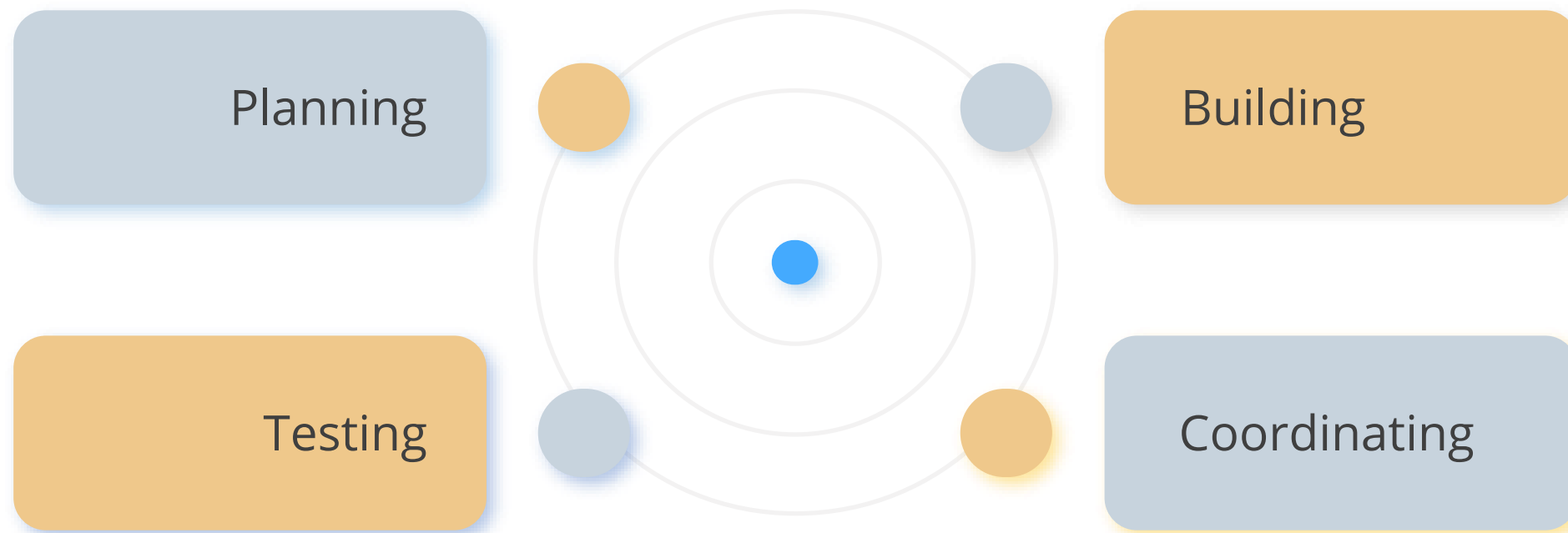
Managing time

Focusing on delivery

Role of Developers

After the sprint planning meeting, the team receives a sprint backlog and an objective that they are expected to execute. They are involved in:

Planning

Building

Testing

Coordinating

The developer shoulders the responsibilities and suggests how to deal with the task.

Role of Developers

The developers actively participate in daily scrum meetings and discuss the progress toward achieving the objective. These meetings focus on:
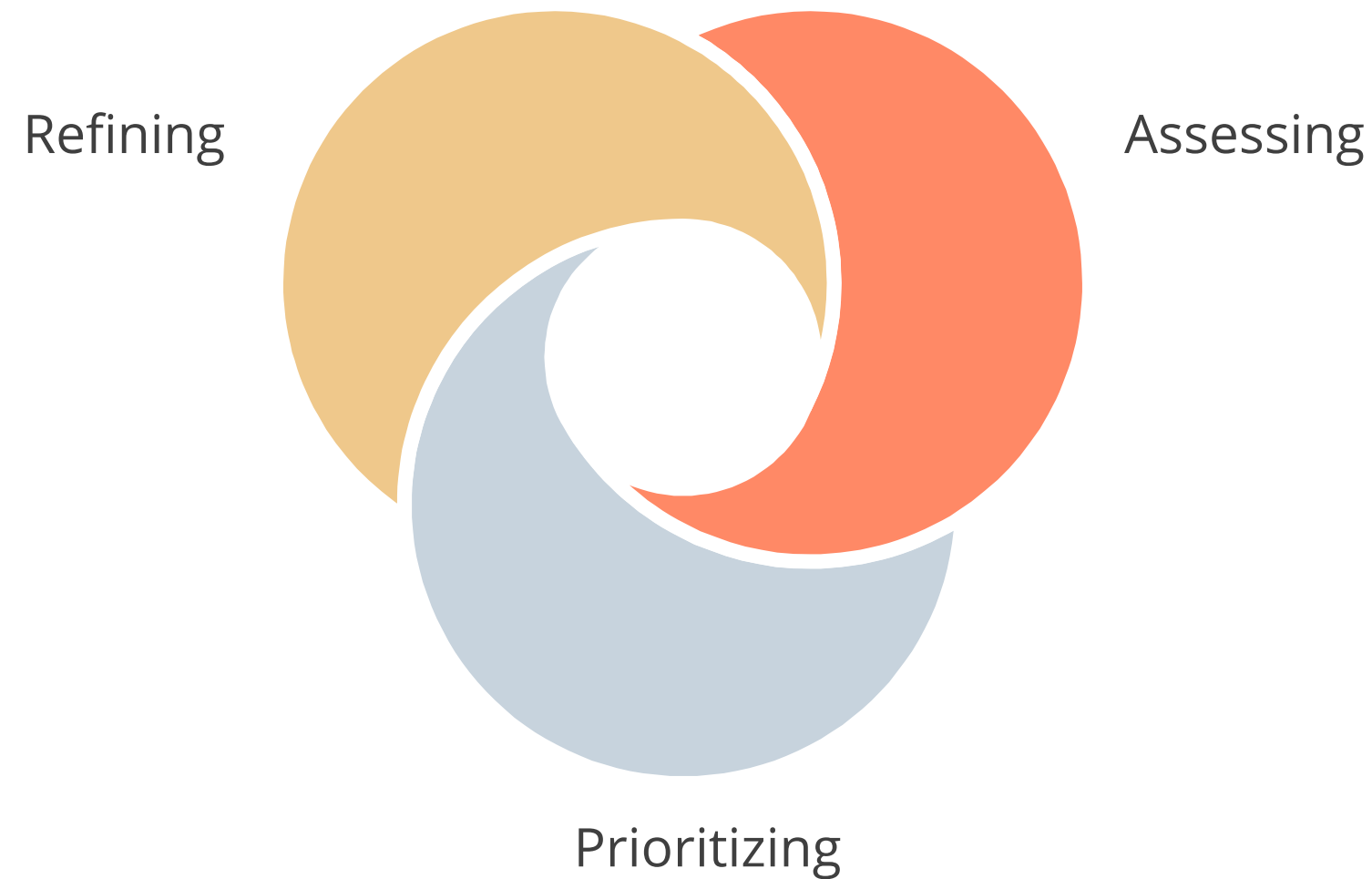
Agility

Capacity

This allows them to guarantee that there will be no surprises at the end of the sprint.

Role of Developers

The developers are also responsible for grooming the product backlog.

Refining

Assessing

Prioritizing

By engaging in these activities, the team helps to maintain a well-organized and actionable product backlog, facilitating smoother and more effective sprints.

Role of Developers

The team shares responsibility for planning the sprint with the scrum master.

This collaborative approach enhances team performance and ensures the project aligns with stakeholder expectations and strategic goals.

Role of Developers

The developer is part of all sprint planning meetings alongside the product owner and scrum master to discuss:

Progress

Concerns

Role of Developers

The developers also helps the product owner formulate the objective or goal of the sprint.
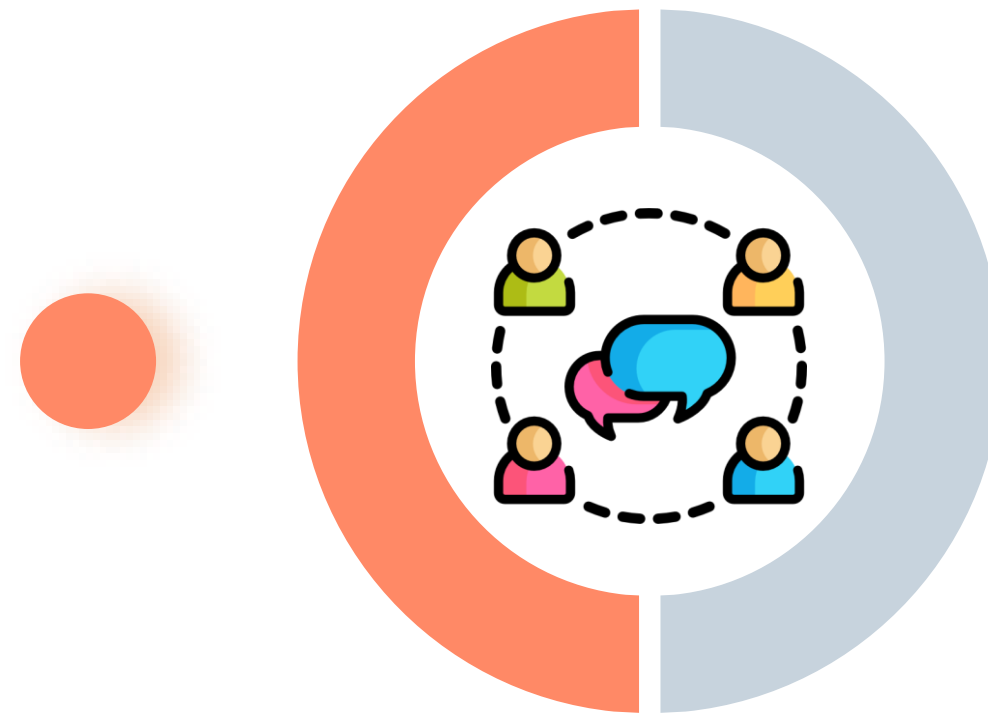

By helping formulate the sprint objectives, the developer enhances project alignment, ensuring that each sprint delivers valuable outcomes that meet stakeholder expectations.

Role of Developers

They communicate their needs to the scrum master and product owner. In the sprint planning meeting, everyone discusses:

Number of stories

Story points

The process generally concludes by assigning stories focused on each level of development.

Role of Developers

The developers should also inspect and adapt to products and processes at the end of the milestone.

Inspect

Sprint review

Adapt

Sprint retrospective

By regularly inspecting and adapting through sprint reviews and retrospectives, the developer ensures continuous improvement and alignment with project goals.

Defining the Role of a Scrum Master

Problem Statement:

You are working as an Agile scrum master and have been asked to explain the role of a scrum master with an example.

Outcome:

By completing this task, you will be able to successfully form a cohesive group with a designated Scrum Master who will communicate the project details and outline the next steps.

> **Note**: Refer to the demo document for detailed steps:
> 01_Role_of_Scrum_Master

ASSISTED PRACTICE

Assisted Practice: Guidelines

Steps to be followed:

1. Create a group of five members and assign one person from the group as the Scrum master

2. Perform the activity based on the scenario; the scrum master must explain the project and the next steps to the team

Key Takeaways

◉ Scrum is executed in blocks that are short and periodic.

◉ The scrum master helps eliminate any obstructions to the plan and schedule of the team.

◉ The product owner leads the team in numerous phases of software development.

◉ The developers are part of all sprint planning meetings alongside the product owner and scrum master.

Thank You