SCRUM Fundamentals Certification

* Overview of Scrum -

→ A Scrum project involves a collaborative effort to create a new product, service or other result as defined in the Project Vision Statement.

→ Projects are impacted by :
- ↳ Time
- ↳ Cost
- ↳ Scope
- ↳ Quality
- ↳ Resources
- ↳ organizational capabilities
- ↳ other limitations

→ Above constraints make projects difficult to :
- ↳ Plan
- ↳ Execute
- ↳ Manage

→ Therefore, it is important to select & practice an appropriate Project Management Framework.

→ This is where Scrum comes in the picture.

Scrum -

→ Popular Agile Methodology

→ Adaptive, iterative, fast, flexible and effective.

→ Ensures transparency in communication.

→ Creates collective accountability & progress.

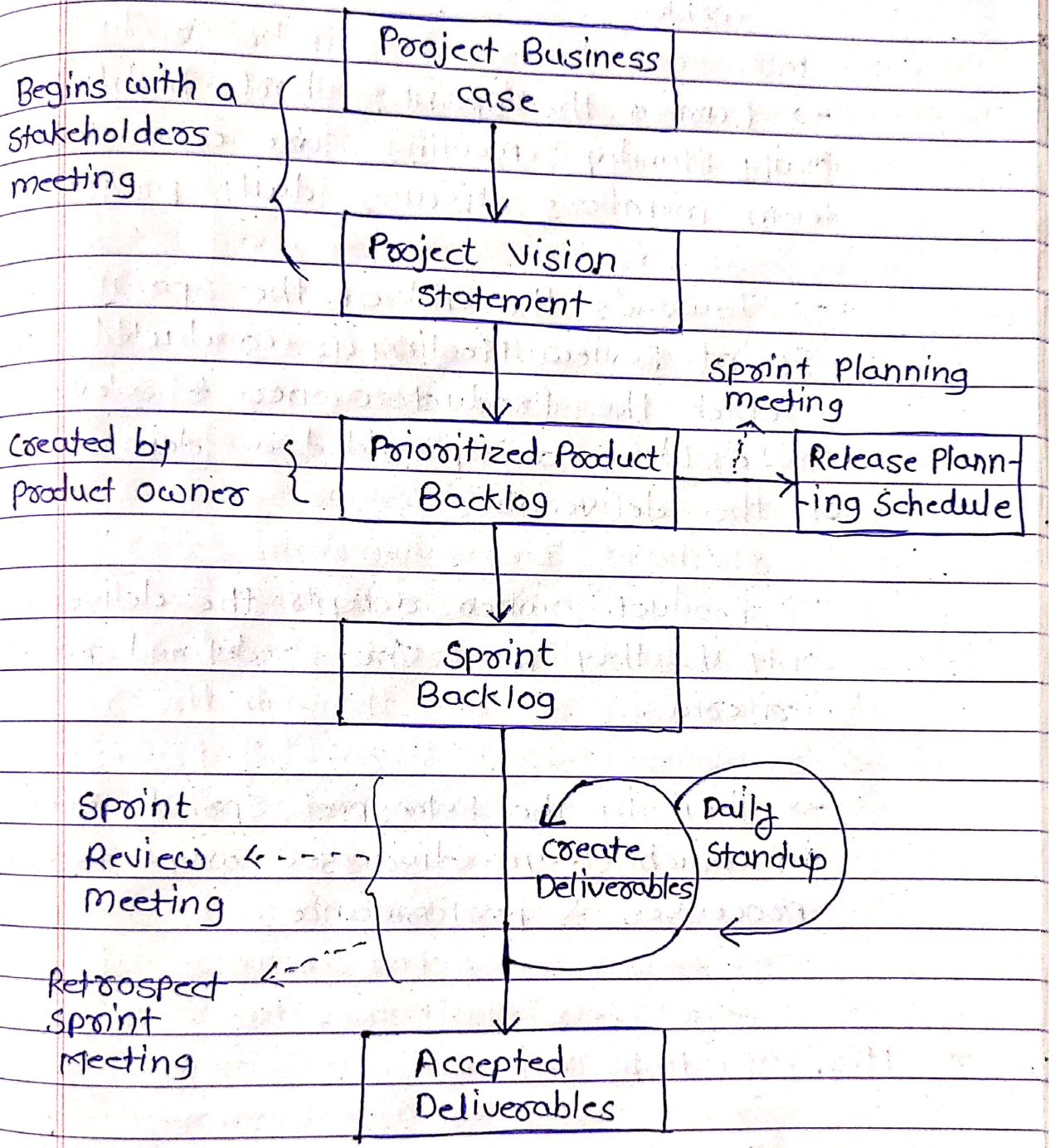
→ It supports all kinds of projects in all types of industries.

Why is Scrum better -

→ A key strength of Scrum lies in its use of cross-functional, self-organised & empowered teams who divide their work in a short, concentrated work cycles called 'sprints'.

→ sprints are short time spans in which a certain amount of work must be done.

Scrum Flow -



→ Prioritized Product backlog contains a prioritized list of business & project requirements written in the form of User stories.

→ In Sprint Planning meeting, high priority User stories are considered for Inclusion in the sprint.

→ A sprint generally lasts between 1 & 6 weeks.

→ During the sprint, short, highly focused Daily Standup meetings are conducted where team members discuss daily progress.

→ Towards the end of the Sprint, a Sprint Review Meeting is conducted, in which the Product owner & relevant Stakeholders are provided a demonstration of the deliverables.

→ Product owner accepts the deliverables only if they meet the Predefined Acceptance Criteria.

→ Then in the Retrospect Sprint meeting, in which team discusses ways to improve processes & performance.

* History of Scrum -

→ Inception of the framework in the 1980s

→ Developed by Hirotaka Takeuchi & Ikujiro Nonaka.

→ They called it a Holistic or "Rugby" approach.

→ Ken Schwaber & Jeff Sutherland elaborated on the Scrum concept & its applicability in Software Development in 1995 in Austin, Texas.

Benefits of using Scrum -

① Adaptibility

→ Empirical process control & iterative delivery make projects adaptable & open to incorporating change when it occurs.

② Customer Centric

→ Ensures a customer-oriented framework in a scrum-controlled project.

③ Continuous Delivery of Value -

→ Delivery of value through the ship deliverables process as frequently as the customer requires.

④ Early Delivery of High Value -

→ The create prioritized product backlog process ensures that the highest value requirements of the customer are satisfied first.

(5) continuous feedback :-

→ Provided through the conduct Daily standup & demonstrate and validate sprint processes.

(6) Transparency :-

→ Info. emitters like a Scrumboard & sprint burndown chart are shared, which leads to open working environment.

(7) continuous Improvement

→ Deliverables are improved progressively Sprint by sprint, through the Groom prioritized Product Backlog processes.

(8) Sustainable Pace :-

→ People involved can work at a sustain-able pace that they can, in theory, continue indefinitely.

(9) Efficient Development Process :-

→ It is observed that time-boxing & minimizing non-essential work leads to higher efficiency levels.

(10) Motivation

(11) Faster Problem Resolution

(12) Effective Deliverables

(13) Collective Ownership

(14) High Velocity

→ Enables highly-skilled cross-functional teams to achieve their full potential & high velocity.

(15) Innovative Environment

* **Scrum Principles** -

→ can be applied to any type of project in any organization.

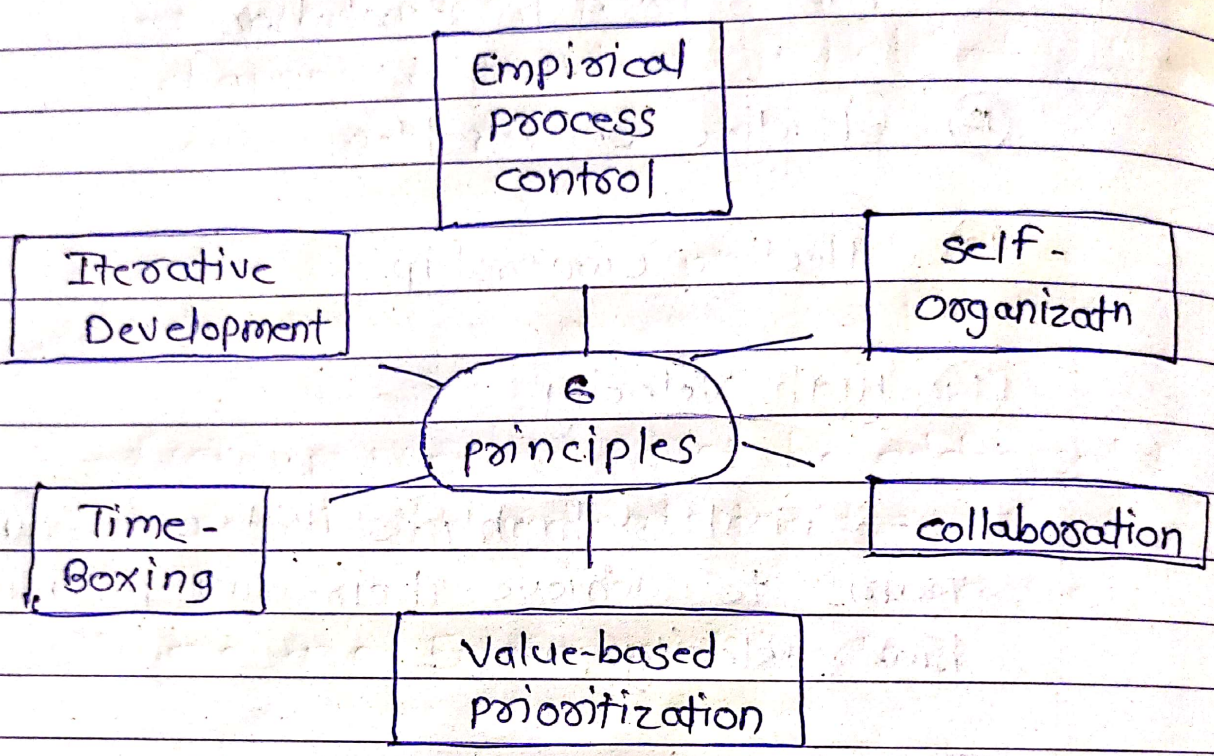
→ Are used to ensure effective implementn. of the scrum framework.

→ They are non negotiable.

→ Must be applied as specified in the SBOK Guide.

→ In contrast, Scrum Aspects & Processes can be modified to meet requirements of the project or organization.

There are 6 scrum Principles :



① Empirical Process Control

→ Emphasizes core philosophy of scrum

→ Based on 3 main ideas of :
  ↳ Transparency
  ↳ Inspection
  ↳ Adaptation

② Self-organization -

→ focuses on todays workers.

→ Self-organize rather than command & control.

③ Collaboration -

→ Focuses on 3 core dimensions related to collaborative work :
  ↳ Awareness
  ↳ Articulation
  ↳ Appropriation

→ Also advocates project mgmt as a shared value-creation process.

④ Value-based prioritization -

→ Focuses on delivering Maximum Business Value.

⑤ Time-Boxing -

→ Describes how time is considered a limiting constraint in scrum.

→ Time-Boxing helps effectively manage project planning & execution.

→ Time-Boxed elements in Scrum are :
  ↳ Sprints
  ↳ Daily Standup Meetings
  ↳ Sprint Planning Meetings
  ↳ Sprint Review Meetings

⑤ Iterative Development –

→ Emphasizes how to better manage changes & build projects that satisfy customer needs.

* Scrum Aspects –

→ Scrum Aspects must be addressed & managed throughout a Scrum Project.

There are 5 Scrum Aspects :

organization
Business Justification
Quality
change
Risk

① Organization

→ In order to learn organization, we must first learn Roles & Responsibilities

→ It ensures the successful implementⁿ of scrum.

→ There are 2 types of Roles :

↳ Core Roles

↳ Non-Core Roles

⊛ Core Roles

→ Involved in producing project's product or service.

→ Individuals assigned core roles are fully committed to the project.

→ They are responsible for the success of each project iteration & of project as a whole.

→ Core Roles are assigned to:

- ↳ Product Owner
- ↳ Scrum Master
- ↳ Scrum Team

[A] Product Owner

↳ Responsible for achieving max business value for project.

↳ Articulates customer requirements

↳ Maintains business justification for a project.

↳ Represents Customer's voice.

[B] Scrum Master

↳ Ensures that Scrum Team has an appropriate environment

↳ Guides, facilitates & teaches Scrum Practices.

↳ Clears impediments for the team.

↳ Ensures that scrum processes are being followed.

[c] Scrum Team

↳ Responsible for understanding Product Owner specified requirements.

↳ Creating the project deliverables.

⊛ Non-core Roles -

→ Optional & may include all team members who are interested in the project.

→ They have no formal role in the project team, but may interface with the team.

→ Not be responsible for the success of the project.

→ Non-core roles are assigned to :

↳ Stakeholder (s)
↳ Scrum Guidance Body
↳ Vendors

[A] Stakeholder(s) -

↳ Customers, users & sponsors

↳ Interface with Scrum Core Team.

↳ Influence the project throughout

↳ It is for them the project produces collaborative benefits.

[B] Scrum Guidance Body -

↳ Set of documents or a group of experts.

↳ Involved with defining objectives.

↳ Guides the work carried out by PO, SM & ST.

[C] Vendors -

↳ External individuals or Internal organization.

↳ Provide products & services that are not within the core compentancies of the project organization.

② Business Justification -

→ Imp for an org to perform Business Assessment before the start of project.

→ Helps key decision makers to understand the business need for a change, new product or a service.

→ Based on :

↳ Value-driven delivery
↳ Attempts to deliver results as early in the project as possible.

③ Quality -

→ In Scrum, Quality is defined as the ability of the completed product or deliverables to meet the Acceptance Criteria & achieve the business value expected by the customer.

→ To meet quality, scrum adopts an approach of Continuous Improvement.
↳ Team learns for stakeholders & experience to constantly keep the Prioritized Product Backlog.
↳ PPB is simply never complete until closure or termination of project.
↳ Changes to requirements reflect changes in internal & external business environment.

④ Change -

→ Every project is exposed to change It is imperative that project team members understand that the scrum development processes are designed to embrace change.

Scrum Acknowledges

↳ Stakeholders may change their mind about what they want during the course of the project - Requirements Churn.

↳ It is not always feasible for stake-holders to define requirements during project initiation.

→ SCRUM welcomes change by using short iterative sprints.

⑤ Risk -

→ An uncertain event or set of events that can affect objectives of a project & may contribute to its success or failure.

→ Managing risks must be done proactively. It should begin at project initiation & continue throughout project lifecycle.

→ Risk mgmt should follow standardized steps to ensure risks are:

↳ Identified
↳ Evaluated
↳ Proper course of action is determined upon & acted upon.

→ Risks should be identified, assessed & responded to based on 2 factors:

[A] The probability of each risk's occurance

[B] The possible impact in the event of such occurance.

↳ Risks with high probability & impact value are determined by multiplying both factors.

↳ Once a Risk is identified, it is imp to understand the risk.

* Scrum Processes -

→ Scrum Processes address the specific activities & flow of a Scrum Project.

→ There are 19 processes in total, which are grouped in 5 phases:

→ These 5 phases describe each process in detail which include:

↳ Input
↳ output
↳ Tools

Phase 1 - Initiate -

① Create Project Vision
- ↳ Project Business is reviewed to create Project Vision statement.
- ↳ Product Owner is identified.

② Identify Scrum Master & stakeholder -
- ↳ Scrum Master is identified.

③ Form Scrum Team
- ↳ Scrum Team members are identified.
- ↳ PO collaborates with SM to do so.

④ Develop Epic (s)
- ↳ Project vision statement serves as the basis for developing epic.
- ↳ User group meetings may be held to develop Epic(s).

⑤ Create a Prioritized Product Backlog -
- ↳ Epics & unrefined user stories are refined & elaborated & prioritized to create a PPB.
- ↳ Done criteria is also established.

⑥ Conduct Release Planning
- ↳ Scrum core Team reviews the user stories in the Prioritized Product Backlog to develop a Release Planning Schedule.

Phase 2 - Project Plan & Estimate

① create User stories

↳ US & their acceptance criteria are created.
↳ Usually written by Product Owner.
↳ Involves Scrum Team members create User stories.
↳ Incorporated in the PPB.

mandatory inputs

↳ Scrum core Team
↳ User stories

Tools

↳ Estimation Methods
  ↳ Wideband delphi
  ↳ Planning Poker
  ↳ Fist of Five
  ↳ Affinity Estimation

Output

↳ Estimated User Stories

② commit User stories -

mandatory inputs

↳ Scrum core Team
↳ Estimated User stories
↳ Length of sprint

Tools

↳ Sprint Planning Team
↳ communication Techniques

Output

↳ committed user stories.

④③ Identify Tasks

Mandatory Inputs

↳ Scrum core Team
↳ committed User Stories
↳ Task Planning Meetings
↳ Task List

Tools

↳ sprint Planning Meetings

Output

↳ Task List

⑤ Estimate Tasks

Mandatory Inputs

↳ Scrum core Team
↳ Task List

Tools

↳ Sprint Planning Meetings
↳ Estimation Criteria
↳ Estimation Methods

output

↳ Effort estimated Task List.

⑥ Create Sprint Backlog

Inputs

- Scrum Core Team
- Effort Estimated Task List
- Length of Sprint
- Dependencies
- Team Calendar

Tools

- Sprint Planning Meetings
- Sprint Tracking Tools
- Sprint Tracking Metrics

Output

- Sprint Backlog
- Sprint Burndown chart

② Estimate User Stories

Inputs

- Scrum Core Team
- User Stories

Tools

- Sprint Planning Meetings
- PPB Review Meetings
- Estimation methods

Output

- Estimated User Stories
- Updated PPB

Phase 3 - Implement

1. Create Deliverables
2. Conduct Daily standup
3. Groom Prioritized Product Backlog.

Phase 4 - Review & Retrospect

1. Demonstrate & Validate sprint
2. Retrospect sprint

Phase 5 - Release

1. Ship deliverables
2. Retrospect Project

Scrum vs Traditional Project Mgmt

	Scrum	Traditional
Emphasis	People	Process
Size	Small to Large	Large
Domain	Unpredictable / Exploratory	Predictable
Documentation	Minimal	Comprehensive
Process Style	Iterative	Linear
Upfront Planning	Low	High
Perspective to Change	Adaptability	Sustainability
Management style	Decentralized	Autocratic
Leadership	collaborative	Command & control
Performance Measurement	Business Value	Plan conformity
Returns on Investment	Early / Throughout Project life	End of project life