PMP® EXAM PREP

PMI Authorized Training Partner

BOOTCAMP

Session 5

Class will begin at 10 am EST

Attendance Alert

Please make sure you log into Zoom with your correct first name and last name and enter the same information for every session.

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PMP® Exam Prep

This course will assist learners in preparing for PMI's PMP Exam (2021 Update)

Today's Session Topics (Mapped to the PMP Student Manual)

	Creating a High-Performing Team Lesson 1	Starting the Project Lesson 2	Doing the Work Lesson 3	Keeping the Team on Track Lesson 4	Keeping the Business in Mind Lesson 5
Topic A	Build a Team	Determine Appropriate Project Methodology/Methods and Practices	Assess and Manage Risks	Lead a Team	Manage Compliance Requirements
Topic B	Define Team Ground Rules	Plan and Manage Scope	Execute Project to Deliver Business Value	Support Team Performance	Evaluate and Deliver Project Benefits and Value
Topic C	Negotiate Project Agreements	Plan and Manage Schedule	Manage Communications	Address and Remove Impediments, Obstacles, and Blockers	Evaluate and Address Internal and External Business Environment Changes
Topic D	Empower Team Members and Stakeholders	Plan and Manage Budget and Resources	Engage Stakeholders	Manage Conflict	Support Organizational Change
Topic E	Train Team Members and Stakeholders	Plan and Manage Quality of Products and Deliverables	Create Project Artifacts	Collaborate with Stakeholders	Employ Continuous Process Improvement
Topic F	Engage and Support Virtual Teams	Integrate Project Planning Activities	Manage Project Changes	Mentor Relevant Stakeholders	**Plus, BONUS Agile Content!**
Topic G	Build Shared Understanding about a Project	Plan and Manage Procurement	Manage Project Issues	Apply Emotional Intelligence to Promote Team Performance	
Topic H		Establish Project Governance Structure	Ensure Knowledge Transfer for Project Continuity		
Topic I		Plan and Manage Project/Phase Closure			

Evaluate and Deliver Project Benefits and Value

TOPIC B

Deliverables and Tools

Benefits Management Plan

Value Analysis
Cost Analysis
EVM, ETC analysis
ROI, NPV, IRR
Benefit Cost Analysis
Decision Trees, EMV
Monte Carlo
Net Promoter Score
A/B Testing

Benefits Management Plan

Target benefits	Expected tangible and intangible business value to be realized from the project.
Strategic alignment	How the benefits align with the organization's business strategies
Timeframe	When the benefits (short-term and long-term) will be realized, usually by project phase
Benefits owner	Person or group that monitors, records, and reports the benefits
Metrics	Direct and indirect measurements of the realized benefits
Risks	Risks associated with achieving the targeted benefits

Sprint Reviews /Demos

- ✓ At the end of each iteration or sprint, the team conducts a sprint review or demo.
- ✓ In early stages, obtain the product owner's **acceptance of the story** and **any feedback** to enable the team to make changes to **optimize business value**.
- ✓ **Focus on completing whole user stories** in each sprint.
- ✓ Verify that the capability is **"potentially shippable"**.

Release Management

In traditional projects, product release occurs at the end when everything is complete.

However, in today's complex business environment, where **work is hardly ever "done"**, we need to **factor change into our thinking** about work.

Agile projects can convert high-value capabilities into delivered solutions early.

Disciplined Agile (DA) Approaches

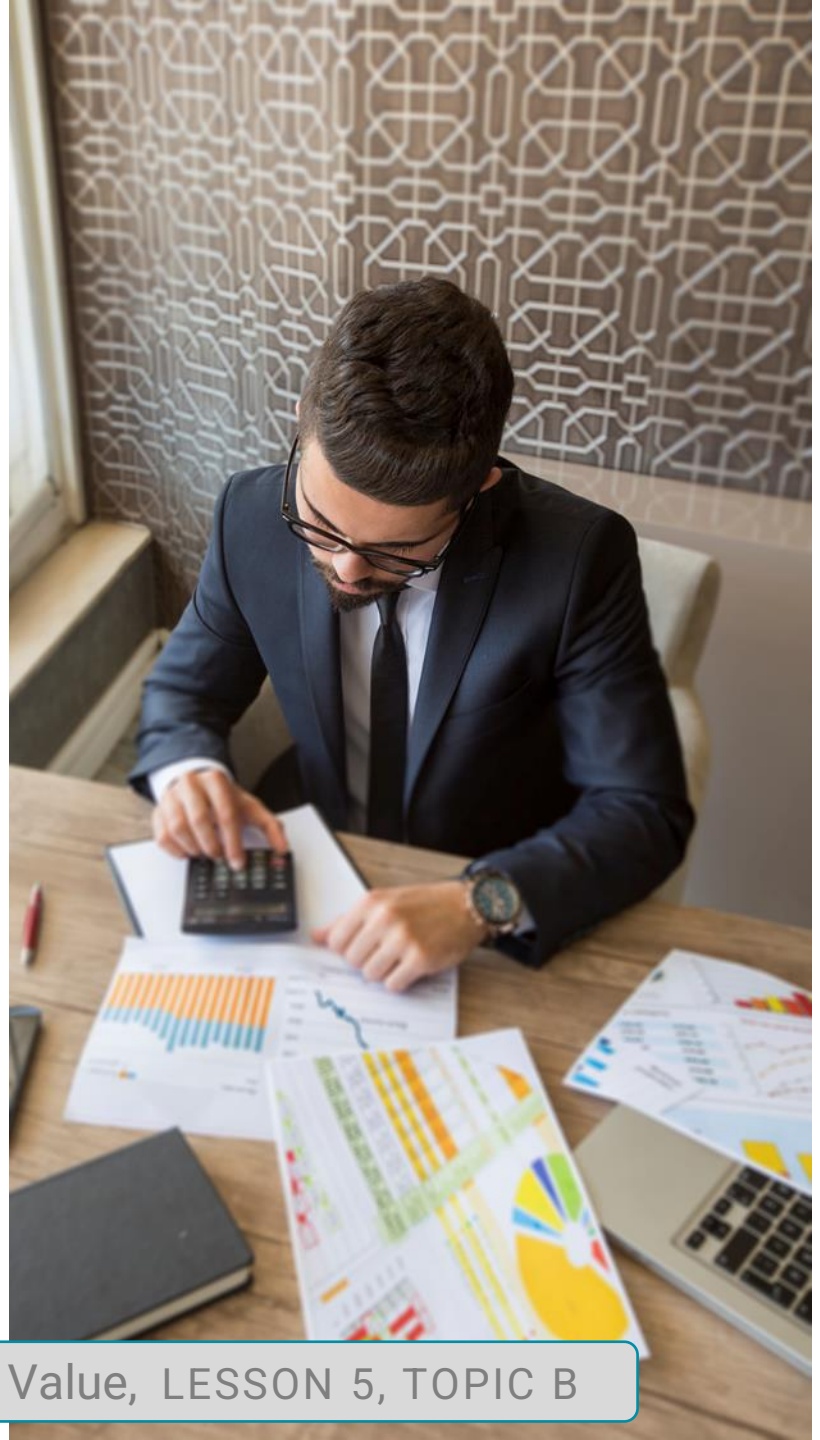
- ✓ Use DA approaches to support **dynamic work environments**.
- ✓ A Product Owner creates a **minimum business increment (MBI)** that defines work requirements to deliver the stated value.
- ✓ The MBI **creates value quickly** and incrementally, so the business can start using and benefitting from it.

Advantages:

- Feature or capability assessment
- Improve organizational tolerance for change
- A time cadence for subsequent releases

Benefit Cost Analysis

- ✓ Frequently used to **compare potential projects** to determine which one to authorize.
- ✓ Select the alternative which demonstrates that **benefits outweigh costs by the greatest amount**.
- ✓ Alternative **should not be chosen** when costs exceed benefits.
- ✓ The **accuracy of the estimates** of cost and benefit determines the **value of the benefit cost analysis**.



Present Value (PV) Calculation

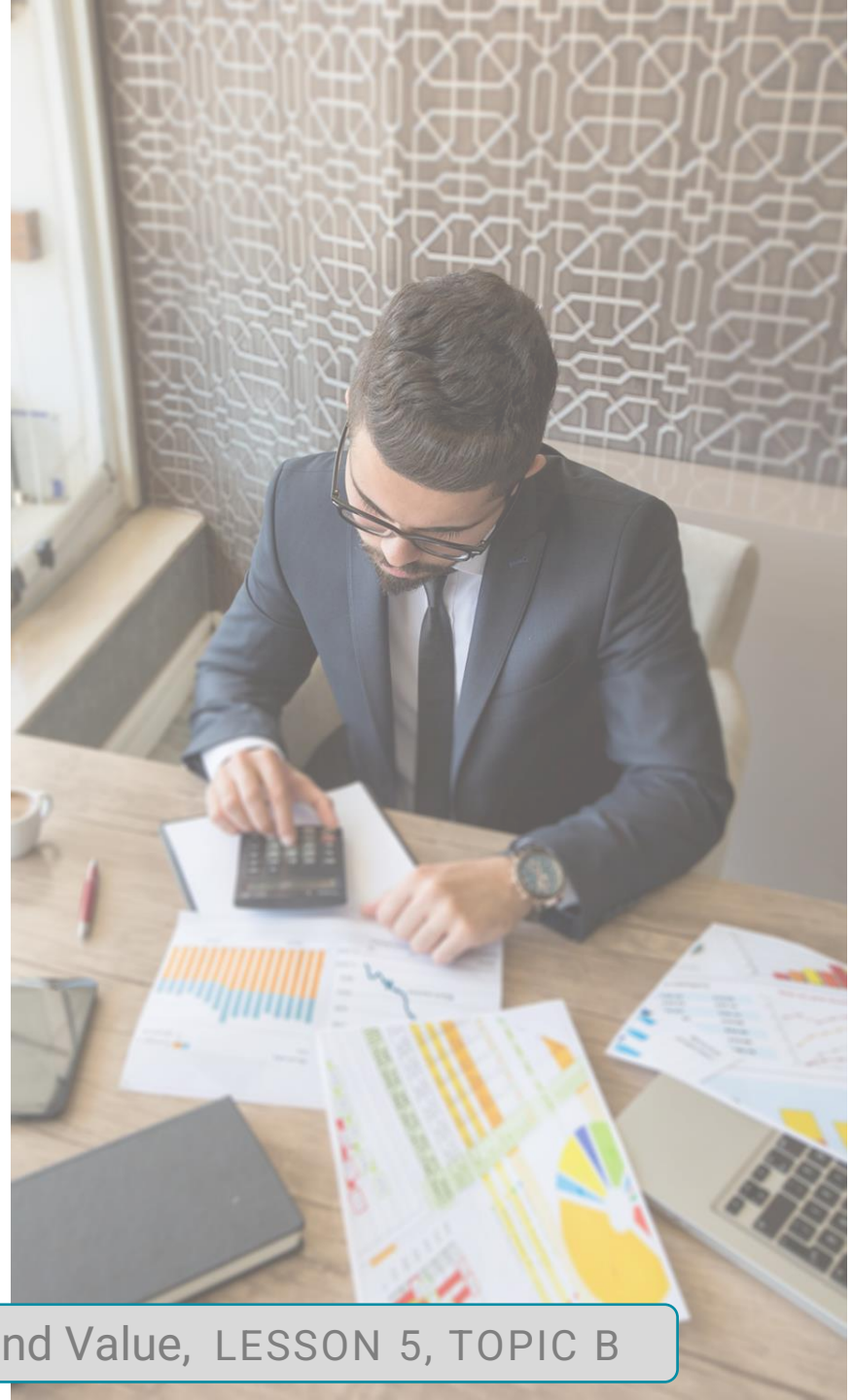
The PV formula is:

$$PV = \frac{FV}{(1+r)^n}$$

Present Value (PV) Calculation

If you need $USD 3,000 in three years and can invest your money at 8 percent (8%) interest, the present value of your initial investment is calculated:

$$\$2{,}381.50 = \frac{\$3{,}000.00}{(1+0.08)^3}$$



More about...

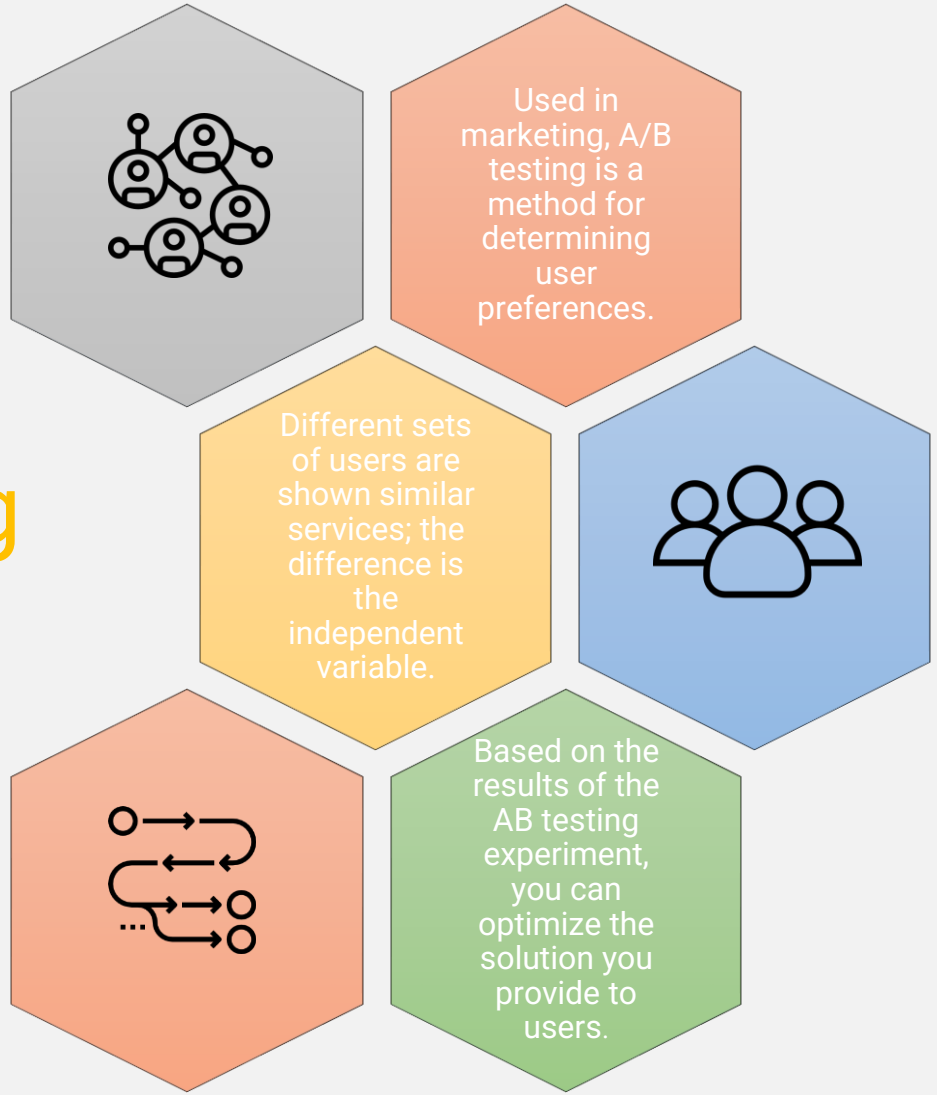
Course: Delivering Project Benefits and Value (2021 Update)
Video: Calculating Tangible Benefits and Value (9:29 run time)
Watch: Start to 3:55

Net Promoter Score (NPS)

NPS is a metric used in customer experience programs to measure customer loyalty.

Customers rate their experience with a number from -100 to +100. A higher score is desirable.

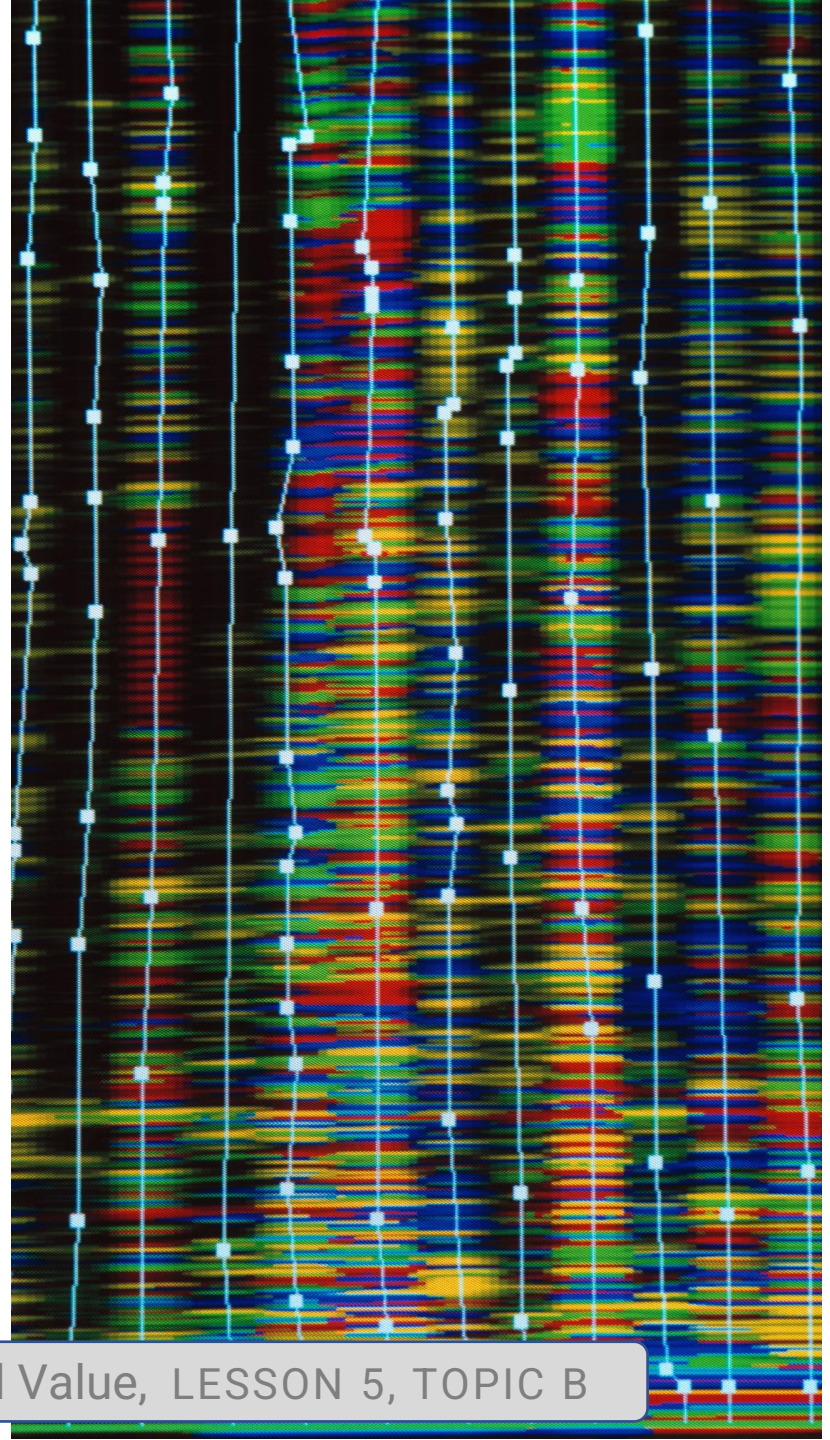
A/B Testing


Used in marketing, A/B testing is a method for determining user preferences.
Different sets of users are shown similar services; the difference is the independent variable.
Based on the results of the AB testing experiment, you can optimize the solution you provide to users.

Monte Carlo Simulation

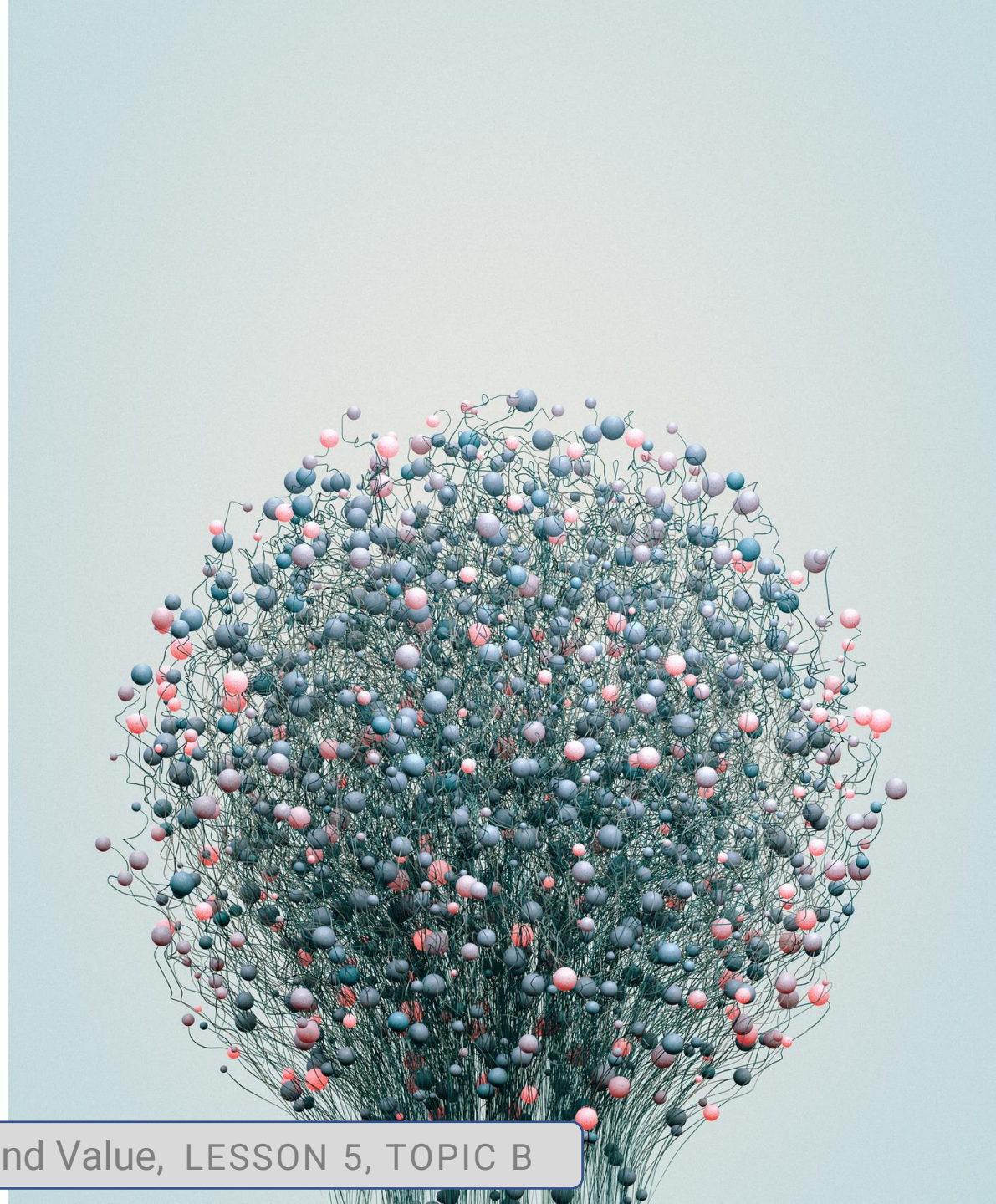
Outputs are generated to represent the **range of possible outcomes** for the project.

Monte Carlo refers to not one single analysis method but to a **wide class of techniques**, mostly making use of sophisticated computers and inputs of **random numbers, probabilities, and algorithms**.



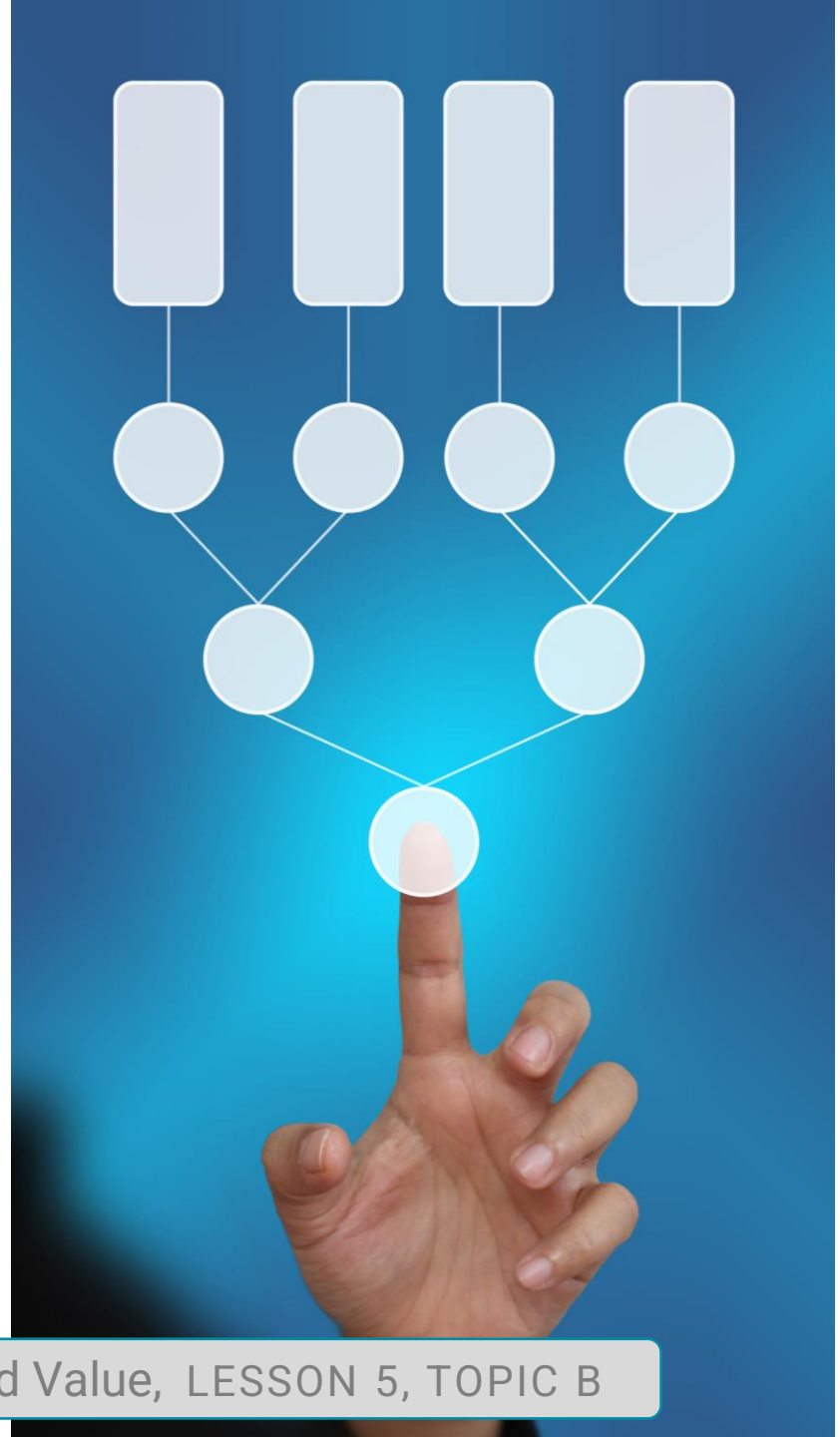
Using Simulations

- ✓Uses computer models and **estimates of risks.**
- ✓Translates **uncertainties** into **potential impact**.
- ✓Involves **calculating multiple project durations**, using **varying sets of assumptions**.



Use Decision Trees to Find Benefit and Value

- ✓ Use to support **selection** of the best of several action options.
- ✓ Branches represent different **decisions or events**, each of which can have **associated costs and risks**.
- ✓ The **end-points** of branches in the decision tree represent the **outcome** from following that path, which can be **negative** or **positive**.
- ✓ **Calculate** the **expected monetary value** of each branch and select the optimal one.



Evaluate and Address Internal and External Business Environment Changes

TOPIC C

Deliverables and Tools

Baselines

Configuration Management System

Backlogs

(Updated) Roadmaps

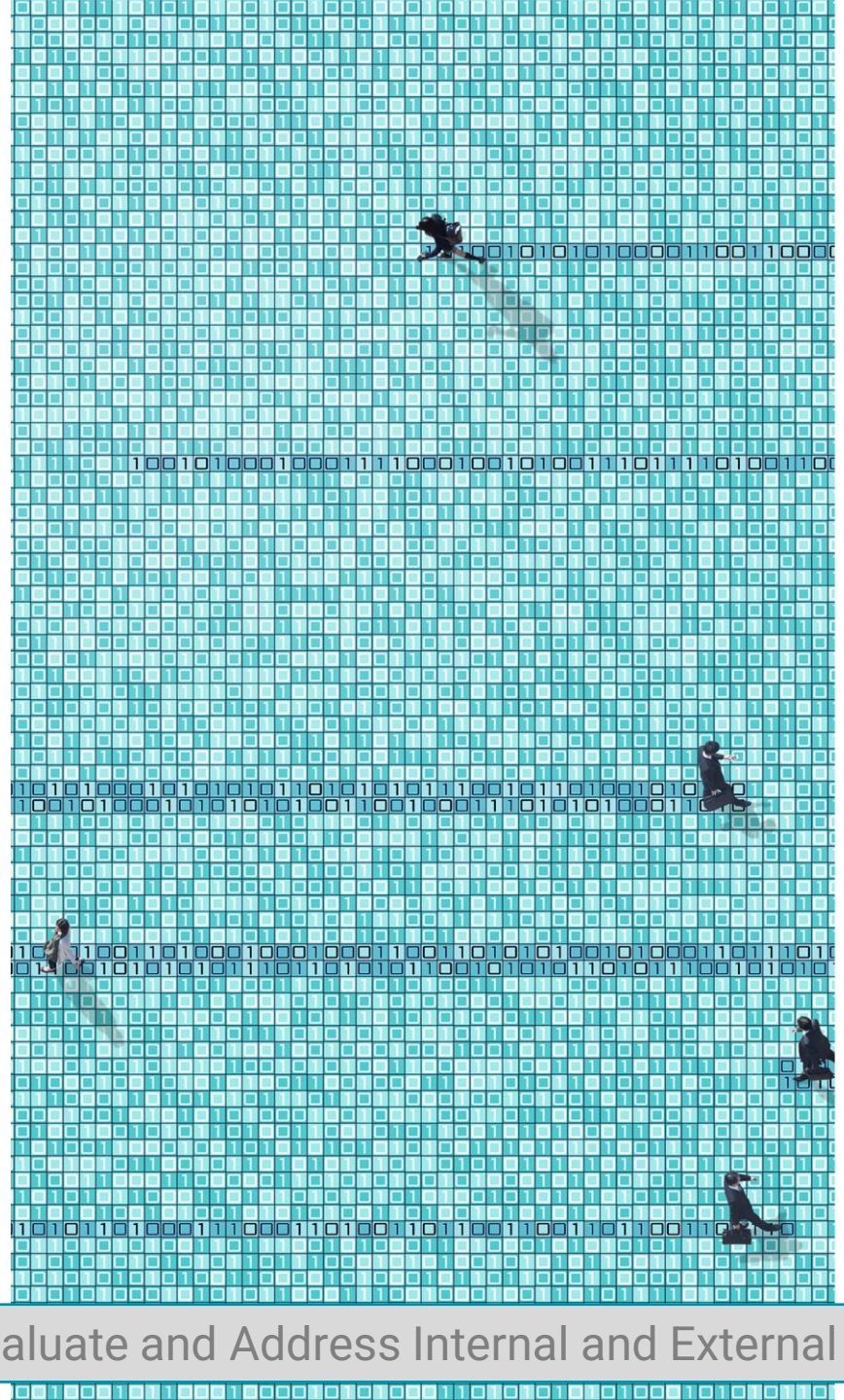
Change Control Boards

Backlog Reprioritization

Product Owner Duties

Release Planning

Governance



Internal Business Environment

- ✓ **Organizational changes** can make a dramatic impact on the **scope** of a project.
- ✓ The **project manager** and **project sponsor** need to have visibility into business plans, reorganizations, process changes, and other internal activities.
- ✓ Because internal business changes might cause:
  - Need for new deliverables
  - Reprioritization or removal of existing deliverables

Get to Know the External Business Environment

The PESTLE acronym identifies the external business environment factors that can **affect the value and desired outcomes** of a project.

Others are:

- ✓ **TECOP** (technical, environmental, commercial, operational, political)
- ✓ **VUCA** (volatility, uncertainty, complexity, ambiguity)

These frameworks can help you to better understand external factors that can introduce **risk, uncertainty, or provide opportunities**.

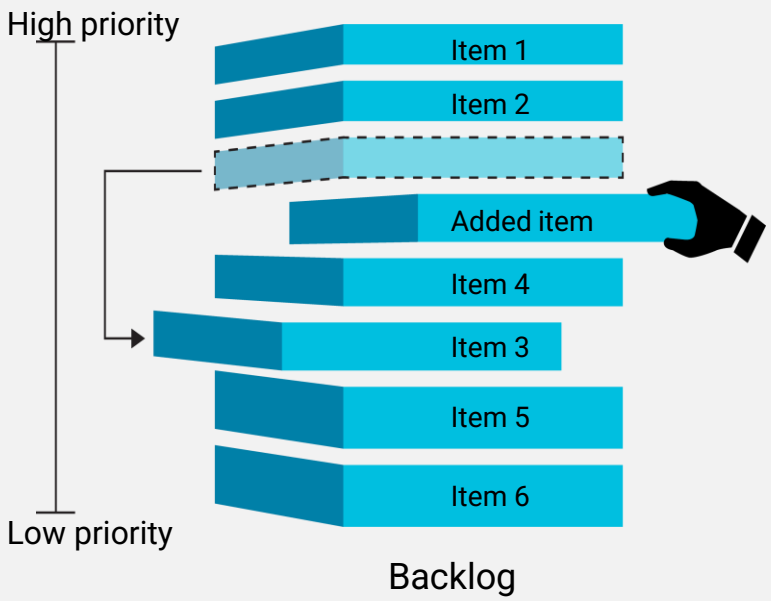
Update Baselines

- ✓ In traditional project plans, the **completed initial plan** contains the baseline.
- ✓ As changes occur in the project, you **update** the baseline to reflect any **new requirements**.
- ✓ Agile projects process change continuously, in iterations or increments. Work is prioritized and updated in the **product backlog** or in the **value stream** (Disciplined Agile).

Backlog Reprioritization

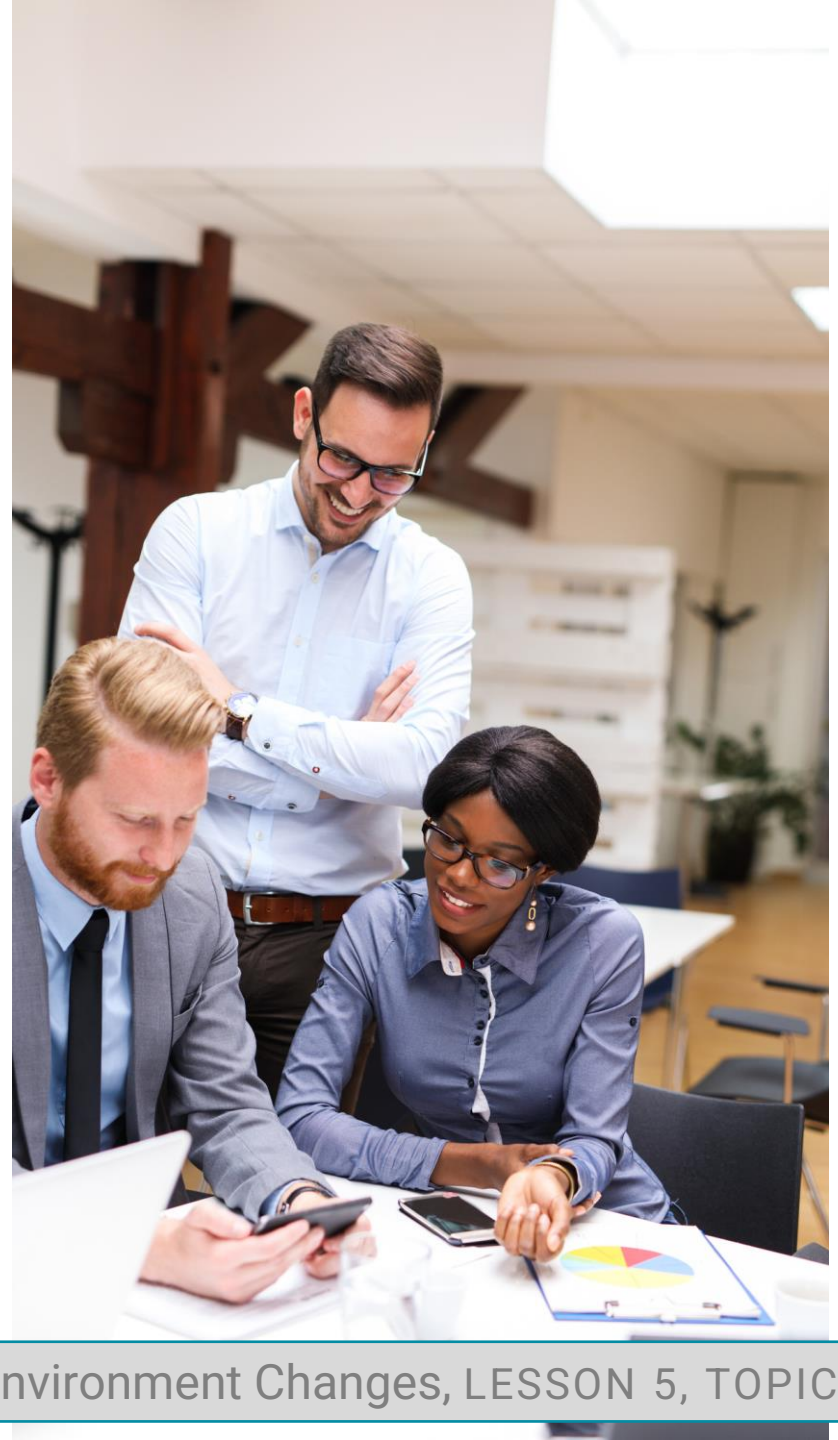
Product owner **re-prioritizes** the backlog as stories or requirements change.

Business value determines the priority of the changes.



Recommended Options for Changes

- ✓ When change is proposed, the product owner should **focus on the intended business value** of the change.
- ✓ Give the **project team** discretion to consider the change and **identify potential solution options**.



A **clear governance structure** becomes critical when project changes are driven by changes in the internal or external business environments.

Governance Steering Committee

- ✓ 'The Project Board' or overall governance or steering committee that coordinates the project:
- ✓ Might include: the project sponsor, a senior user, and PMO resources.
- ✓ Are responsible for:

  Clarifying the **project charter and objectives**; and **allocating resources** to the project.

GUIDELINES

Assessing the Impact on Project Backlog Based on Business Environment Changes

- Understand the project's organizational context.
- Understand the external factors that may impact your project.
- How is the project work prioritized?
- What is the project governance model?

Evaluate and Address Internal and External Business Environment Changes, LESSON 5, TOPIC C

Support Organizational Change

TOPIC D

Deliverables and Tools

Change Management Plan

Roll Out Plan

Training Plan

Training Artifacts

Project Management Plan updates

EEFs

OPAs

Demos

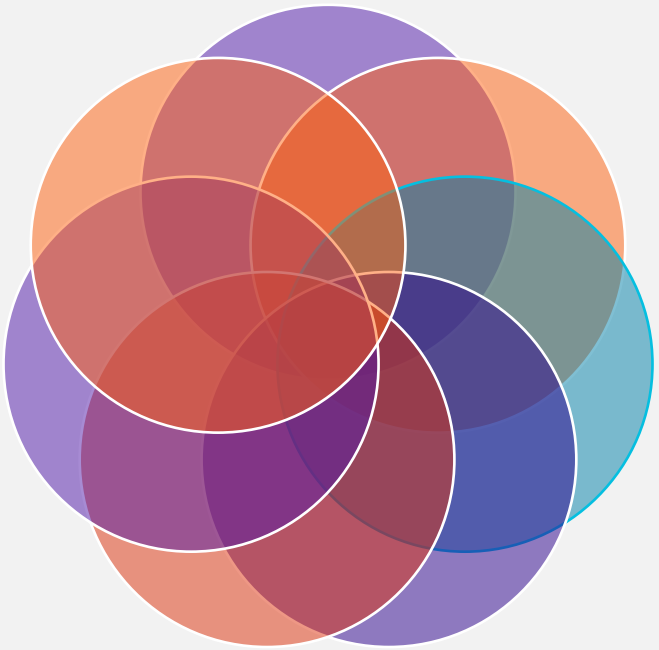
PM / PMO org structures

Organizational Cultures and Styles

View of leadership, hierarchy and authority

Motivation and reward systems

Shared vision, beliefs & expectations

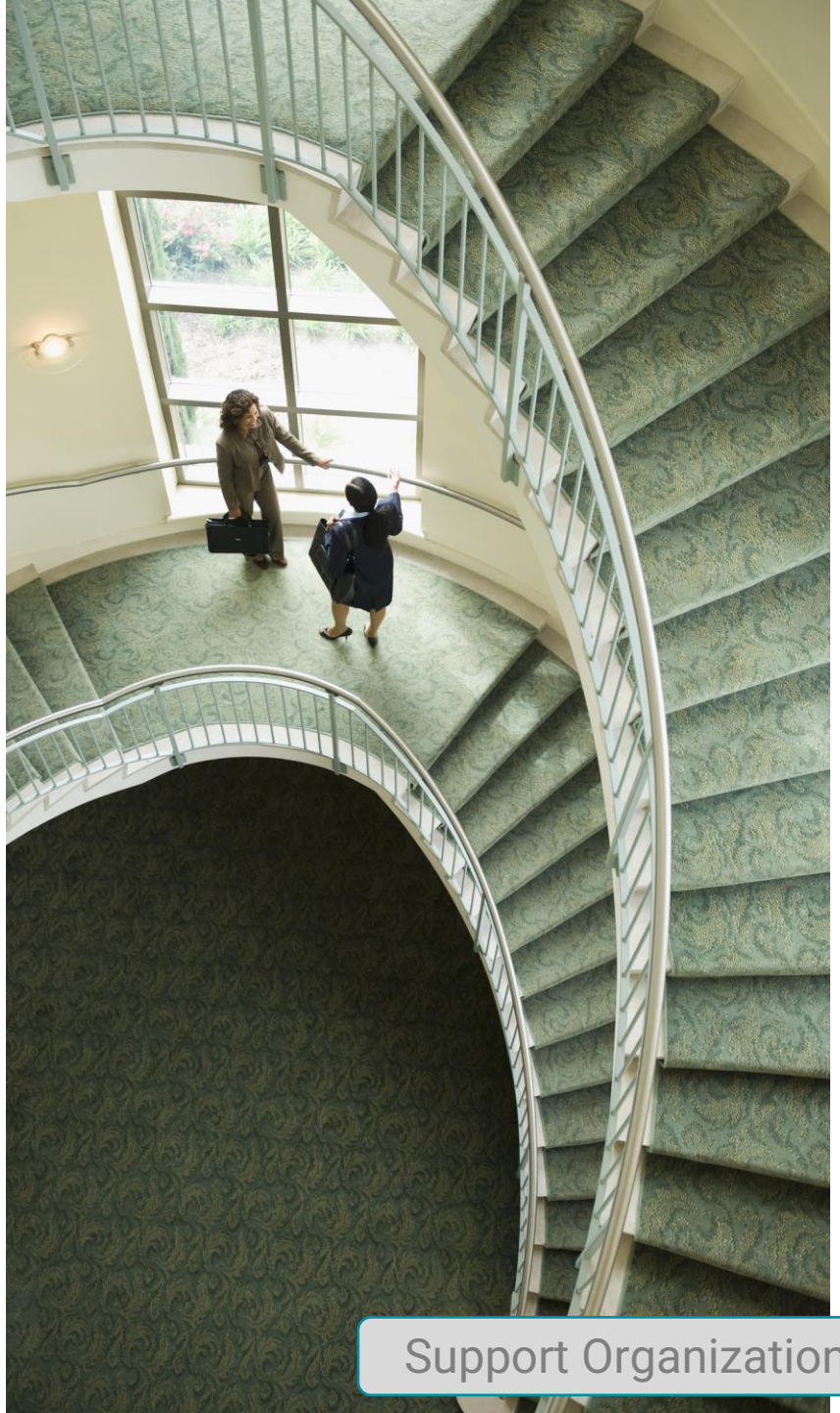


Operating Environments

Risk tolerance

Code of conduct

Regulations, policies and procedures



Organizational Structures

- ✓ Affect **resource availability**
- ✓ Affect how projects are **conducted**
- ✓ Main structures include **functional**, **project-oriented**, **matrix**, and **composite.**

Relative Authority in Organizational Structures

Consider your authority relative to the functional manager's authority over the project and the project team.

Relationship	Functional	Matrix	Project-oriented
Team members are loyal to	Functional department	Conflicted loyalty	Project
Team members report to	Functional manager	Both functional manager and project manager	Project manager
Project manager's role is	Part-time	Full-time	Full-time
Team members' role is	Part-time	Part-time	Full-time
Control of project manager over team members is	Low	Medium	High

Roll Out Plan

- ✓ You need to plan for successful implementation of changes.
- ✓ Roll out plans enable you to define the knowledge transfer, training, and readiness activities required to implement the change.
- ✓ Depending on the size, scope, and nature of the change, the plan details might include:
  - The Project team and the affected customer and users
  - Training and support activities

Project Management Plan Updates

Based on the scope of changes, you may need to **update the project management plan** for:

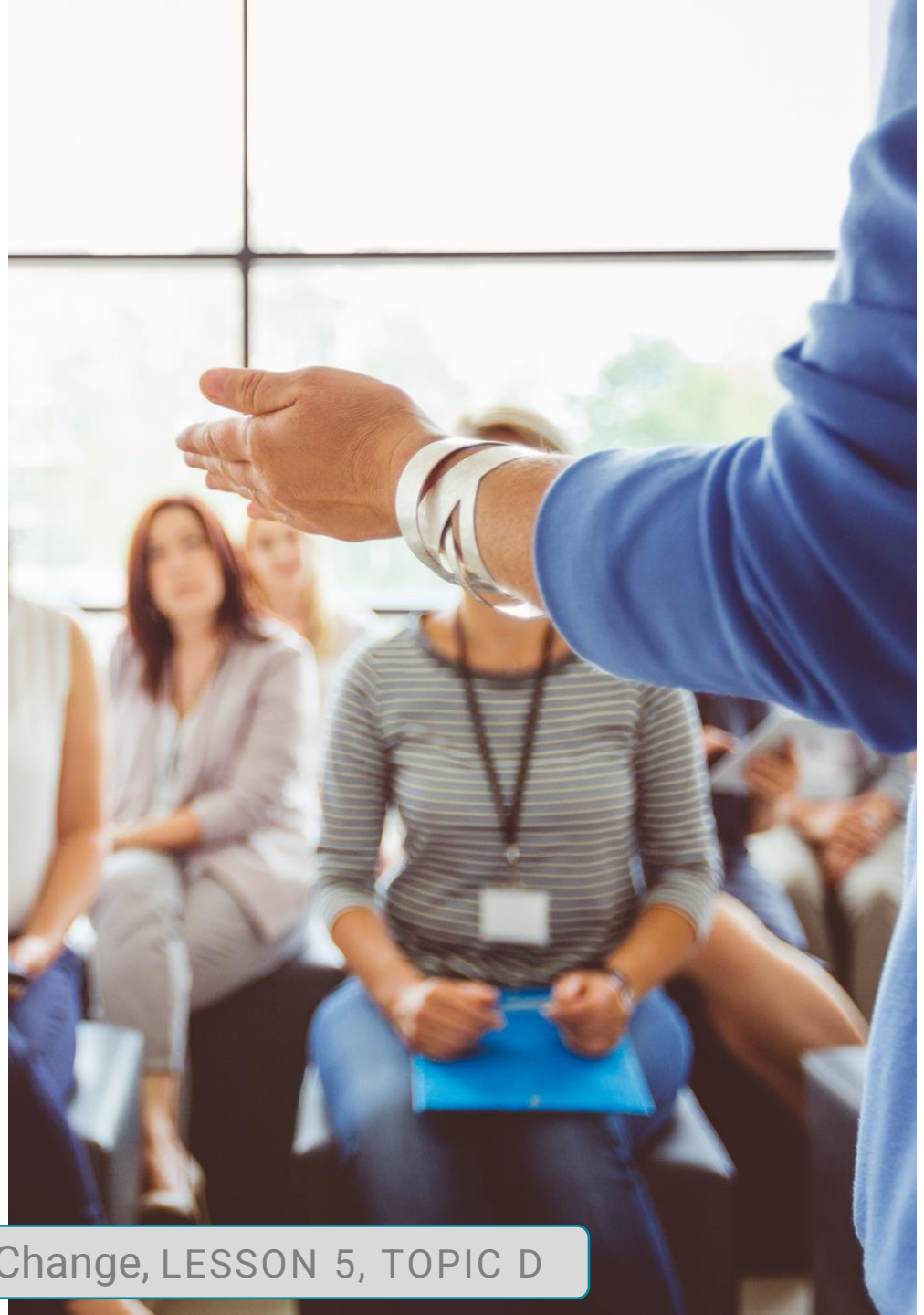
- ✓ Scope
- ✓ Timelines
- ✓ Work packages
- ✓ Team member assignments

In **agile** projects, the team might remove lower-value deliverables from scope to make room for the change.

Training Plan

Changes to the project plan that will likely impact the training plan:

- ✓ Scope of the training and knowledge transfer required
- ✓ Roles and responsibilities of the stakeholders
- ✓ Timelines



Training Artifacts

Changes to the plan and deliverable set requires changes to the training artifacts, including:

- ✓ Training courseware
- ✓ Lab configurations and exercises
- ✓ Knowledge requirements and potentially credentials, if certification of skills is expected
- ✓ Updates for the trainers to gain the necessary knowledge transfer required to deliver the updated training

Whether in-house or outsourced, you have to ensure these changes to training are made.

Demos

- ✓ Changes to **software solutions** may require demonstration of changed configurations, processes, workflows, and roles and responsibilities.
- ✓ **Key customer and user stakeholders** need to review the demo and provide feedback to ensure the changes work as intended and do not impact the workflow of the solution.
- ✓ Early feedback allows for adaptation, while the feedback is immediately relevant and should **improve the quality of the change** while **reducing overall cost and risk**.

GUIDELINES

Recommend, Plan, and Facilitate Change (Part 1 of 2)

- Establish a **single change request method** which includes:
  - A description of the proposed change
  - The business value of the change
  - Any risk and risk mitigation recommendations
  - Likely cost of the change
- Ensure that a CCB can assess the change cost, risk, and value, other potential impacts to the project, and make recommendations.
- Check the project's tolerance – can you can approve the change or do you need to escalate it to the governing board for review and approval?

Support Organizational Change, LESSON 5, TOPIC D

GUIDELINES

Recommend, Plan, and Facilitate Change (Part 2 of 2)

- Follow **organizational change management** best practices:
  - Build a compelling case for change
  - Get buy-in and commitment of key stakeholders
  - Communicate the change vision
  - Enable other stakeholders to engage
- Ensure changes are properly aligned and updates are made to relevant project artifacts – i.e. project plan, training plans, training artifacts, and software configurations or demos.

Support Organizational Change, LESSON 5, TOPIC D

Employ Continuous Process Improvements

TOPIC E

Deliverables and Tools

Processes and standards

Quality Theory methods

CI approaches

Lessons learned

Retrospectives

Experiments

Continuous Improvement

- ✓ Aim for small, incremental improvements or large breakthroughs.
- ✓ A business strategy that is developed at the organizational level for projects to adopt and use.
- ✓ Might be implemented by an organization's PMO.

Culture of Continuous Improvement

W. Edwards Deming's philosophy of improving quality aims to reduce expenses, increase productivity, and thus increase market share.

Be guided by these four concepts:

- ✓**Better design** of products to improve service.
- ✓**Higher level** of uniform product quality.
- ✓**Improvement** of product testing in the workplace and in research centers.
- ✓**Greater sales** through global markets.

Further Study in Quality Theory Methods

Approaches by industry thought leaders can help you understand how to improve business results.

Six Sigma - respond to customer needs and improving processes by systematically removing defects.

William Smith, Jr.

Four absolutes: conforming to requirements, quality achieved by prevention, standard of zero defects, and quality measured by determining CoQ.

Philip B. Crosby

Continuous process improvement in which quality must be continuously improved to meet customer needs

W. Edwards Deming

Break quality management into quality planning, control and improvement

Joseph M. Juran

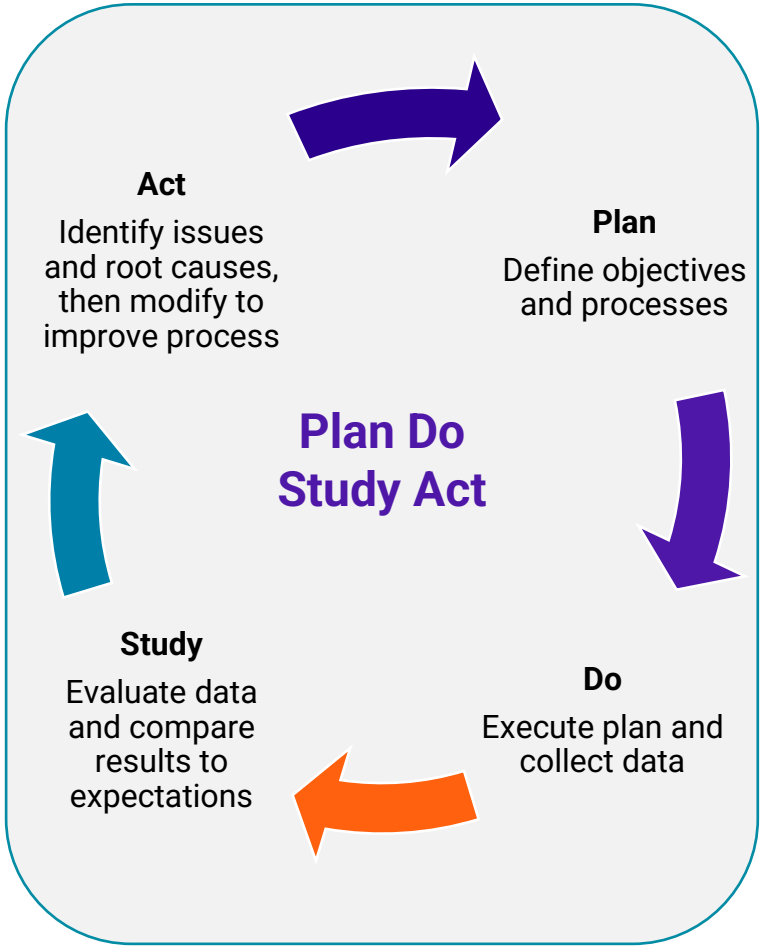
Design quality into the product so factors that cause variation can be identified and controlled.

Genichi Taguchi

Continuous Improvement Approaches

Kaizen

- ✓ Many small changes or improvements.
- ✓ Small changes less likely to require major expenditures of capital.
- ✓ Ideas come from workers—not expensive research, consultants, or equipment.
- ✓ All employees should continually improve their own performance.
- ✓ All are encouraged to take ownership of their work to improve motivation.



Continuous Improvement Tools

Lessons Learned Register is an important component of each project.

- Use it as a source of improving the processes in other projects.
- Avoid filing it away at the end of a project and not referring to it.

Retrospectives:

- Common in agile projects at the end of each iteration.
- Helps the team look back at an iteration and plan improvements for the next one.

Experiments provide a way to improve team efficiency and effectiveness:

- Some techniques include A/B testing and team feedback to identify improvements.
- Perform experiments one at a time to isolate the results.

Update to Process and Standards

- ✓ Lessons learned at the project level can apply to the **organization's continuous improvement process**, in addition to the project management processes.
- ✓ Escalate these lessons and evaluate them for consideration at the organizational level.

GUIDELINES

Execute Continuous Improvement Steps

- Review the organization's continuous improvement strategy.
- Develop a continuous improvement approach for your project, keeping in mind the project goals and the expectations of the stakeholders.
- Use lessons learned from your project and other projects—as sources of continuous improvement.
- For agile projects, use retrospectives to improve the next iteration.
- Use lessons learned at the project level to improve the organization's continuous improvement process.

Employ Continuous Improvements, LESSON 5, TOPIC E

BONUS SKILLSOFT TOPIC!
OVERVIEW OF AGILE AND SCRUM

THE AGILE MANIFESTO

In 2001, seventeen software developers met at a resort in Snowbird, Utah to discuss existing software development methods, among others Jeff Sutherland, Ken Schwaber, Jim Highsmith, Alistair Cockburn, and Bob Martin. Together they published the *Manifesto for Agile Software Development*.

The Four Values of the Agile Manifesto

We are uncovering better ways of developing software by doing it and helping others to do it. Through this work we have come to value:

1. **Individuals and interactions** over processes and tools
2. **Working software** over comprehensive documentation
3. **Customer collaboration** over contract negotiation
4. **Responding to change** over following a plan

There is value in all of these, but we value the items in **bold** more.

THE 12 CLARIFYING PRINCIPLES

- Our highest priority is to satisfy the customer through early and continuous delivery of valuable software
- Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage.
- Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.
- Business people and developers must work together daily throughout the project.
- Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done.
- The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.
- Working software is the primary measure of progress.
- Agile processes promote sustainable development. The sponsors, developer, and users should be able to maintain a constant pace indefinitely.
- Continuous attention to technical excellence and good design enhances agility.
- Simplicity – the art of maximizing the amount of work not done – is essential.
- The best architectures, requirements, and designs emerge from self-organizing teams.
- At regular intervals, the team reflects on how to become more effective., then tunes and adjust its behavior accordingly.

AGILE METHODOLOGIES

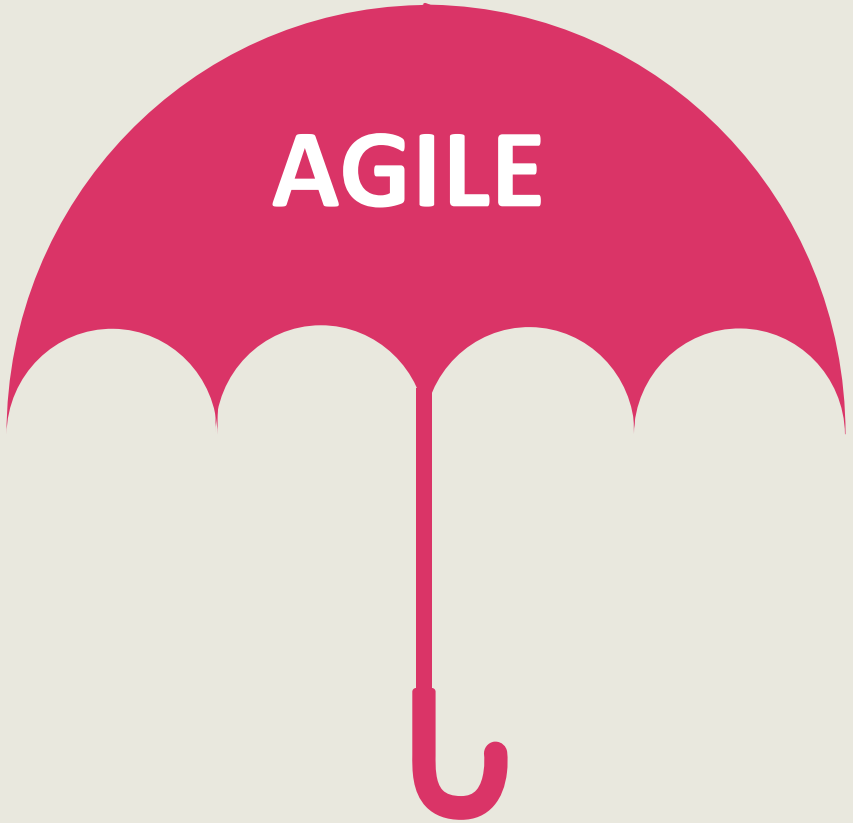
There are over a dozen agile methodologies

No single right way

Can be tailored once a team is experienced

Most common

- Scrum (really a framework)
- Disciplined Agile
- Extreme Programming (XP)
- Lean product development
- Kanban
- Feature-driven development (FDD)
- Dynamic Systems Development Method (DSDM)
- Crystal



SCRUM

- Framework rather than a methodology
- Scrum is one of many Agile approaches
- Can be applied to any industry
- Employs various techniques
- High-performing cross functional teams
- Iterative, incremental approach
- Iterations are known as “Sprints”

The term “Scrum” comes from rugby.

A scrum (short for scrummage) is a method of restarting play. The players pack closely together with their heads down and attempt to gain possession of the ball.

THREE PILLARS OF EMPIRICISM

- **Transparency**
  - Discuss product requirements
  - Establish shared product vision
  - Create a Definition of Done
- **Inspection**
  - Assess productivity during Daily Scrum
  - Burn-down chart
  - Demonstrate product increment during Sprint Review
  - Objective assessment based on Acceptance Criteria and Definition of Done
- **Adaptation**
  - Welcome change
  - React quickly to variance in order to meet Sprint goal
  - Sprint Retrospective promotes continuous improvement

THE SCRUM TEAM

Includes:

Developers

Scrum Master

Product Owner

Developers

Scrum Master

Product Owner

PRODUCT OWNER

- Develops product vision
- Serves as voice of the stakeholders (liaison)
- Collects requirements from stakeholders
- Determines value of features
- Prioritizes backlog items based on value
- Controls the budget
- Oversees return on investment
- Validates product quality

Product Owner

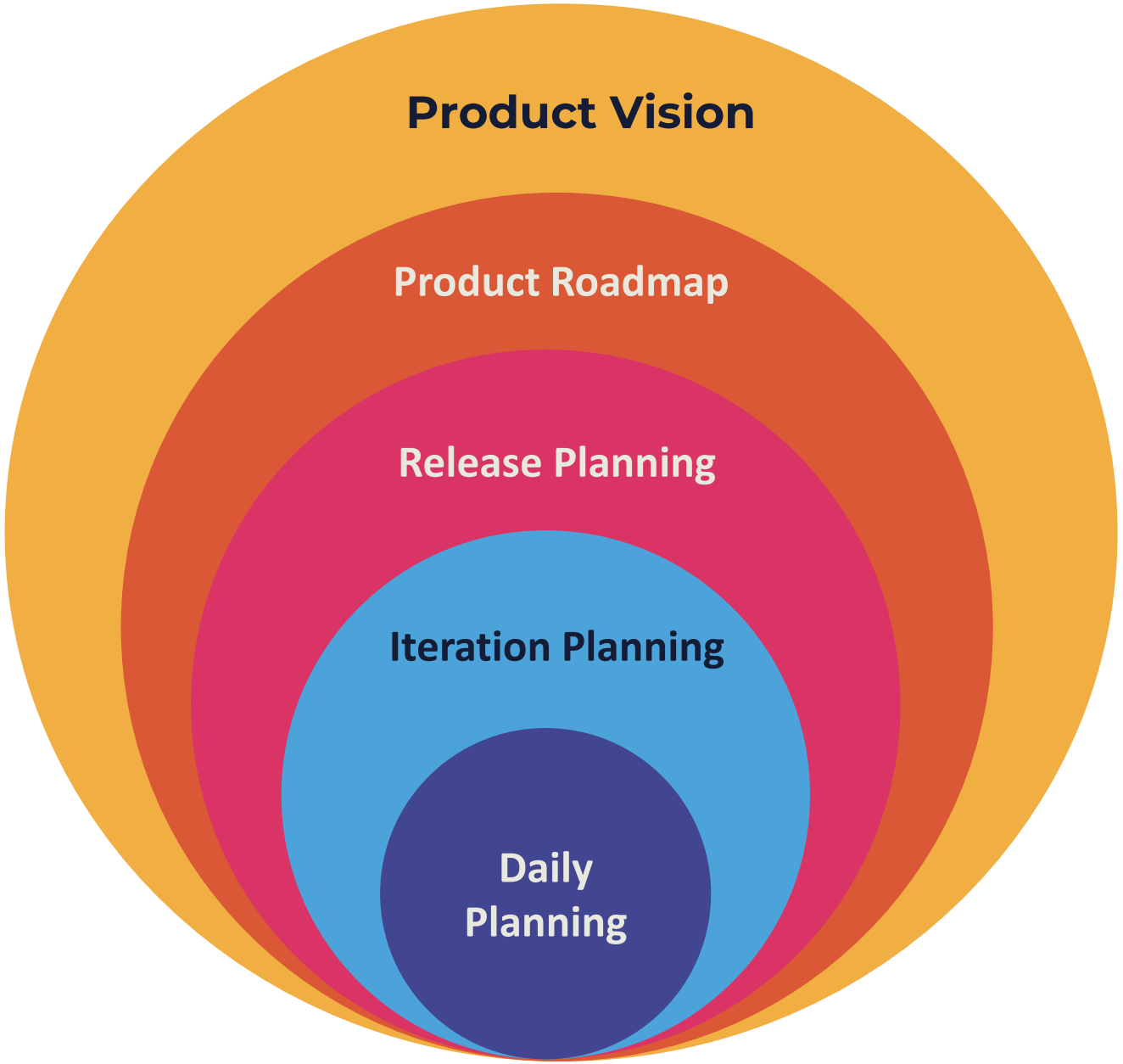
Stakeholders

DEVELOPERS

- Also known as the Development Team
- Self-organized
- Builds the product increments during each Sprint
- Estimates the work
- Decides what can be done during each Sprint
- Cross-functional
- Includes all skillsets such as “QA” or “Tester”
- Every necessary skillset is represented

SCRUM MASTER

- Servant leader to Developers
- Ensures adherence to Scrum framework and roles
- Facilitates meetings
- Removes impediments (roadblocks, blockers)
- Serves as a buffer to prevent interruptions
- Provides essential tools and resources
- Coaches other team members
- Assists Product Owner with managing backlog
- Serves as Scrum “ambassador” to the organization



LEVEL OF DETAIL

CREATING THE PRODUCT VISION

- Interview stakeholders
- Focus on how a product adds value
- Motivates Developers

PRODUCT VISION

Why you're building a product

Benefits of product

Who you're building it for

Why you are positioned to develop it

Since scope is evolving it is important to share an understanding of what is being created

Product Box – Collaboration Game

Technique used to explain an overarching solution.

Stakeholders try to **describe aspects of a solution** in the same way a marketer might describe **product features** and **benefits** on a box.

Helps with understanding:

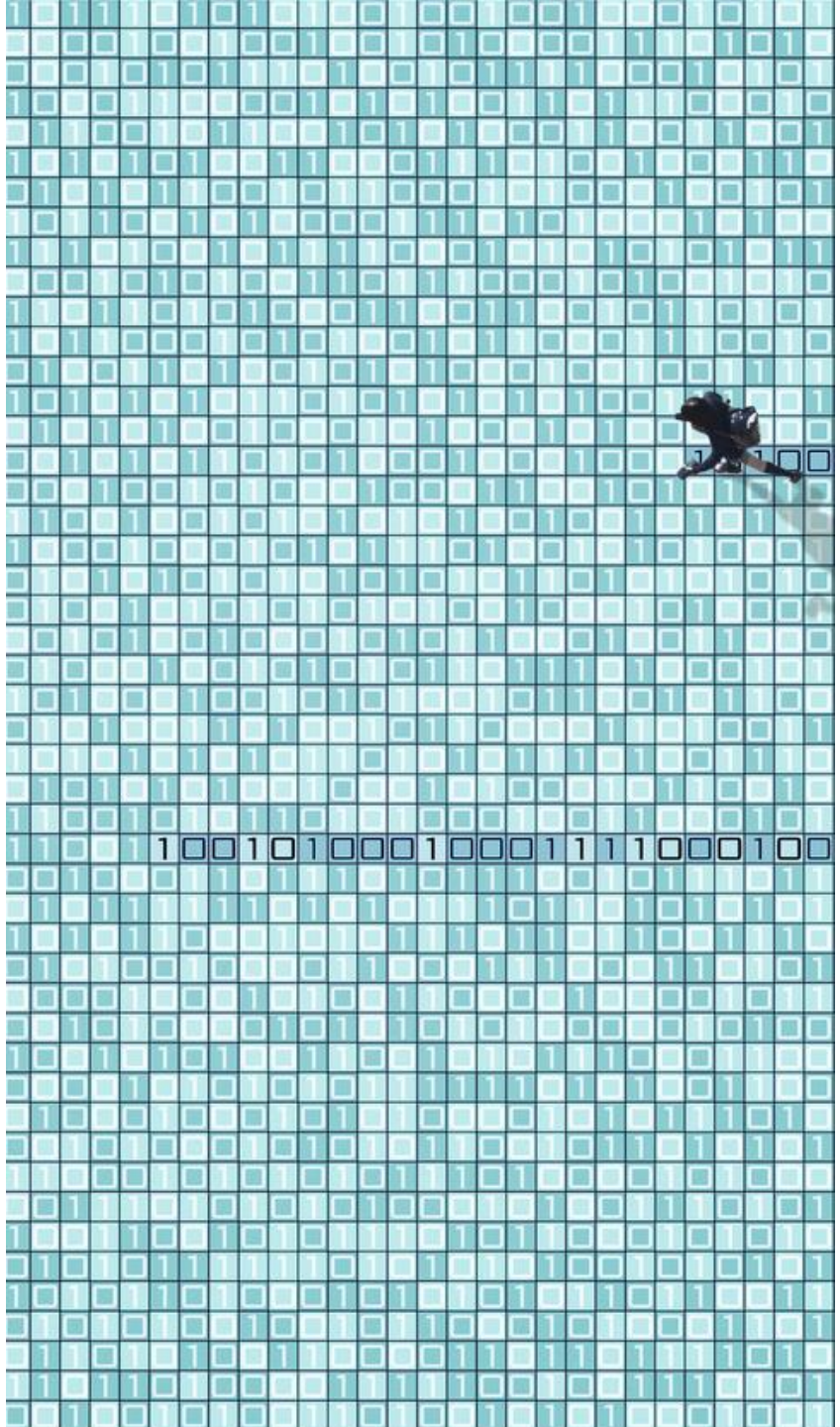
- ✓ Different types of users of a solution
- ✓ Their priorities and likes/dislikes
- ✓ Key aspects of a solution that drive the most critical value aspects

XP Metaphor

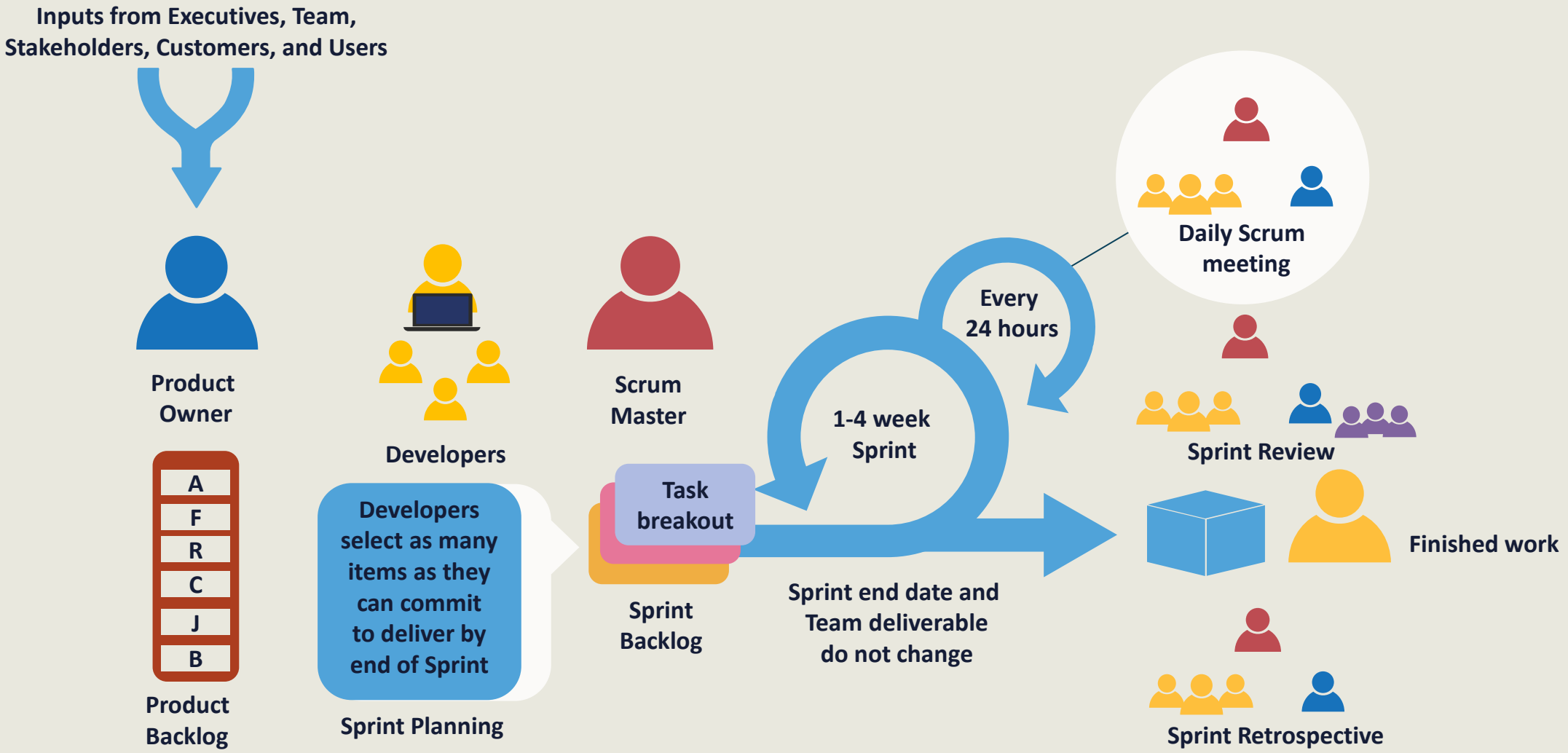
Metaphor is an Extreme Programming (XP) technique that **describes a common vision** of how a program works.

Metaphors should be simple and non-technical.

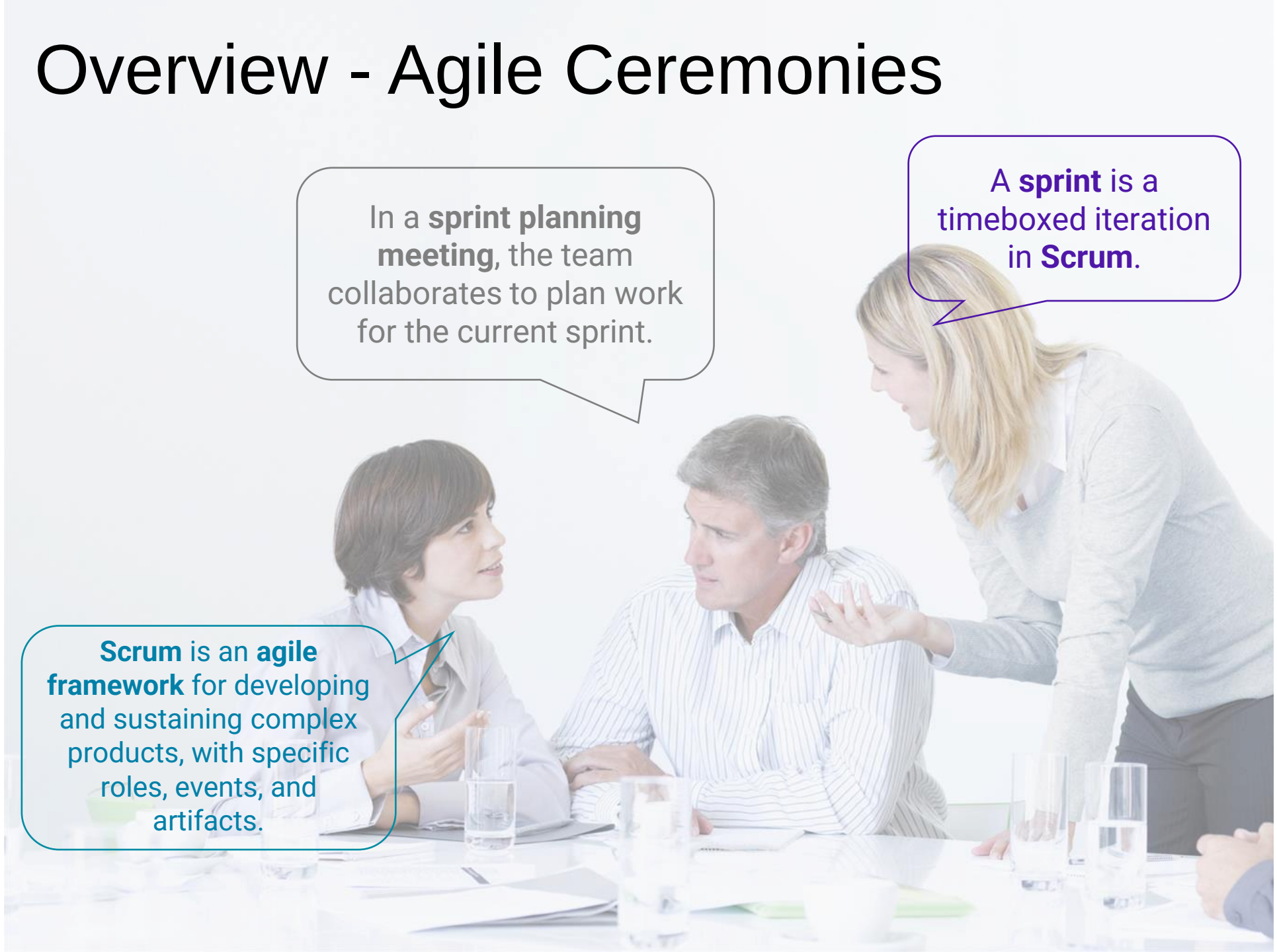
Enables the team to understand the overarching approach that is being taken to provide a capability or solve a problem.



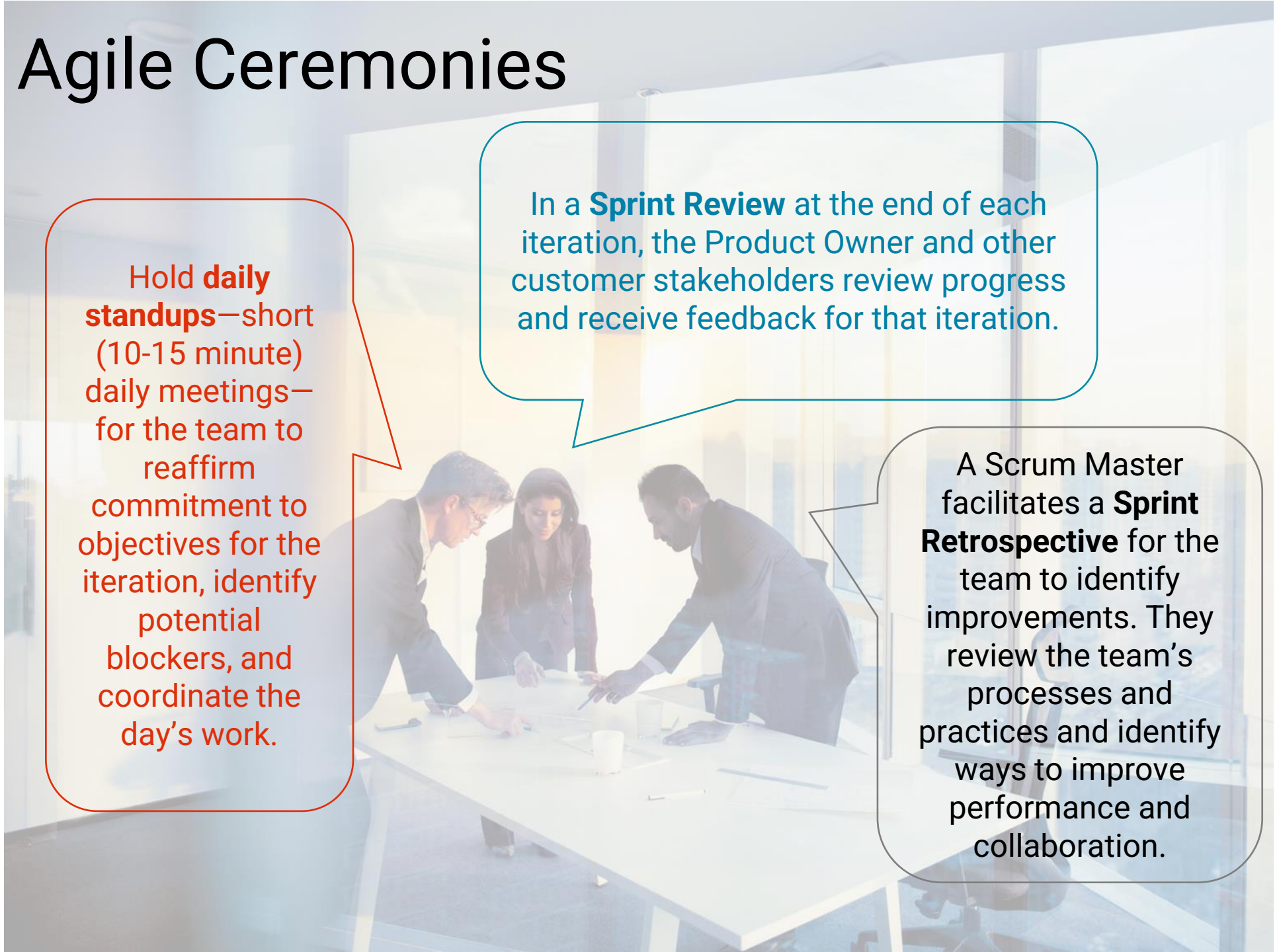
SCRUM FRAMEWORK



Overview - Agile Ceremonies



More Agile Ceremonies



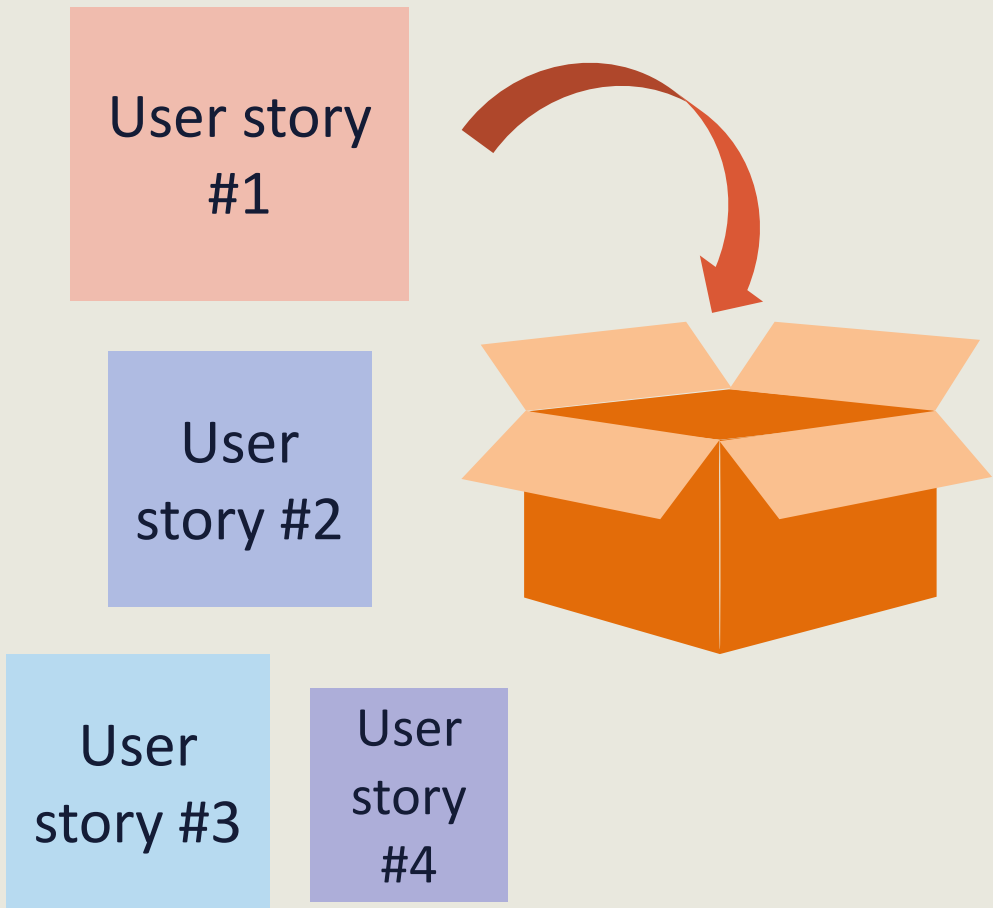
Hold **daily standups**—short (10-15 minute) daily meetings—for the team to reaffirm commitment to objectives for the iteration, identify potential blockers, and coordinate the day's work.

In a **Sprint Review** at the end of each iteration, the Product Owner and other customer stakeholders review progress and receive feedback for that iteration.

A Scrum Master facilitates a **Sprint Retrospective** for the team to identify improvements. They review the team's processes and practices and identify ways to improve performance and collaboration.

TIME BOXING

- Each Scrum event has maximum time allotted
  - Ex: 2-week Sprint
- User stories are estimated
  - Planned into the iteration
  - If it doesn't fit it has to wait
- Tool for completing work



USER STORIES

Short, simple descriptions of a feature

Told from the user's perspective

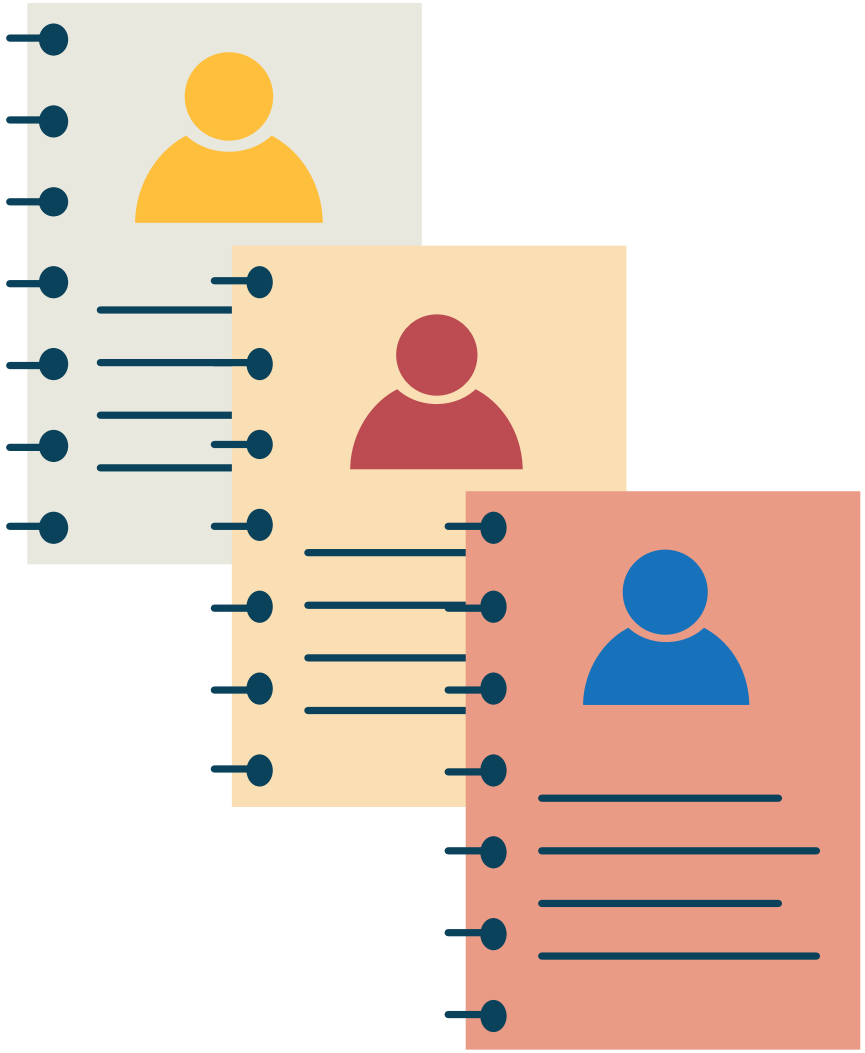
When large or complex, can be called "epics"

Sentence structure:

"As a *role*, I want *functionality*, so that *business benefit*."

Example:

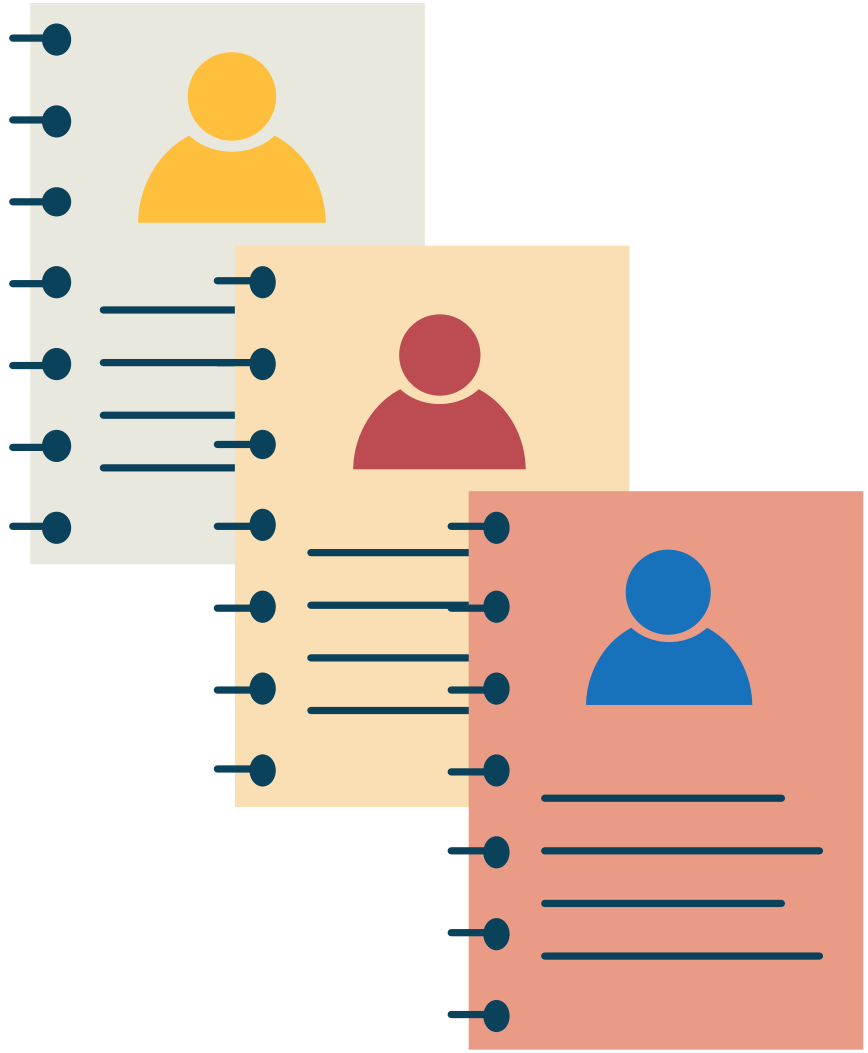
"As a customer, I want my credit card information to be stored, so that I save time when checking out."



FORMATTING USER STORIES

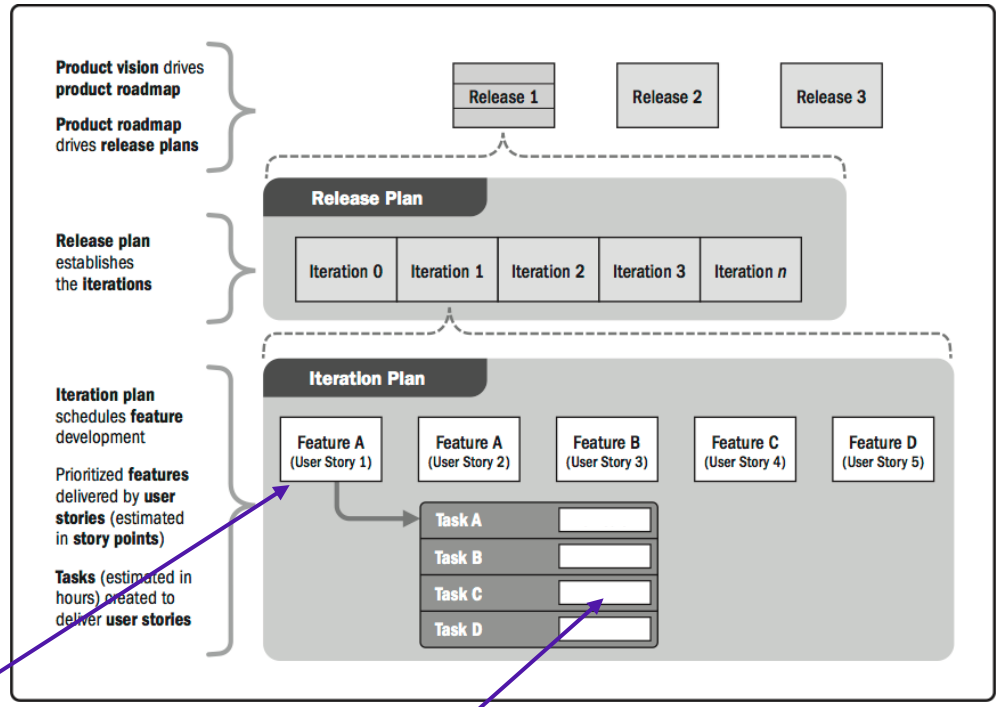
INVEST criteria

- Independent
- Negotiable
- Valuable
- Estimable
- Small
- Testable



User Stories

- ✓ Help teams focus on that value provided to the user.
- ✓ Suggest who will benefit from the work and how.
- ✓ Driven by description instead of technical specifications to give holistic view



User Story

Story Points

More about...

Course: Supporting Agile Team Performance (2021 Update)
Video: User Stories and Personas (3:49 run time)

Features and Epics

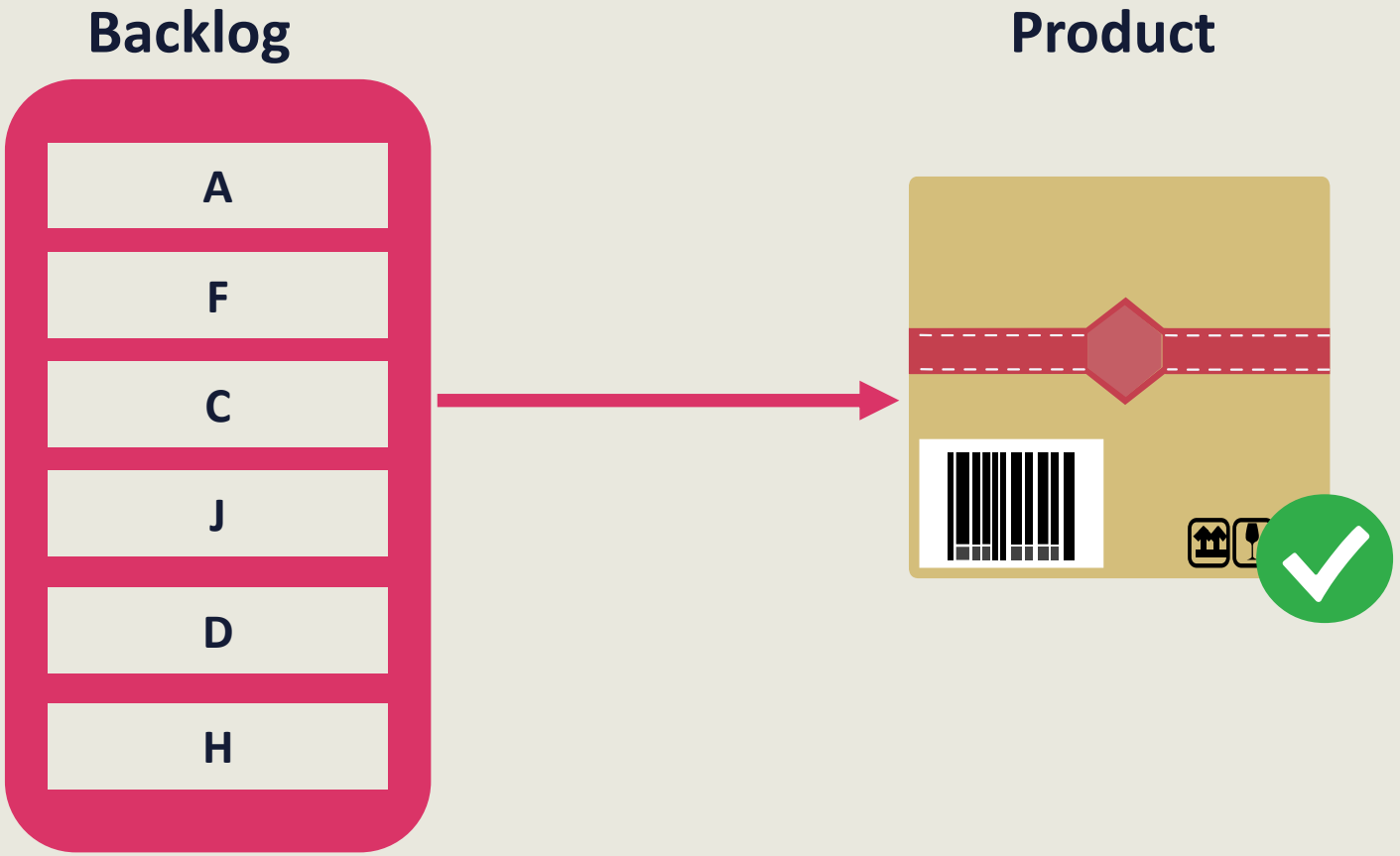
- ✓ Usually described as a short phrase. This term groups related functionality together to deliver business value.
- ✓ Includes activities and efforts such as documentation, bug fixes, testing, and quality/defect repairs.
- ✓ Delivers the capability that can be estimated, tracked, and managed as a set.
- ✓ Epics are responsible for producing a major deliverable, which may include various Agile features, for example.

Working with Features

- ✓ Scheduling aligned to features ensures associated work is coordinated.
- ✓ Estimating features offers visibility to when blocks of functionality can be released to the business and end users.
- ✓ Progress can be measured by drawing a ratio of accepted to remaining features.

PRODUCT BACKLOG

- Prioritized list of everything that is needed in the product
- All work should be included
  - Bug fixes
  - Security features
  - Changes
- Single source of product requirements
- Always changing
- Items are added, dropped, and reprioritized based on value
- The product is built incrementally based on work selected from the backlog

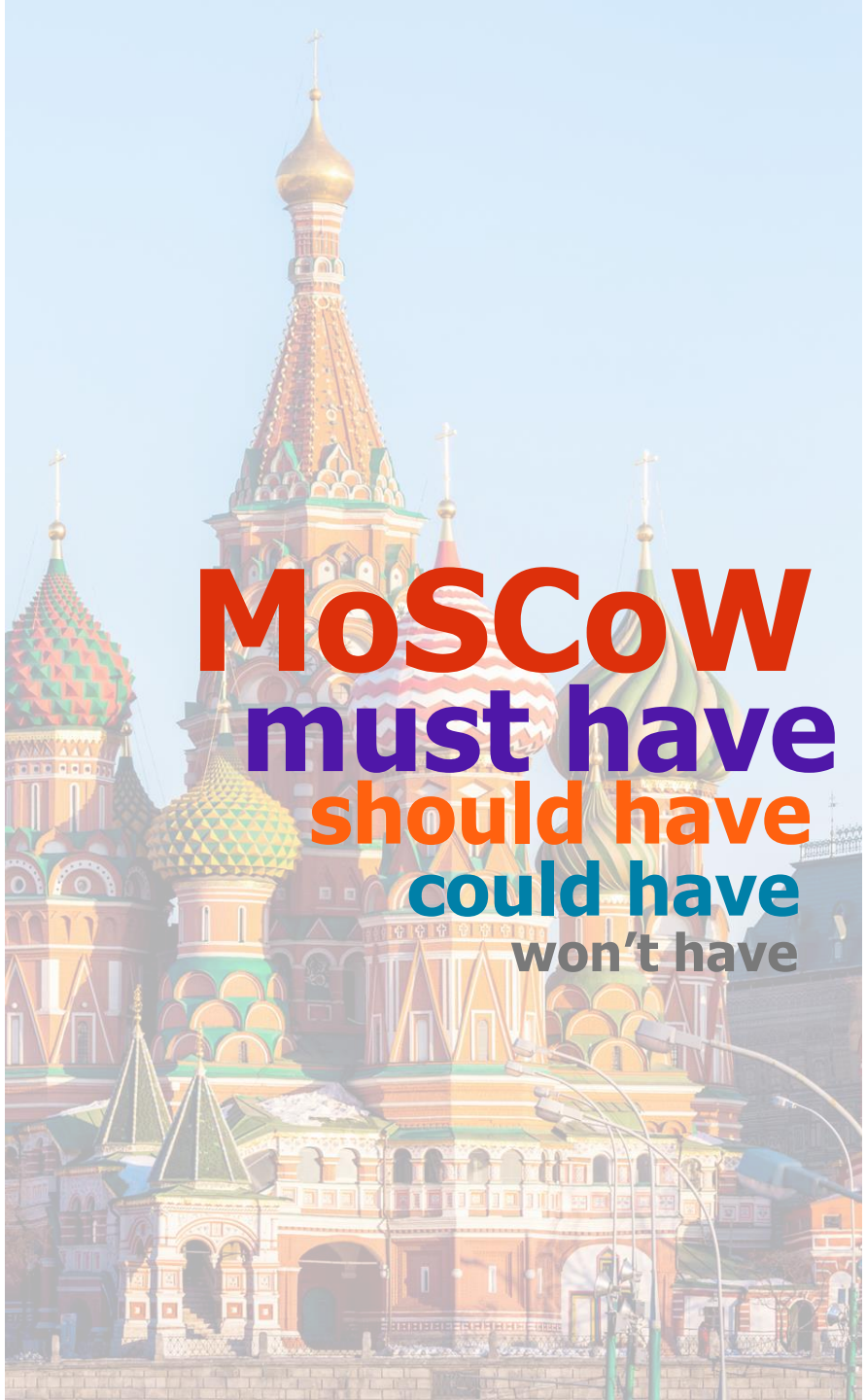


Prioritization Techniques to Determine Objectives

Use appropriate methods to learn the order of work that needs to be done.

These can include:

- ✓ Review product backlog
- ✓ Kano Model
- ✓ MoSCoW (MSCW) Analysis
- ✓ Paired Comparison Analysis
- ✓ 100 Points Method

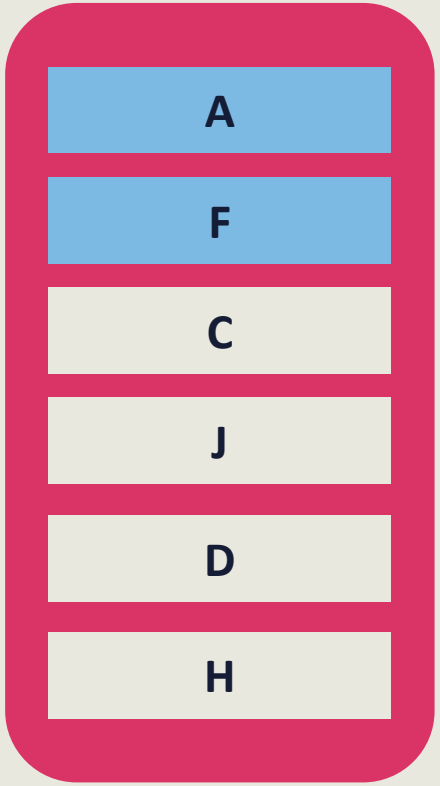


More about...

Course: Deep Dive into the Project Scope (2021 Update)
Video: Agile Approach to Prioritizing Requirements (5:24 run time)

PRODUCT INCREMENT

- The result of the latest sprint
- Demo during sprint review
- Must meet the “definition of done” established during planning
- Incomplete work is not demonstrated

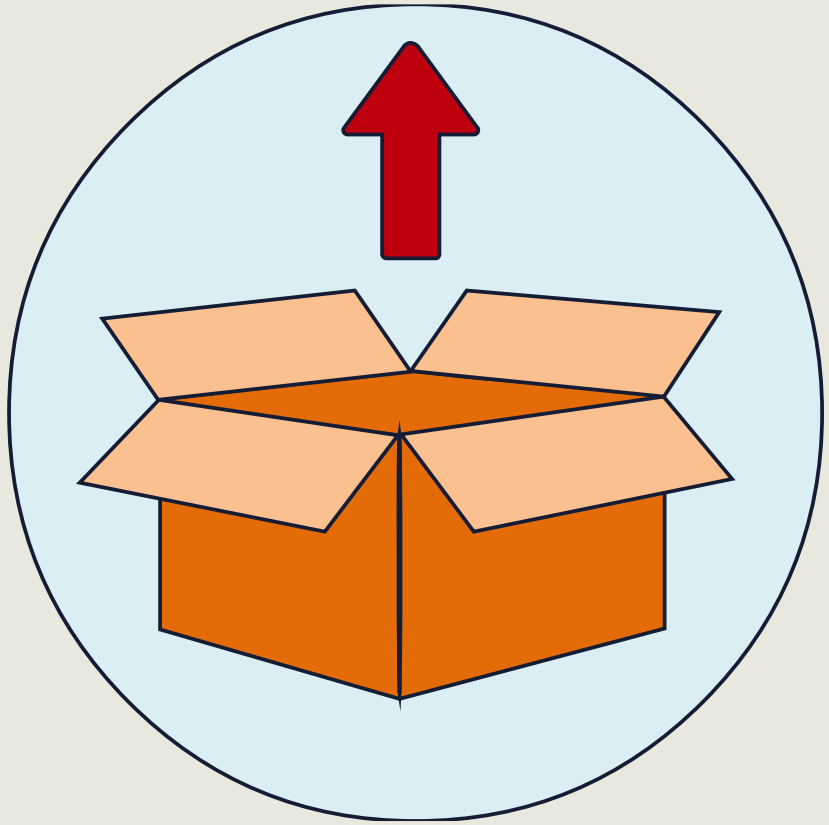


SMALL RELEASES

Demonstrates progress

Increases visibility to the customer

Smaller increments means rapid deployments



MASTERY BUILDER

Who is regarded as the father of the continuous improvement movement?

- ❑ Crosby
- ❑ Deming
- ❑ Juran
- ❑ Smith

Creating a high performing team

MASTERY BUILDER

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Creating a high performing team

MASTERY BUILDER

The methodology used to systematically test possible solutions, assess the results, and implement those that work is known as which of the following?

- ❑ Kaizen
- ❑ Continuous improvement
- ❑ Plan Do Study Act
- ❑ Retrospective

Creating a high performing team

MASTERY BUILDER

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Creating a high performing team

MASTERY BUILDER

What is the aim of a retrospective?

- ❑ To brainstorm problems.
- ❑ To identify who is not helping on the team.
- ❑ To look back at all the work that was not completed.
- ❑ To identify what went well and what can be improved.

Creating a high performing team

MASTERY BUILDER

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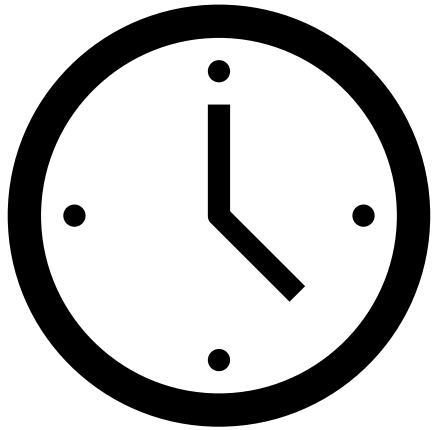
Creating a high performing team

1-Hour Break!



Class resumes at 2:30pm Eastern Time