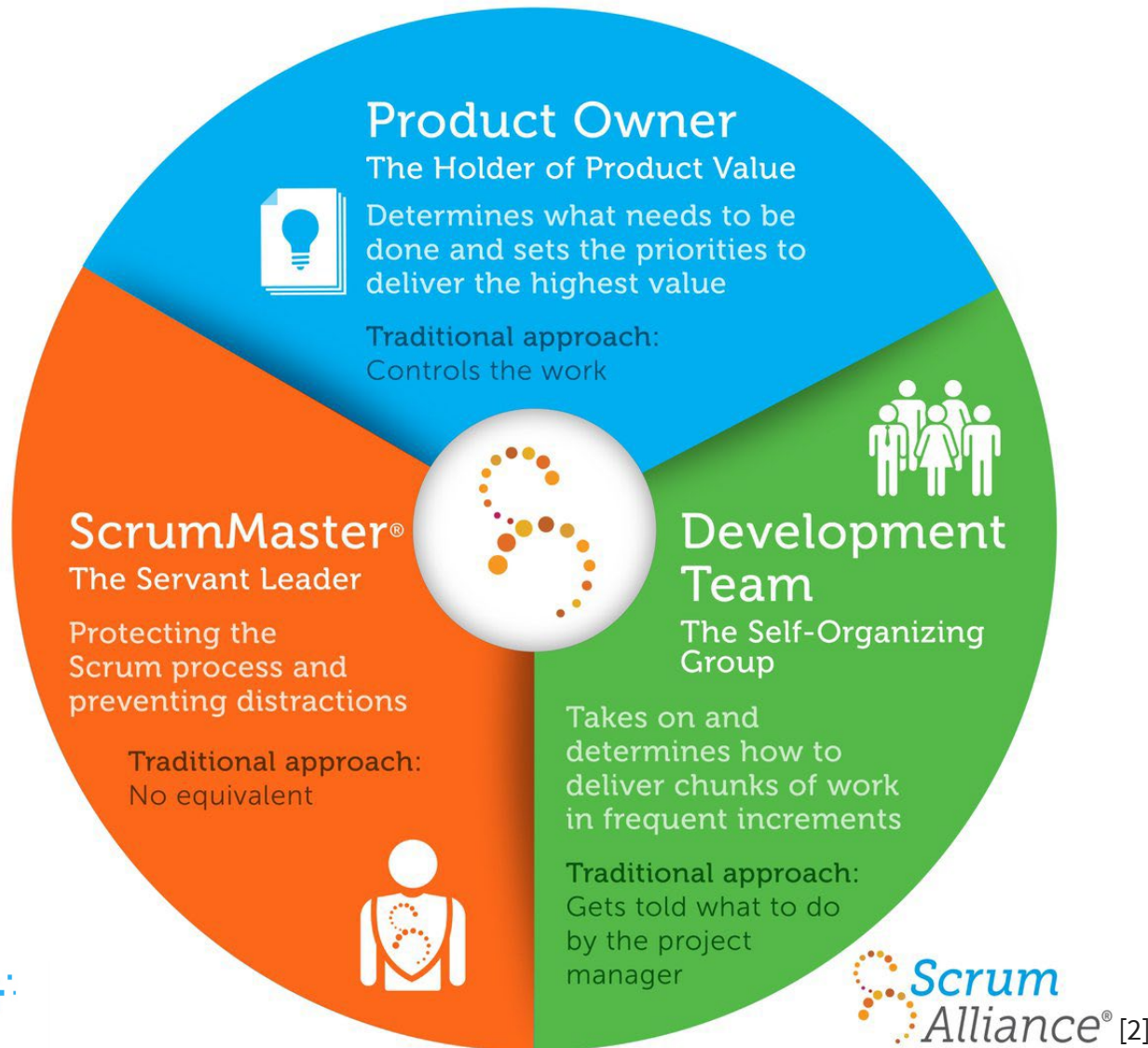# SCRUM
AGILE
VS. WATERFALL METHOD

A path to enhance cohesive products and build a more corporate culture at ChadaTech

Scrum Roles: A different way of thinking, a better way to drive success

Scrum roles differ from traditional project roles.
By collaborating, a Scrum team delivers more business value, faster.

Product Owner
The Holder of Product Value
Determines what needs to be done and sets the priorities to deliver the highest value
Traditional approach: Controls the work

ScrumMaster®
The Servant Leader
Protecting the Scrum process and preventing distractions
Traditional approach: No equivalent

Development Team
The Self-Organizing Group
Takes on and determines how to deliver chunks of work in frequent increments
Traditional approach: Gets told what to do by the project manager

Scrum Alliance® [2]

Scrum Master

- Facilitate daily Scrum meetings (also called "daily standups")
- Lead sprint planning meetings
- Conduct "retrospective" reviews to see what went well and what can be improved for the following sprint
- Keep a pulse on team members, through individual meetings or other means of communication.
- Manage obstacles that arise for the team by communicating with stakeholders outside of the team

Product Owner

- Manage the product backlog by ordering work by priority
- Set the product vision for the team
- Communicate with external stakeholders and translate their needs to the team
- Make sure the team is focused on hitting product needs through communication and evaluating progress
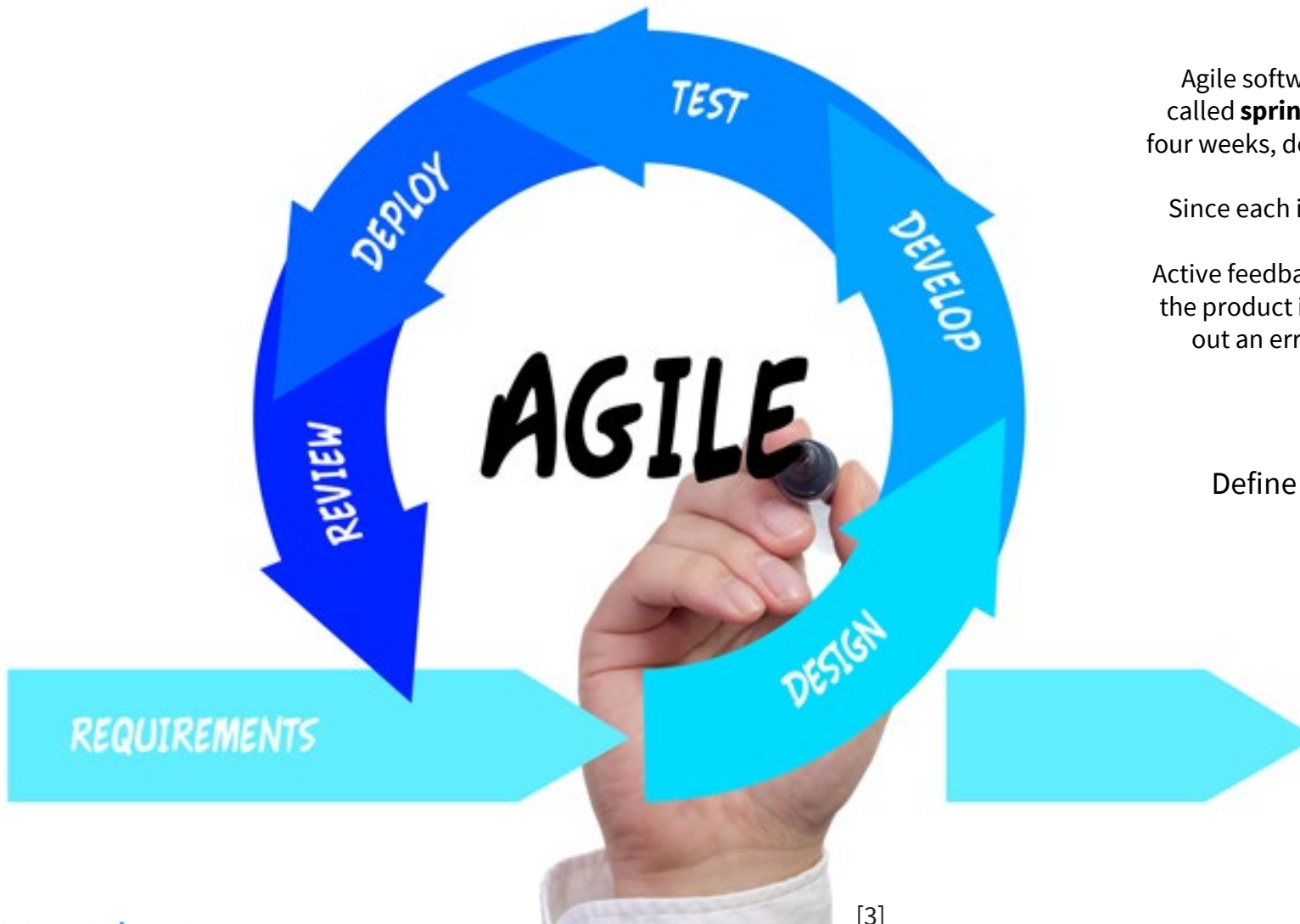
Development team

- Help in sprint planning and goal setting
- Lend expertise to program, design, or improve products
- Use data to find best practices for development
- Test products and prototypes, plus other forms of quality assurance

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[1]

Agile Software Development Life Cycle

Agile software development life cycle is composed of work iterations (also called **sprint in scrum**). Every work iteration or sprint lasts for about two to four weeks, depending on the set time duration by the business stakeholders and the development team.

Since each iteration or sprint has a set time limit, the set scopes and design requirements need to be realistic.

Active feedback from users, customers, and business owners that are testing the product is also essential. This will help improve work quality by pointing out an error that needs to change or an area that needs improvement. [3]

REQUIREMENTS
Define clear objectives, useful features and support limitation

DESIGN
Layout project groundwork

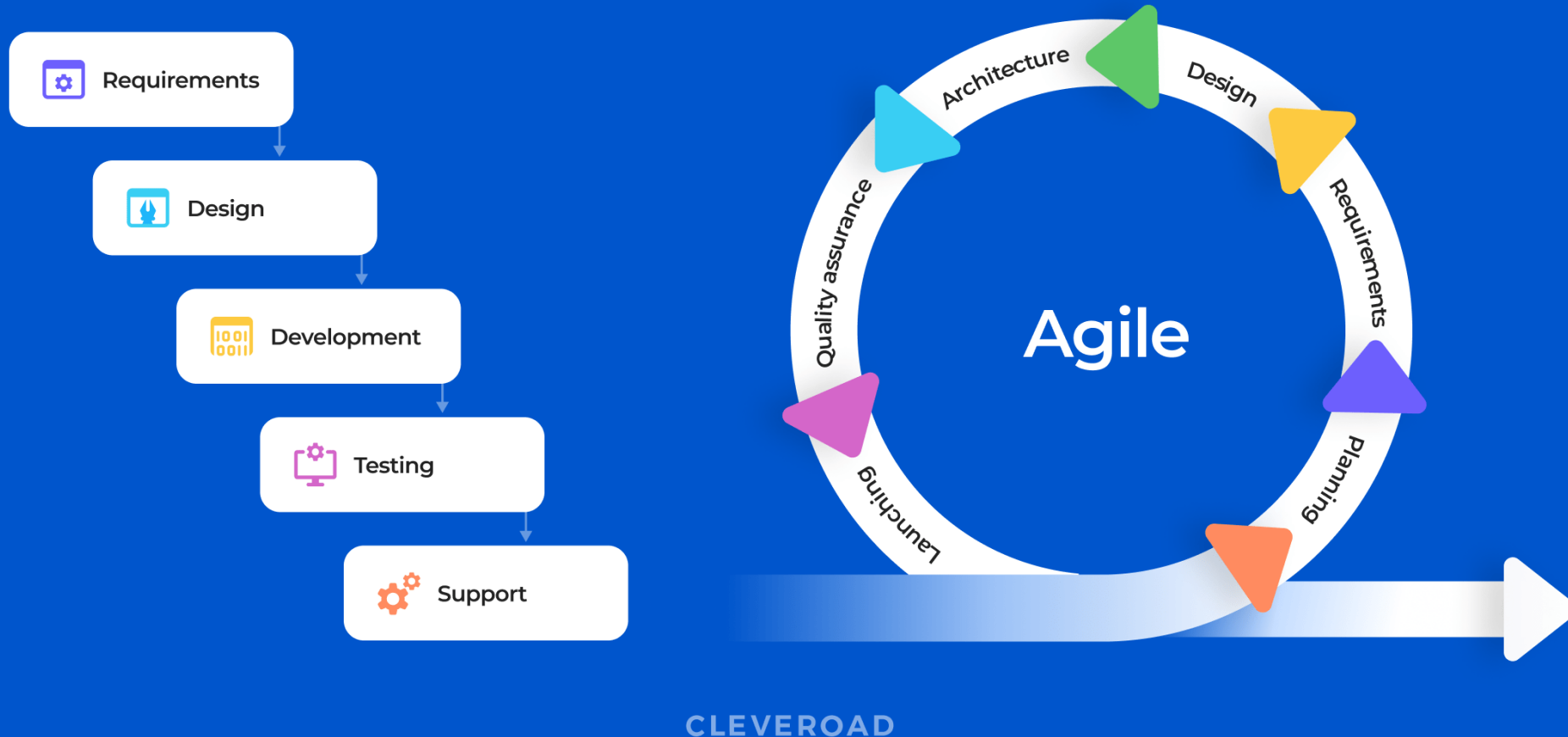## DEVELOP / TEST
Code and conduct quality assurance testing

DEPLOY
Implement new design to existing software iteration

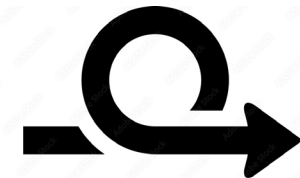## REVIEW
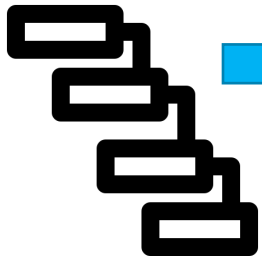Users and stakeholders provide reviews and feedback

[3]

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Waterfall and Agile models comparison

Requirements → Design → Development → Testing → Support

Agile
Architecture · Design · Requirements · Planning · Launching · Quality assurance

CLEVEROAD

[4]

*Note that <u>when</u> changes occur using the Waterfall method the project will progress and it will be addressed after the completion wasting time and resources. Using the Agile approach changes can be made to the project, redirected and adapted easily

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Waterfall   OR   Agile

Pros
Reduced "scope creep"
A final software meeting all the requirements
Easier dividing of roles and responsibilities
More seldom updates accurately rolled out and provided to the market
Set project plans and deadlines

Cons
No flexibility when the specification document is ready
Fewer opportunities to implement changes
No sticking to innovations appearing on the market
Too much time for bugs detection as testing is conducted only when the entire project is accomplished
The change operation process is bureaucratic [4]

Pros
Flexibility to comply with adaptive market and user requirements
The space for a creative problem-solving approach
Optimized resource allocation
Regular updates and higher client satisfaction
Rigid cadence, deadline adaptiveness

Cons
Obscure planning may result in the unforeseen final result
Receptive to a lack of concentration and responsive reactions within sprints
Unremitting pace
Inaccurate testing takes a chance in releasing a product with bugs [4]

The waterfall model is a popular version of the systems development life cycle model for software engineering. Often considered the classic approach to the systems development life cycle, the waterfall model describes a development method that is linear and sequential. Waterfall development has distinct goals for each phase of development. Imagine a waterfall on the cliff of a steep mountain. Once the water has flowed over the edge of the cliff and has begun its journey down the side of the mountain, it cannot turn back. It is the same with waterfall development. Once a phase of development is completed, the development proceeds to the next phase and there is no turning back. [5]

Scrum is an agile software development model based on multiple small teams working in an intensive and interdependent manner. The term is named for the scrum (or scrummage) formation in rugby, which is used to restart the game after an event that causes play to stop, such as an infringement. Scrum employs real-time decision-making processes based on actual events and information. [6]

Waterfall projects are typically more expensive and take longer to deliver. They are also less flexible. However, due to the certainty and rigor waterfall forces teams to employ, resulting products are typically of a higher quality and are more likely to be considered complete. [7]

Agile projects are typically cheaper and can be delivered quickly. They offer greater flexibility, but also produce less predictable results due to the uncertainty and unclear nature of many of the project characteristics. [7]

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6. Margaret Rouse, "Scrum," TechTarget, February 2007, http://searchsoftwarequality.techtarget.com/definition/Scrum. / Cobb, Charles G. Title: The Project Manager's Guide to Mastering Agile : Principles and Practices for an Adaptive Approach. Wiley. 2015

7. glasscubes.com. "Agile vs. Waterfall: Pros & Cons, Use Cases, & More, https://www.glasscubes.com/agile-vs-waterfall/ " Accessed October 16, 2022.

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