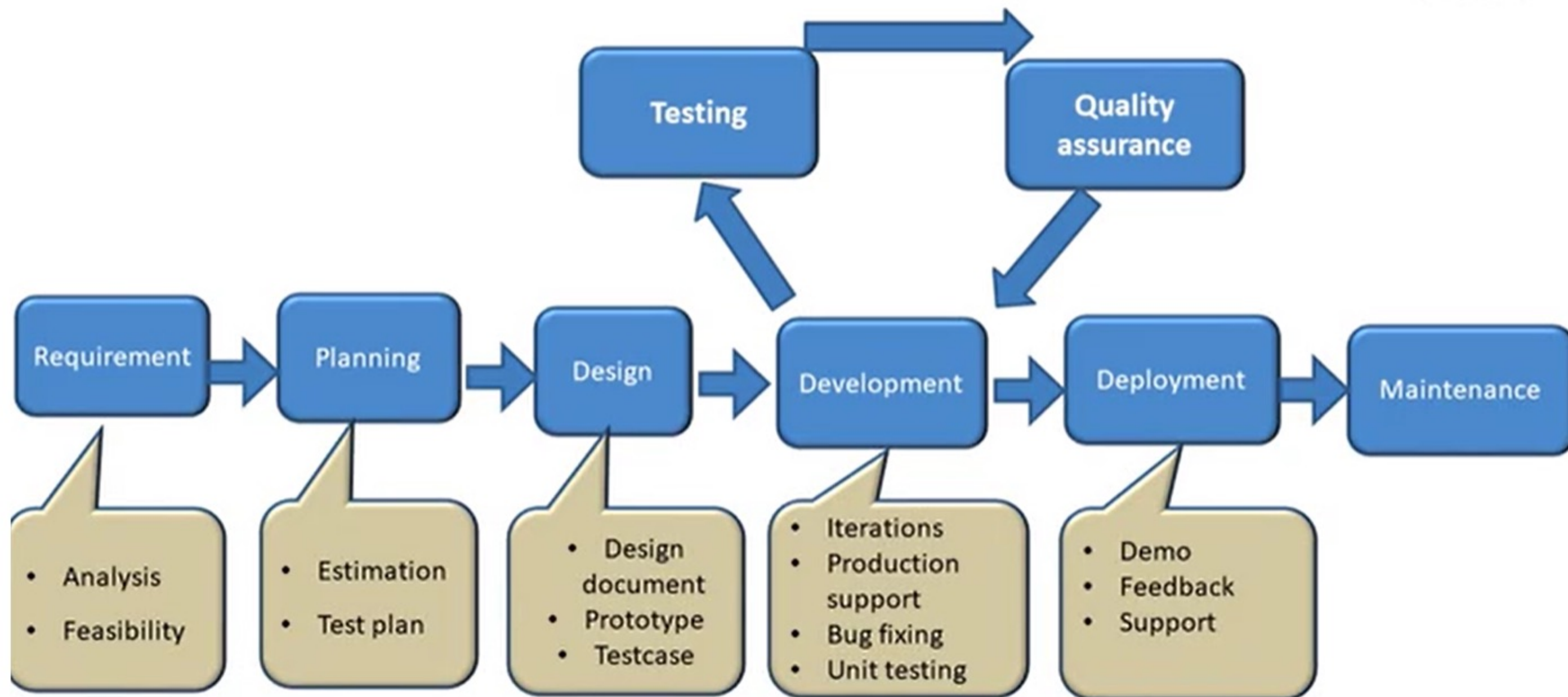# Agile Methodology Characteristics

Iterative and evolutionary development.

Many builds are delivered in the iteration process.

Accepts change of requirement at any stage.

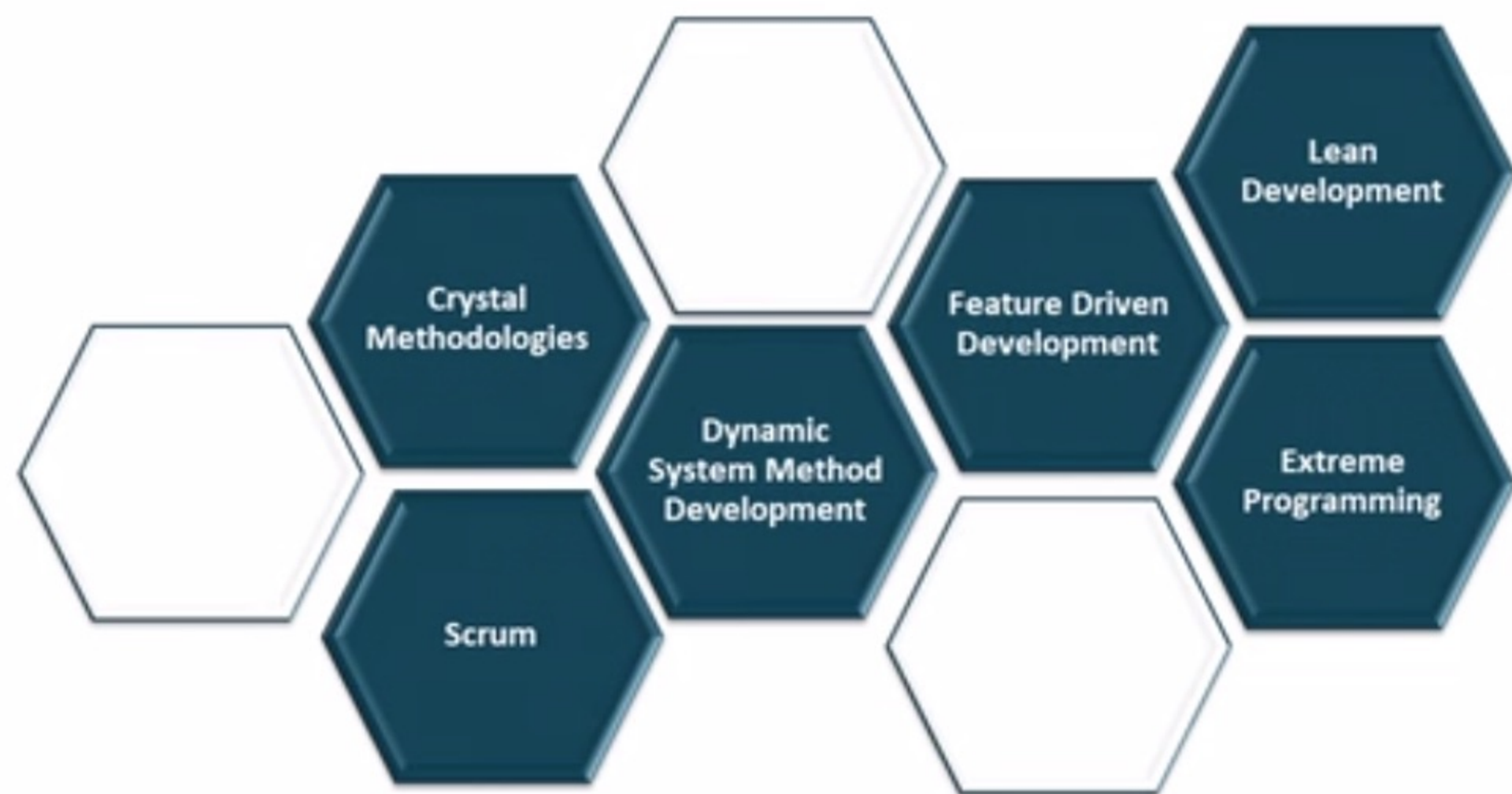Requires close communication among business group, development and testing people.

More focused on success than sticking with a plan.

Reduced risk and time to develop.

Less documentation work compared to other methodologies.

Requires continuous testing.
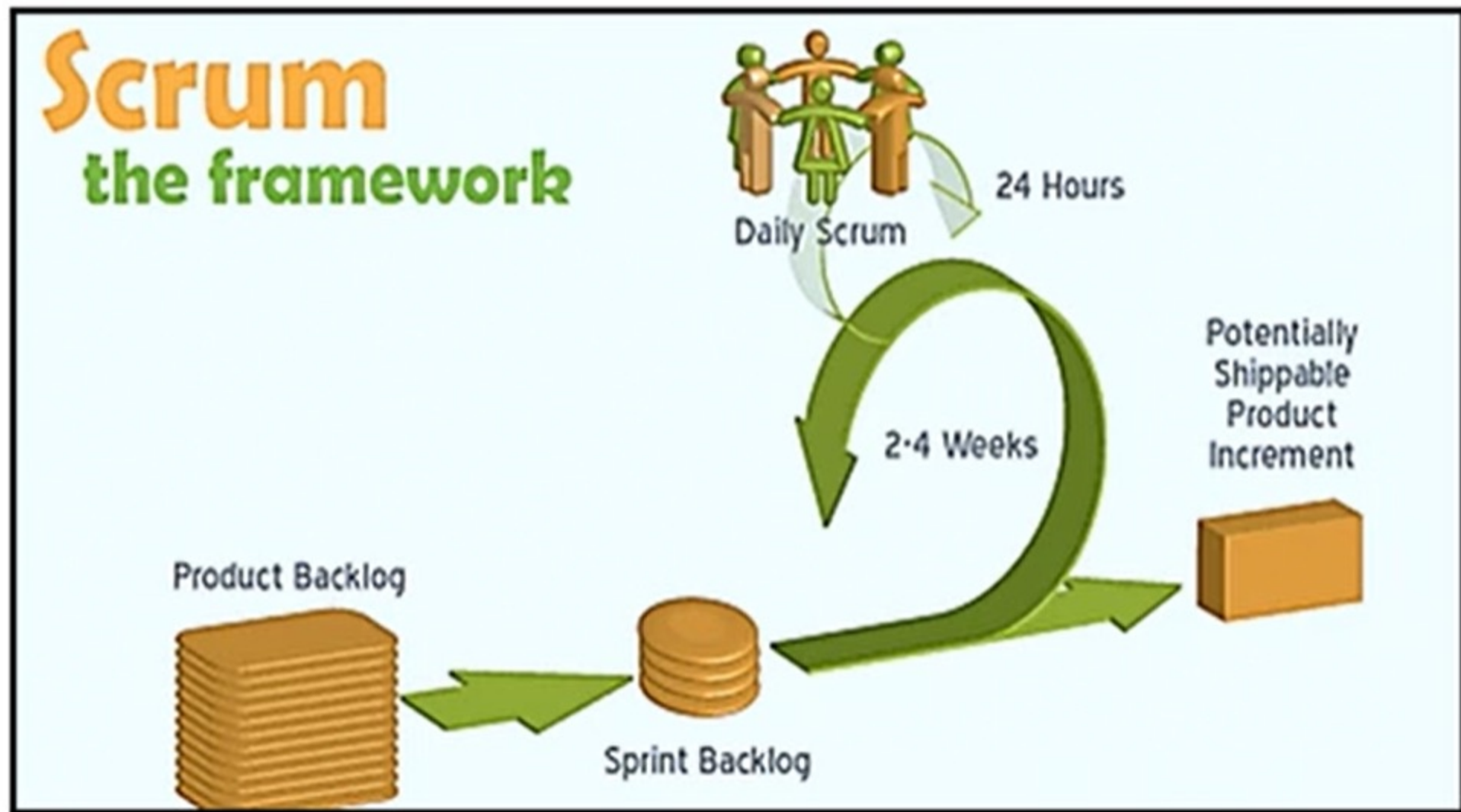
Methodology that promotes agility

Scrum

Scrum divides the development into short cycles called sprint cycles. It advocates daily team meetings for coordination and integration.

The Roles of Scrum are as follows:

- Product Owner

- Scrum Master

- Team Member

Scrum

Scrum the framework

Daily Scrum — 24 Hours

2-4 Weeks

Potentially Shippable Product Increment

Product Backlog

Sprint Backlog

Limitations of Scrum

Increase in Cost

Increase in Time

More useful for small and fast moving projects

Needs experienced team members
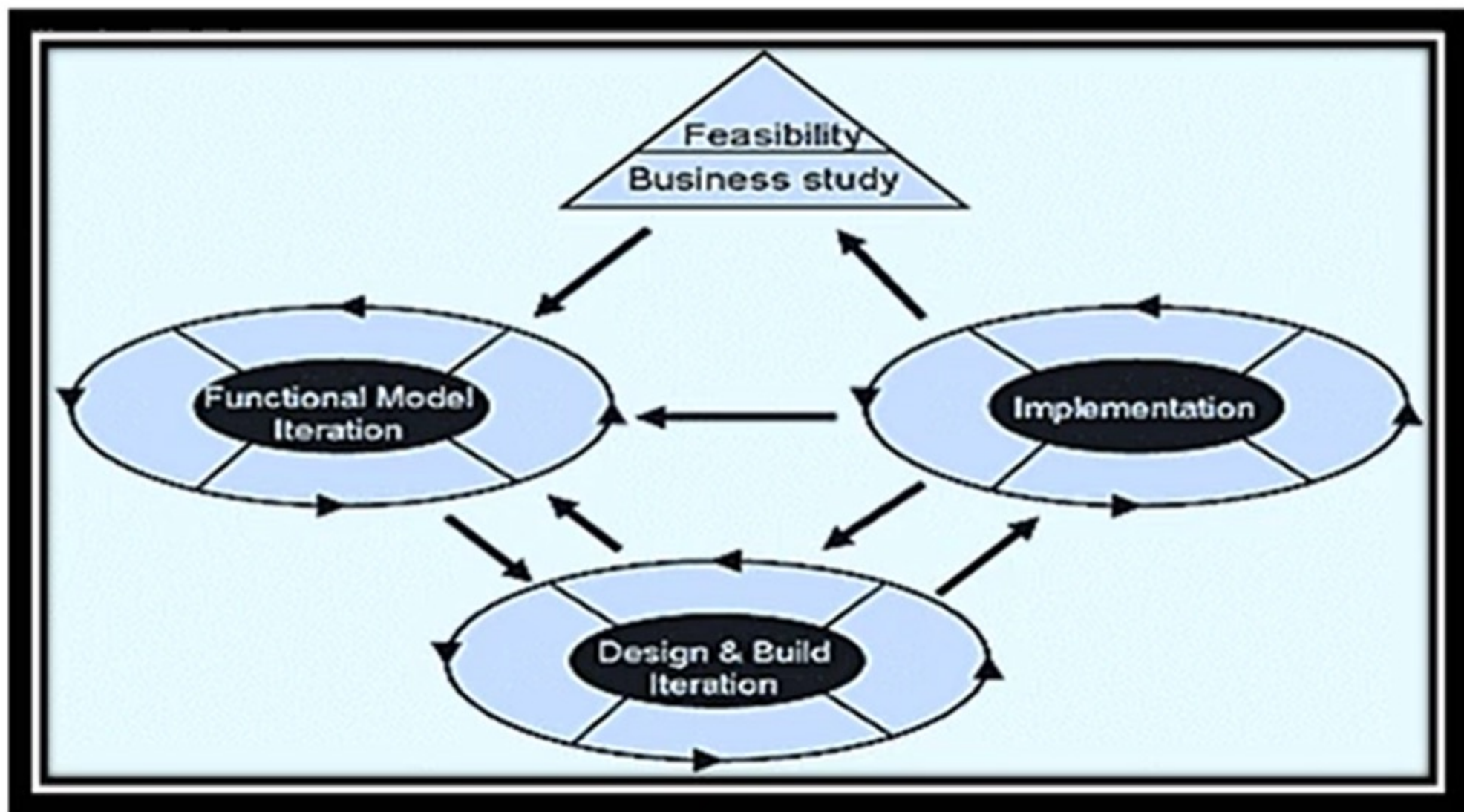
Dynamic System Development Method(DSDM)

Focuses on delivering solutions quickly and efficiently
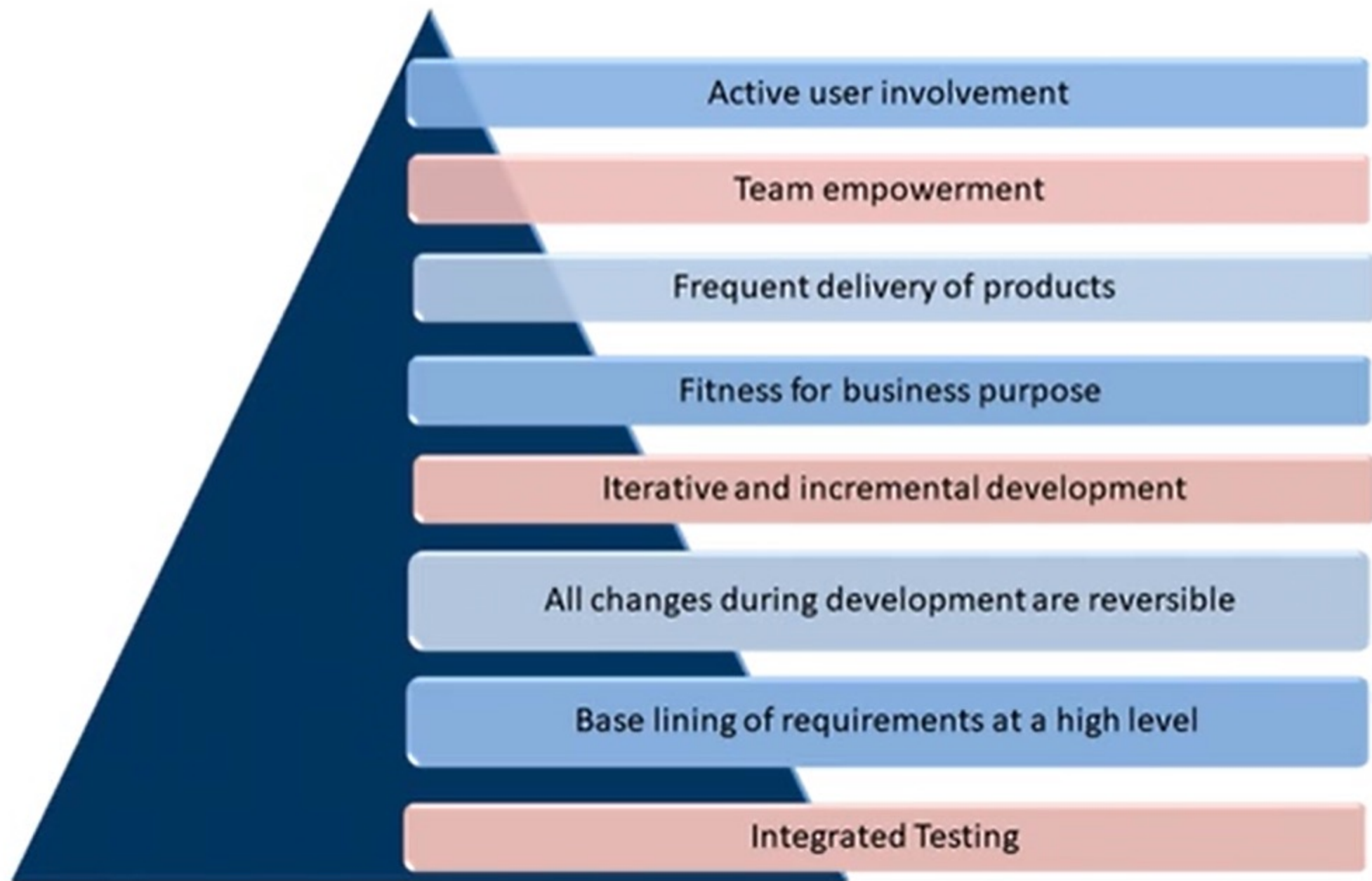
RAD approach to the software development

It is iterative and incremental

Collaborative and co-operative approach among all the stake holders is important

05:34

Dynamic System Development Method(DSDM)

Eight Principles of DSDM

- Active user involvement
- Team empowerment
- Frequent delivery of products
- Fitness for business purpose
- Iterative and incremental development
- All changes during development are reversible
- Base lining of requirements at a high level
- Integrated Testing

Roles in DSDM

Executive Sponsor	Visionary	Ambassador User	Advisor User
Project Manager	Technical Coordinator	Team Leader	Developer
Tester	Scribe Facilitator	Specialist Roles	

Advantages DSDM

Users are highly involved in the development of the system

Basic functionality of the software is delivered quickly

On time delivery of the software

Drawbacks of DSDM

Training is required for both the developers and the users

Difficulty in understanding the model

Crystal Methodology

The word "Crystal" refers to the degree of hardness and the different colours of the methodology

The degree of hardness pertains to the use of rigor and ceremony

The colour of the methods are as follows:

- Clear, Yellow, Orange, Orange Web, Red, Magenta, and Blue.
- The colour is concerned with the "heaviness" of the project
- The lighter the colour the fewer the number of people on the project, whereas the darker colours indicate the need for more resources.

Seven properties of Crystal methodology
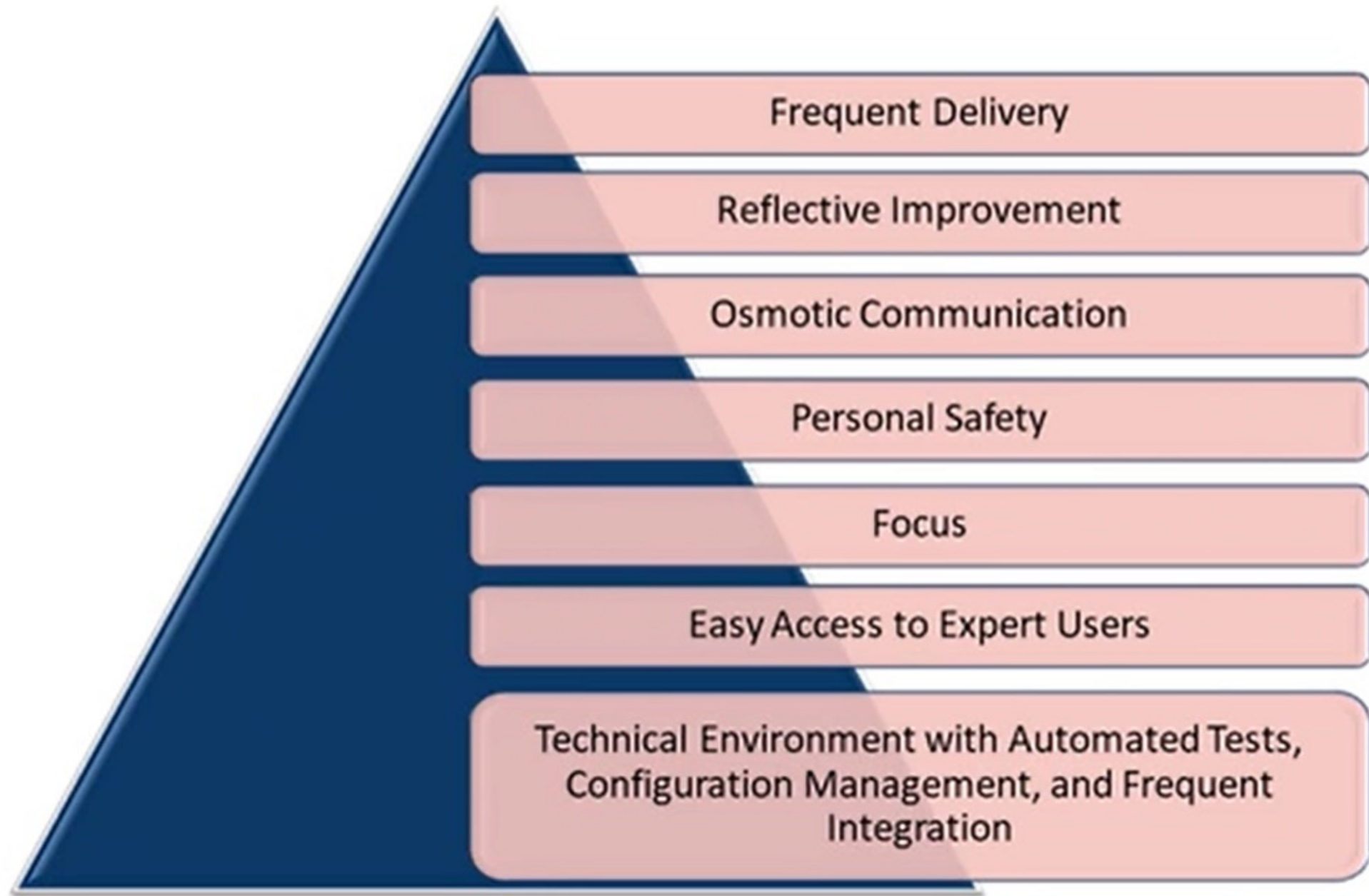
Feature Driven Development (FDD)

A short iteration framework for software development

Focuses on building an object model, build feature list, plan by feature, design by feature, and build by feature

Emphasizes Quality at each step

Delivers frequent, tangible, working results

Offers accurate and meaningful Project Progress Tracking

Combines many of the best practices of other agile models

Puts less focus on initial design and quickly gets to the point where the team can deliver new functionality to the project feature by feature

Feature Driven Development (FDD)
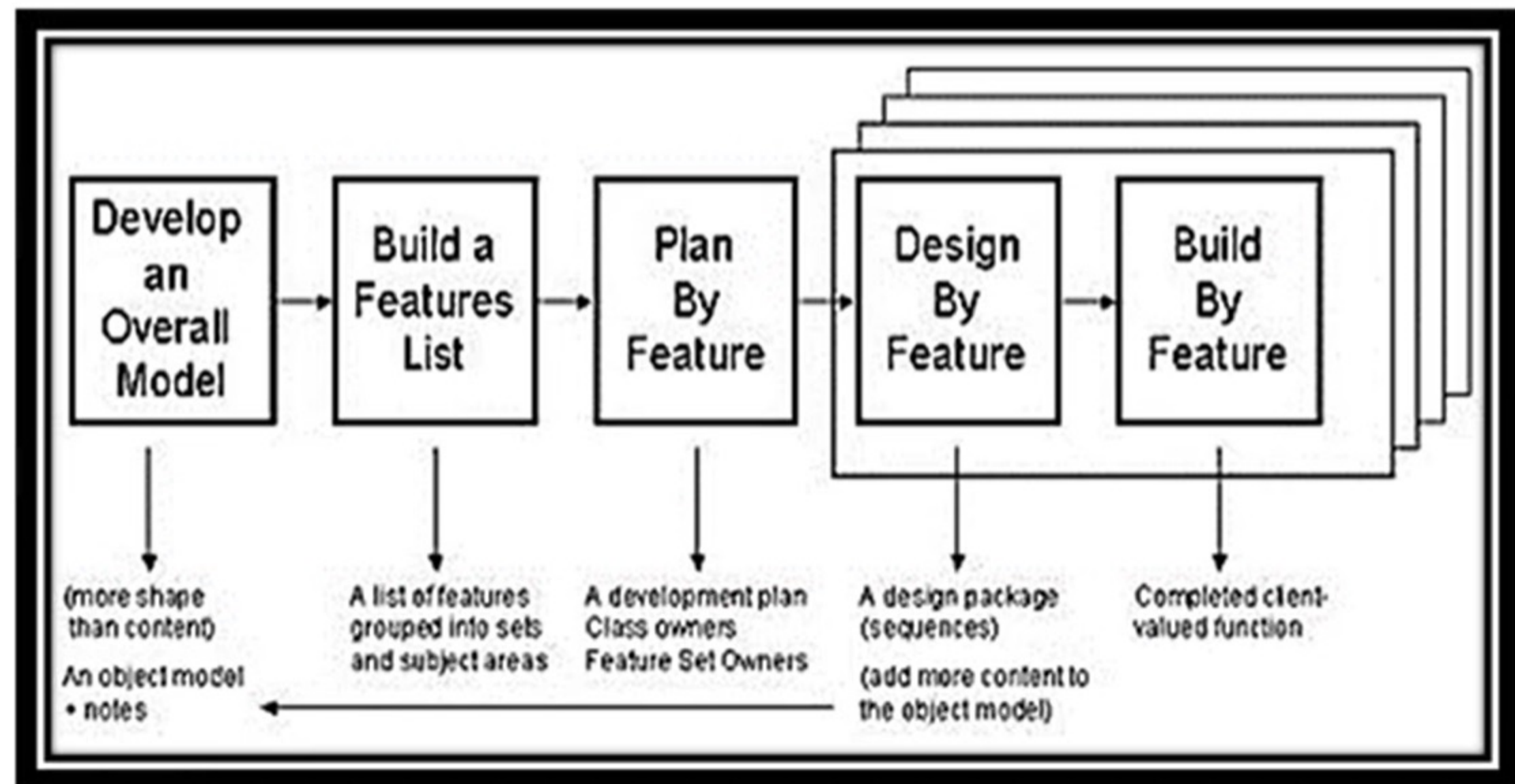
Lean Software Development

Lean software development is the application of lean manufacturing principles when developing software.

Principles of Lean software Development:

Advantages of Lean Software Development

Waste Elimination

Product delivery on time

Reduced Management Time

Empowerment of Delivery Team

Limitations of Lean Software Development

Project is highly dependent on

- Team Cohesiveness
- Exceptional Technical skill of Team Members

Decisions are made when required. So difficult to take tough decisions

SRS will evolve. But if changes are more, developers lose sight of the original objectives of the project

Extreme Programming (XP)

XP is a lightweight (agile) process

- Instead of excessive documentation, XP gives more importance to customer feedback

- Embraces change : iterates often design and redesign, codes and tests frequently, keeps the customer involved

- Delivers software to the customer in short (2 week) iterations

- Eliminates defects early, thus reducing costs

Extreme Programming (XP)
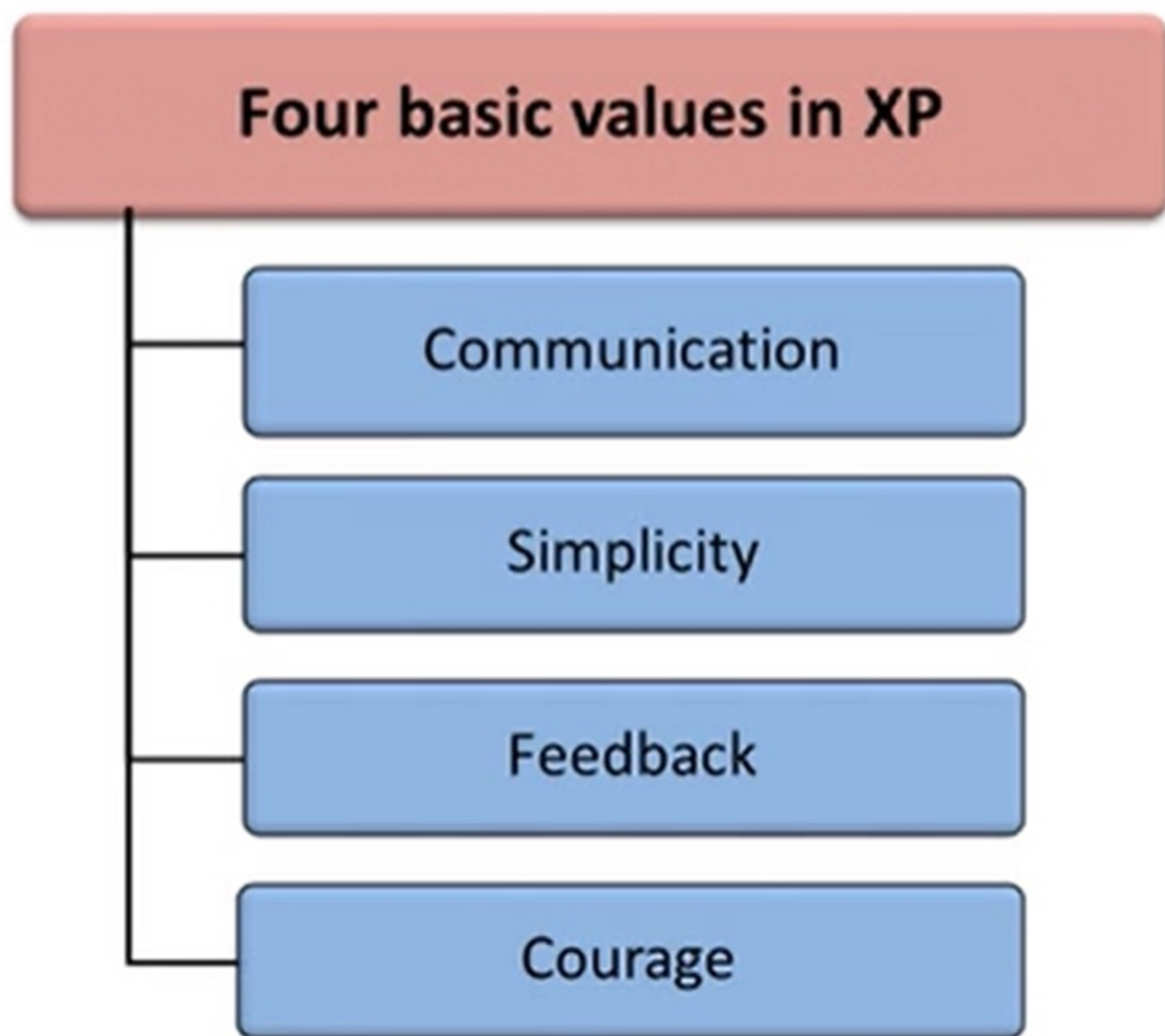
Principles of Extreme Programming

Principles of XP

- Rapid feedback
- Assume Simplicity
- Incremental Changes
- Embrace Change
- Quality Work

Advantages of XP

Employee Satisfaction

Lesser Risks

Cost Saving

Resilience

Robustness

Limitations of XP

XP is geared towards a single project, developed and maintained by a single team.

XP will not work in an environment where:

- a customer or the manager insists on a complete specification or design before they begin programming
- programmers are separated geographically

XP has not been proven to work with systems that have scalability issues

Agile Methodology

A conceptual framework where software is developed in iterations.

It satisfies the customer through early and continuous delivery of valuable software.

Useful when there is no clarity on the client's requirement or when the client frequently changes his requirement.

The development activities can be carried out using the iterative actions.