Different Agile approaches and their comparative Analysis?

1. How it works?
2. Applicability?
3. Effectiveness?

Agile is a flexible, iterative approach to project management and software development that focuses on delivering value incrementally and adapting to change. There are several agile methodologies, each with unique features, applications and level of effectiveness. Here's a comparative analysis of some popular agile approaches: -

1. Scrum

How it works:

1) Divides work into fixed-lenghth iterations called Sprints (usually 2-4 weeks).

11) Roles: product owner, Scrum Master, Development Team.

iii) Ceremonies: Sprint planning, Daily stand-ups, Sprint reviews, and retrospectives.

iv) Uses a product backlog for prioritizing tasks.

Applicability:

I) Suitable for projects with rapidly changing requirments.

II) Ideal for teams of up to 10 members.

Effectiveness:

I) Encourages regular feedback and adaption.

II) Works well for projects requiring frequent deliverables.

III) Risks arise if roles are not well understood.

2. Extreme programming (xp)

How it works:

I) Emphasizes technical excellence through practices like pair programming, test driven development (TDD), and frequent releases.

II) Encourages close collaboration with customers.

III) Values Simplicity and frequent feedback.

Applicability:

I) Effective for small to medium sized team in software development.

II) Suitable for projects requiring high-quality code and updates.

Effectiveness:

I) Reduces bugs and improves code quality

II) Demands disciplined adherence to practices, which can be challenging.

3. Kanban

How it works:

I) Visualizes workflow on a Kanban board with columns representing stages.

II) Limits work In progress (WIP) to prevent bottlenecks

III) Focuses on continuous delivery without fixed

in iterations.

Applicability:

1) Best for teams needing flexibility and continuous delivery.

11) Works well in maintenance, support, on non-development workflows.

Effectiveness:

1) Improves visibility and flow of tasks.

11) Lack time-boxed goals, which may hinder deadlines.

111) Adaptable for teams transitioning to Agile.