1.2 I can assess the suitability of development environments for given

Projects

Waterfall method vs Agile for SDLC project management

Both Agile and Waterfall are sound methodologies that help organisations complete projects efficiently, however, each methodology takes a different path to the finish line.

Waterfall projects are most suited for situations with very low uncertainty in both the requirements and the solutions, its commonly used in construction, manufacturing, spacecraft, IT and software engineering industries.

Waterfall pros for SDLC projects:

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. Waterfall uses clear structure, when compared with other methodologies, waterfall focuses most on a clear, defined set of steps, and determines the end goal early.

The method is simple as phases are prepared and completed one at a time, it’s easy to manage and is suitable for smaller projects.

Waterfall cons for SDLC projects:

The waterfall method is almost incapable of dealing with uncertainty, it’s not suitable for the projects where requirements are at a moderate to high risk of changing but it can deal with change through a formal change-management process, the result is painful and costly, and is not intended to deal with many small changes. Waterfall projects are typically more expensive and take longer to deliver. They are also less flexible. This method is not a good model for complex and object-oriented projects, it’s a poor model for long and ongoing projects. Testing delays is a disadvantage of this method. Clints and users are excluded from the process

Graphical user interface, application

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Projectcubicle.com

Agile has its roots in the world of software, according to a new study by Organize Agile among professionals in 19 countries, nearly half of all organisations have been using this methodology for three years or longer.

Following its conception, it gained popularity in the domain because, in comparison to the traditional waterfall approach, the approach provides companies with a more flexible, efficient and results-led way of realising their technology developments, since then, the use of the approach has expanded rapidly to all sectors and most functions within organisations. Management teams conduct scrum sessions, HR teams work in an agile fashion and project managers use agile practices for the delivery of their milestones and activities.

Agile pros for SDLC projects:

The Agile method has the ability to improve flexibility amid a rapidly changing environment. This method benefits an organisation’s culture, empowering employees to take more responsibility through an approach that fosters teamwork and collaboration, it increases the job satisfaction of employees and creates a more open and productive culture. Other advantages of using the Agile methods are, it improves finances results, it’s up to date with technology and competition changes. There are many widely used Agile methodologies, scrum and Kanban being two of the most popular methods, Other well-known Agile methodologies include LeSS, SAFe, Lean Software Development, Lean Agile Process and Extreme Programming (XP).

Agile cons for SDLC projects:

Less predictability, for some software deliverables, developers cannot quantify the full extent of required efforts, especially in the beginning of the development life cycle, on larger projects. Testers, customers, and developers must constantly interact with each other, this involves a lot of time and energy, numerous face-to-face conversations, as they are the best form of communication, all involved in the project must have close cooperation and availability. Clients must go through training to aid in product development, any lack of client involvment will impact software quality and success, this reflects poorly on the development company.

Documentation is less detailed, as requirements for software are clarified just in time for development, this means when new team members join, they do not know the details about certain features or how they need to perform. This creates misunderstandings and difficulties.

The Agile methods can easily fall off track, as it requires very little planning to get started, and assumes the consumers needs are ever changing. It also has a potential for scope creep, and an ever-changing product becomes an everlasting one.

Graphical user interface, application

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SCRUM

Scrum is a framework that helps teams work together. Scrum encourages teams to learn through experiences, self-organize while working on a problem, and reflect on their wins and losses to continuously improve. While scrum is most frequently used by software development teams, its principles and lessons can be applied to all kinds of teamwork, this is the reason its so popular. Scrum helps teams to develop deliver and sustain complex products. With scrum, a product is built in a series of iterations called sprints that break down big, complex projects into bite-sized pieces, a sprint is a short, time-boxed period when a scrum team works together to complete a set amount of work. Sprints are at the very heart of scrum and agile methodologies, getting sprints right helps an agile team ship better software. it's common for sprints to be between 1 and 4 weeks, however this can vary.

Scrum master

A Scrum team is managed by a Scrum Master, they have the responsibility to manage the team, however, every scrum team is different, many experienced teams handle the responsibilities listed above as a unit and take pride and enjoyment in a shared management of the process. The role of scrum master rotates through the team, with team members facilitating stand-ups and retros in turn. The image below shows some responsibilities a Scrum Master.

Diagram, timeline

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atlassian.com

Kanban

First developed by a Toyota engineer, in Taiichi Ohno in the 1940s, Kanban comes from the Japanese word for “sign” or “visual board.”

Kanban project management is an Agile framework used to visualize and improve workflows, reduce waste and inefficiency, and increase team focus by limiting work in progress. The difference between Kanban and Scrum is, Kanban uses a visualize board to track task progress while Scrum is a method that provides structure to the team and schedule.

Diagram

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