PROJEX ACADEMY

PRINCE2®
7th Edition
Agile
Exam Cram

PRINCE2®

Agile Exam Cram

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Table of Contents

The delivery method

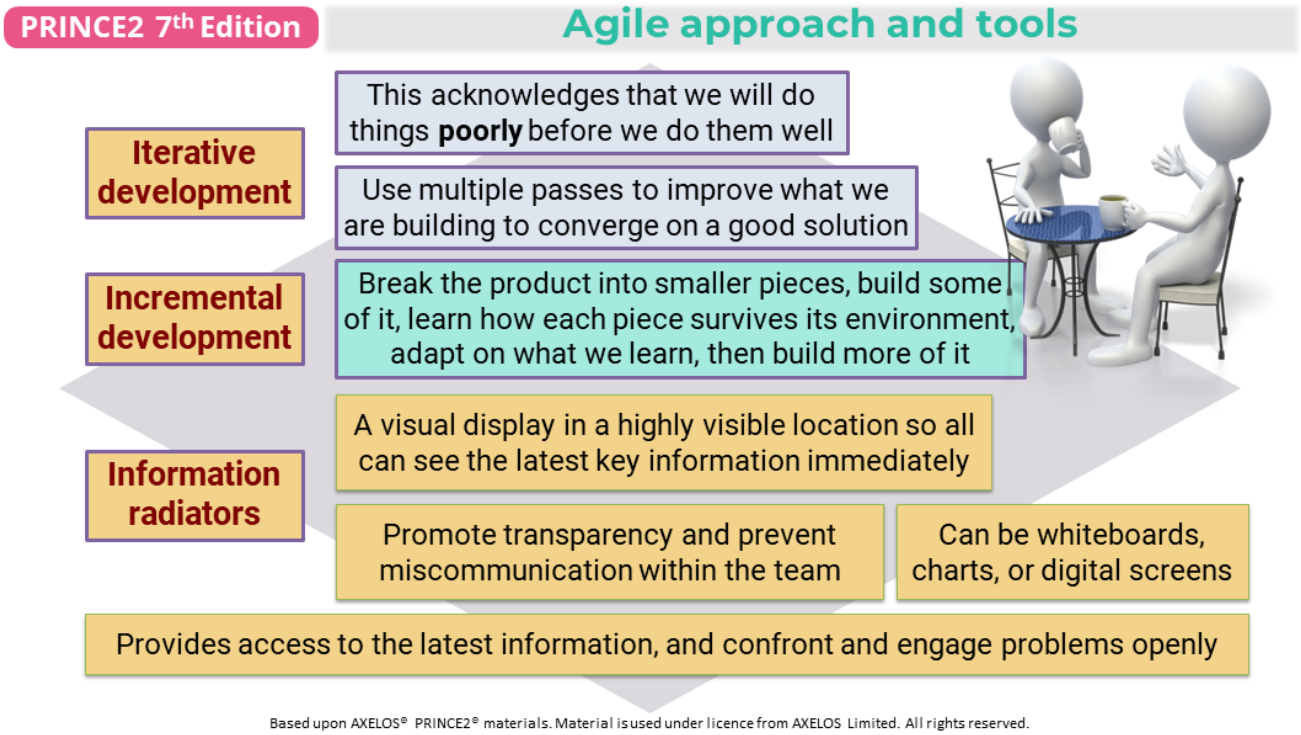
The delivery method is the way in which the work of the project is to be delivered. The project may rely on one or more delivery methods to create the required products.

The PRINCE2 method does not assume or require any specific delivery method. It allows for any approach to be used throughout the management of the project and specialist work to produce the project products.

PRINCE2 provides a controlled environment for specialist delivery methods. It does not assume or require any specific delivery method.

Any approach can be used through the separation of the management of the project and specialist work to produce the project products.

It is important that the approach to managing progress works with, and supports, the project's chosen **delivery method** rather than going against it.



The delivery method is the way in which the work of the project is to be delivered. The project may rely on one or more delivery methods to create the required products.

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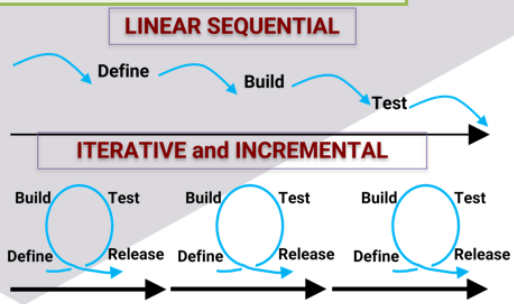
Delivery Methods - 1

Linear-sequential projects

In a linear-sequential delivery method, there is generally **more information** about the required **products** and their **delivery activities**

This enables **product descriptions** and **quality specifications** to be developed in **sufficient detail** to support scheduling and estimation to a **higher confidence level**

However, this **does not** mean there will be no changes in requirements during production or delivery!



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Delivery Methods - 2

Linear-sequential projects

Instead, the **sequence of delivery activities** is typically designed to address **uncertain aspects of product requirements and quality specifications early**, thereby **reducing the level of risk in later stages**

In addition, as with all projects, **acceptance criteria and quality specifications** may be affected by **external changes** to a linear-sequential project and addressed through **change control**

An example of such an **external change** would be introducing **new regulatory requirements** for a project product

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Delivery Methods - 3

Iterative-incremental projects

In iterative-incremental projects, the **quality specifications** and **acceptance criteria** are not fixed with the approval of the **project initiation documentation**

Instead, they are considered **goals** to be achieved through iterations of development and delivery, often called **sprints**

In this case, the **project product description** may be written as **high-level user stories** with associated **acceptance criteria -** and these can **develop iteratively** as the project proceeds

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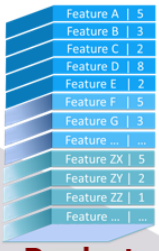
Delivery Methods - 4

Iterative-incremental projects

Alternatively, the requirements (including **quality specifications** and **acceptance criteria**) can be captured and managed in a **product backlog**

This is a **prioritized list** that is reviewed and updated with each **iteration**



Product Backlog

Acceptance criteria are commonly used to ascertain whether a **user story** has been completed.

ID# _____
Title
As a <role>
I want to <function>
So that <benefit>
Value Author Estimate

Needs to be measurable!

User story

"As a shopper, I want to be able to scan a bar code with my phone, so I can compare and find the lowest price of the same product in various stores"

Typical delivery methods include:

linear-sequential approach: each of the delivery steps to create the products occurs in sequence, and the product is made available during or at the end of the project (for example, in a construction project where requirements gathering, and design occur before construction starts).

For a project using a linear-sequential delivery method, the focus may be on when the stage's products will be complete and for what costs. In this way, the project board can be confident that there is a robust basis to move from the current stage to the next.

In a linear sequential approach, steps occur in sequence and the product is available during or at the end of the project.

iterative-incremental approach: this approach is often, but not exclusively, used for product development, where requirements gathering, design, development and/or coding, and testing occur iteratively throughout the lifecycle of the project.

This approach is often referred to as an agile approach.

For a project using an iterative-incremental delivery method, it will typically be more appropriate to focus on tracking how much of the requirement is being met by the end of the sprint rather than how long it will take to complete the products.

The tolerances would have been set in accordance with this.

Within an iterative-incremental approach, steps occur iteratively throughout the project. Also referred to as the agile approach. In a hybrid approach different elements of the project use either of the two approaches.

An iterative-incremental approach may require more information on the benefit tolerances, priorities, and timescales.

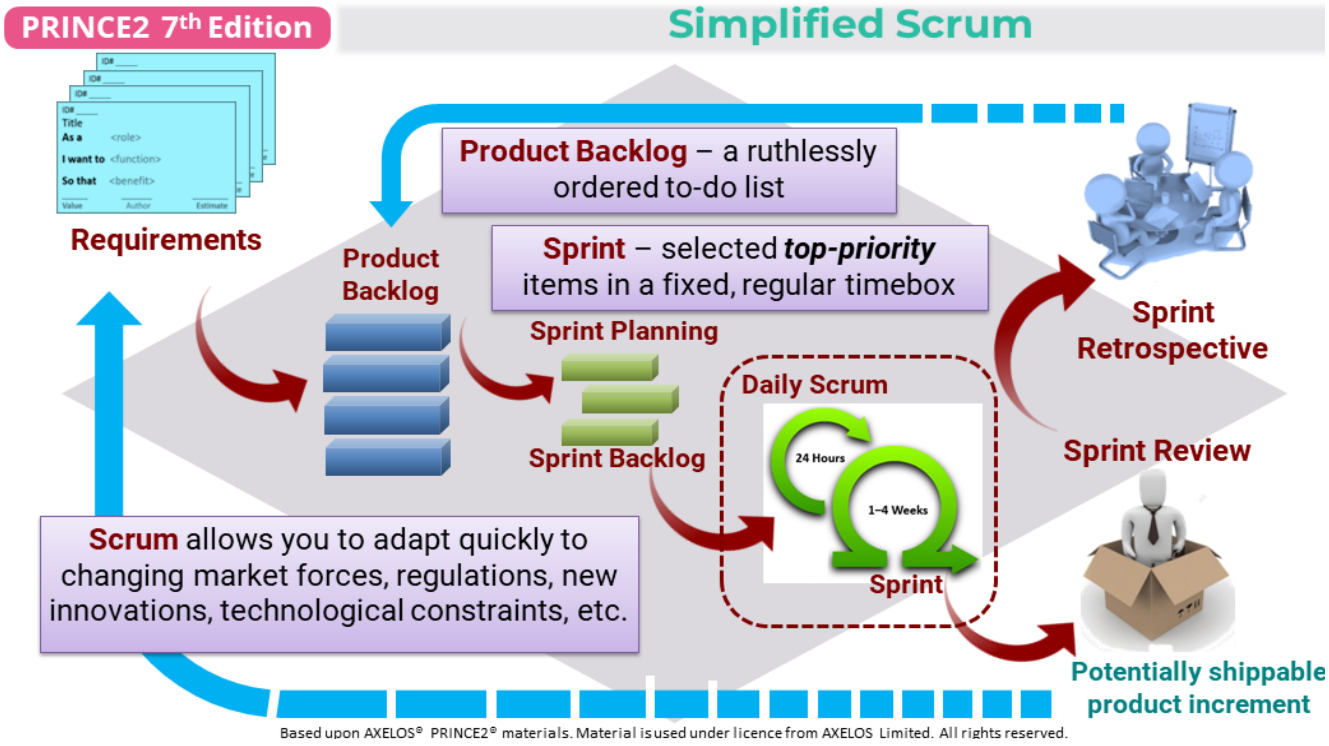
Additionally, it may also need details of the extent and sequence of the scope to be delivered.

For projects that have development teams using agile development methods, the PRINCE2 team manager role may be held collectively by the development team.

Determining how to divide the project into stages will be influenced by the delivery method (iterative-incremental or linear-sequential)

A project using an iterative-incremental delivery method with defined timeboxes will typically fix time and cost and vary in scope. In this case, time and cost will have much tighter tolerances set than the scope.

Product descriptions for projects using an iterative incremental delivery method, such as agile, may be in the form of requirements, features, epics, and user stories.



Hybrid approach: some elements of the project use a linear-sequential approach, and other elements use an iterative-incremental approach.

For example, a linear-sequential approach can be used for the development of the infrastructure for a service.

Then, an iterative incremental approach can be used for the development of the customer service portal for users to access the service.

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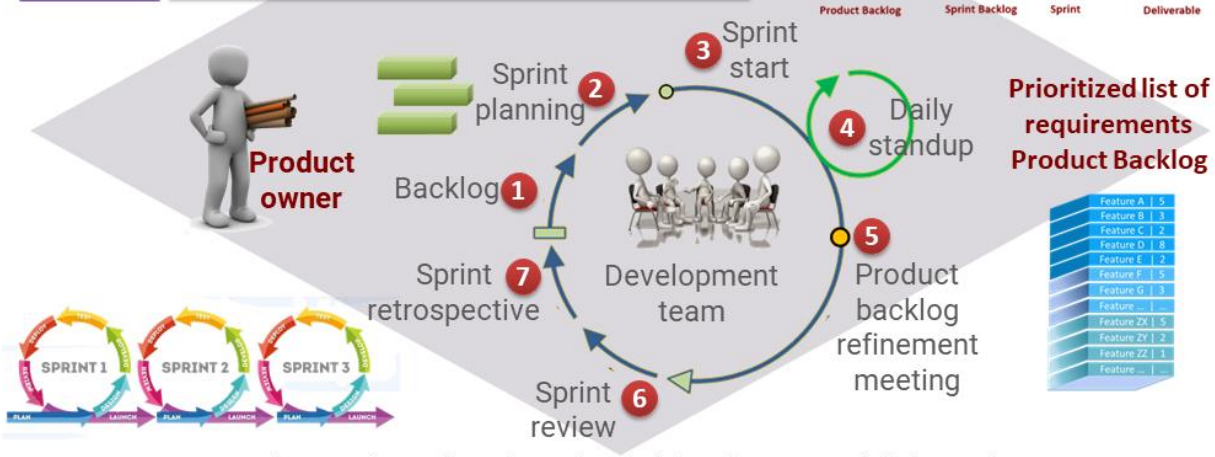
Iterative and incremental life cycle

Iterative Project Life Cycle

Any work not achieved in the time allocated is returned to the **Product Backlog**, and planned into the future schedule or removed from the project



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Hybrid lifecycles - 1

A pragmatic approach towards achieving beneficial change that combines a linear lifecycle for some phases/activities with an iterative life cycle for others

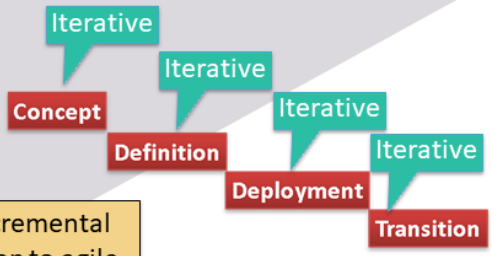
Agile	Agile	Agile	Predictive	Predictive	Predictive

Agile Development Followed by a Predictive Rollout

e.g. Performing clinical trials

Agile	Agile	Agile
Predictive	Predictive	Predictive

Combined/Simultaneous Agile and Predictive Approach



e.g. Incremental transition to agile

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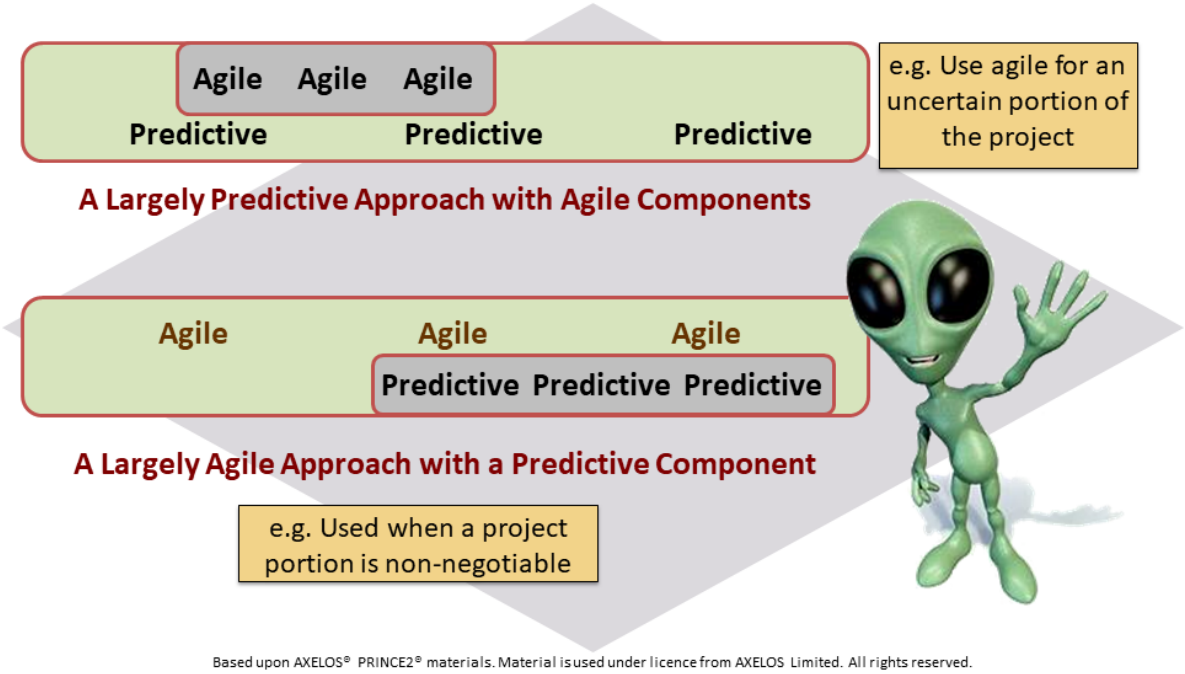
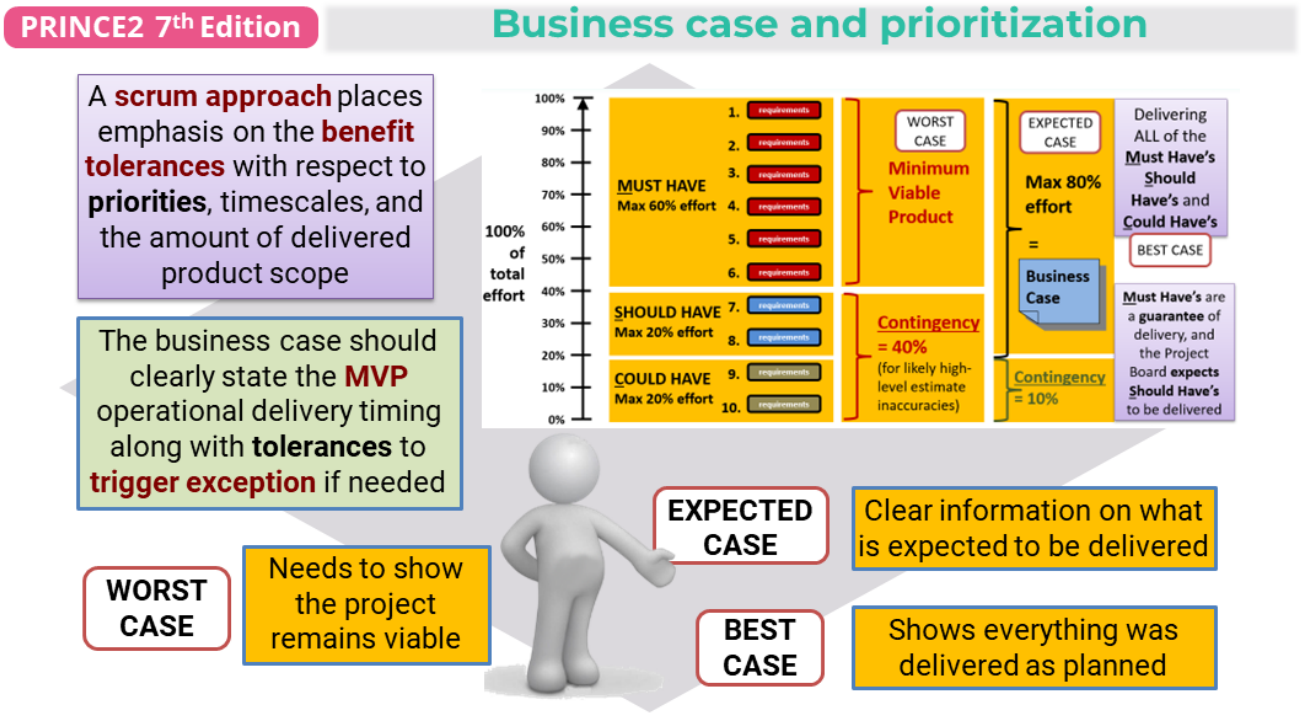
Hybrid lifecycles - 2



Tailoring PRINCE2

How PRINCE2 will be applied and tailored for the project is captured in the **project initiation documentation.**



For example, a supplier may wish to use their in-house product development framework based on an iterative-incremental delivery method using agile management approaches.

To avoid potential confusion, the project manager might propose to:

- map and define terminology between PRINCE2 and the supplier's agile management approaches.
- add the project team roles of 'customer subject matter expert' and 'supplier subject matter expert' to the agile team, representing the customer and the supplier respectively.
- add a coach to guide the teams in working effectively in the combination of PRINCE2 and the supplier's in-house agile method.

- collaborate and communicate according to agile ways of working, such as a daily stand-up and support agile reporting tools, such as information radiators.

- define project procedures, such as working with sprints or work packages, product descriptions, or user stories, and how to use these in the project.

When using iterative-incremental approach, such as agile, the scope of the project is typically flexible to embrace adaptability and to reassure the project will be completed in the fixed time and budget.

Therefore, benefits should be expressed not as a target estimate but rather in the form of a range, relating to the amount of scope delivered.

One way to present the estimation of the benefits is to present different scenarios for the scope and the benefits in a business case, for example:

- best-case scenario describing benefits expected when all (must-, should-, and could-have) requirements are delivered.

- expected-case scenario describing benefits expected when must-have and should-have requirements are delivered.

- worst-case scenario describing benefits expected when only must-have requirements are delivered.

The worst-case scenario showing the lowest expectation of the amount of scope delivered should also show that the project is still viable.

Delivery method roles

When a project is deploying a specific delivery method, the project manager will need to understand how the roles will be prescribed by the delivery method align to PRINCE2 roles.

In some cases, a simple change of terminology and minor amendments to the role description will suffice. For example, iterative-incremental product development techniques often include the role of product owner, which could be aligned to the senior user role.

In other cases, distinct roles may need to be added to the project management team structure along with agreement on how they relate to the PRINCE2 roles.

Questions to ask are:

- How will the project manager liaise with teams when they are using different delivery methods from each other (such as a hybrid of linear-sequential and iterative-incremental)?
- If self-organizing delivery teams are used, how do they relate to the team manager role?
- Would the team manager role be held by a scrum master, held collectively by team members, or the responsibilities of team manager would be split between team members, product owner, and scrum master?

The use of management by exception is essential to enable the PRINCE2 method and iterative incremental techniques to work together in the most effective way.

This empowers the project management team and enables it to self-organize within clearly defined boundaries.

Project and stage plans

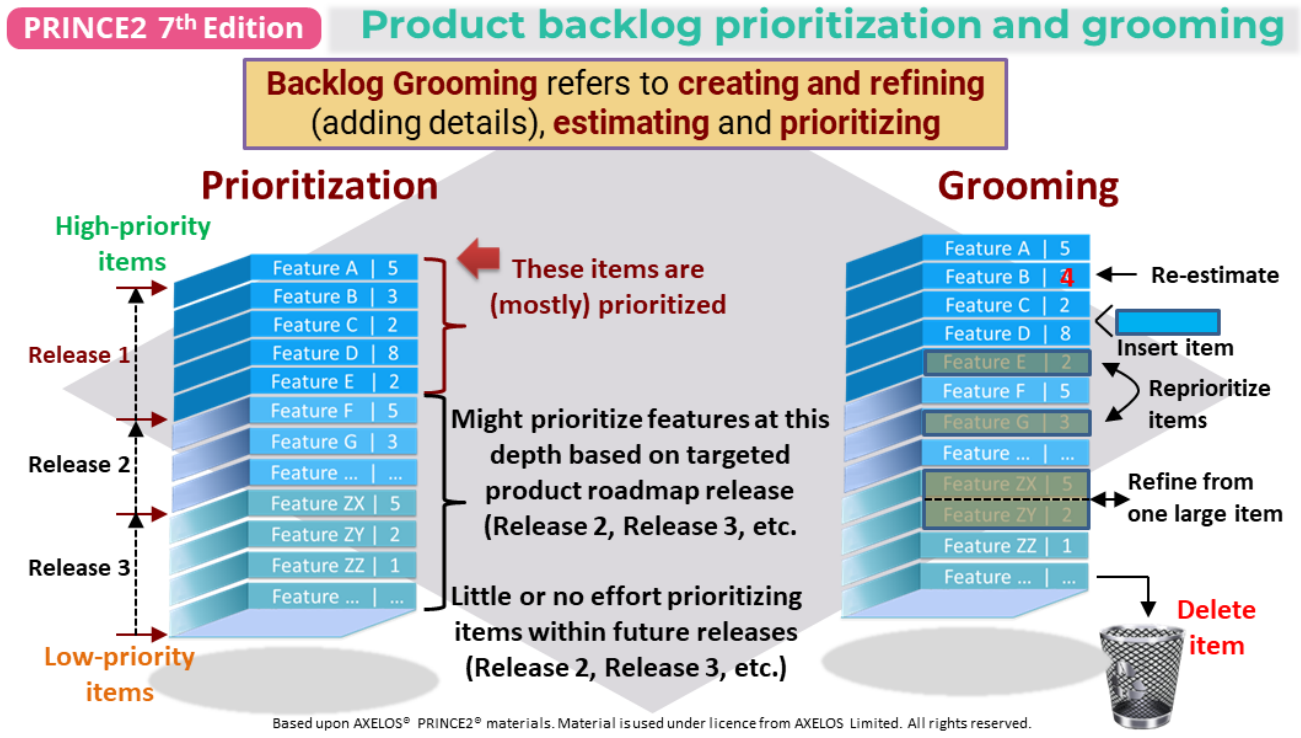
The PRINCE2 planning techniques can be applied in both linear-sequential and iterative incremental projects.

When preparing the project plan and before committing to major expenditure on the project, the timescale, resource, and people requirements must be established.

This information is held in the project plan and the project manager should confirm the delivery method (linear-sequential, iterative-incremental, hybrid), and assess its implications for planning.

The product flow diagram helps the project management team decide whether the project should be delivered in a linear-sequential or iterative-incremental manner.

For **linear-sequential** projects, most planning effort is applied upfront in the processes of starting up a project and initiating a project. This is because these projects are often characterized by well-understood products and mature delivery activities.



Iterative-incremental projects focus on how much can be produced over a fixed period (such as a sprint or a timebox). This is with the goal of delivering an initial product quickly and refining and improving it iteratively.

The project plan should state whether each work package will be delivered sequentially or in an iterative incremental manner.

In an iterative-incremental project, some work packages may be detailed in a subsequent stage plan, but their general purpose and scope should be stated in the project plan.

The scope of a plan is defined by the set of products to be delivered. Scope tolerance (if used) should be in the form of a note or reference to the product breakdown structure for the plan.

Scope tolerance at the stage or work package level is of particular use, if applying an iterative-incremental development method such as agile.

Project controls

The level of control required by the project board after initiation needs to be agreed, and the mechanism for such controls needs to be established, as does the level of control required by the project manager of the work to be undertaken by team managers.

Project controls enable the project to be managed in an effective and efficient manner that is consistent with the scale, risks, complexity, and importance of the project.

Effective project controls are a prerequisite for managing by exception.

Project controls should include confirming the delivery method (linear-sequential, iterative-incremental, hybrid), and assessing its implications for project controls.

Project Stages

The goal of the project plan is to give the project board and the project manager confidence in proceeding with delivery.

PRINCE2 structures the management of the project on a stage-by-stage basis. Combined with the focus on products principle, managing by stages helps the project management team to plan and deliver what is required when it is required.

Determining how to divide the project into stages is a matter of balancing:

- the delivery method (iterative-incremental or linear-sequential) with the sequence of delivery activities
- the type of people and resources involved
- the number and timing of key decision points
- the amount of risk the project can manage
- how far ahead in the project it is sensible to plan.

The number of stages can vary, based on the nature of the products and the necessary delivery activities. A greater number of stages increases the degree of control, but every stage boundary requires effort to manage.

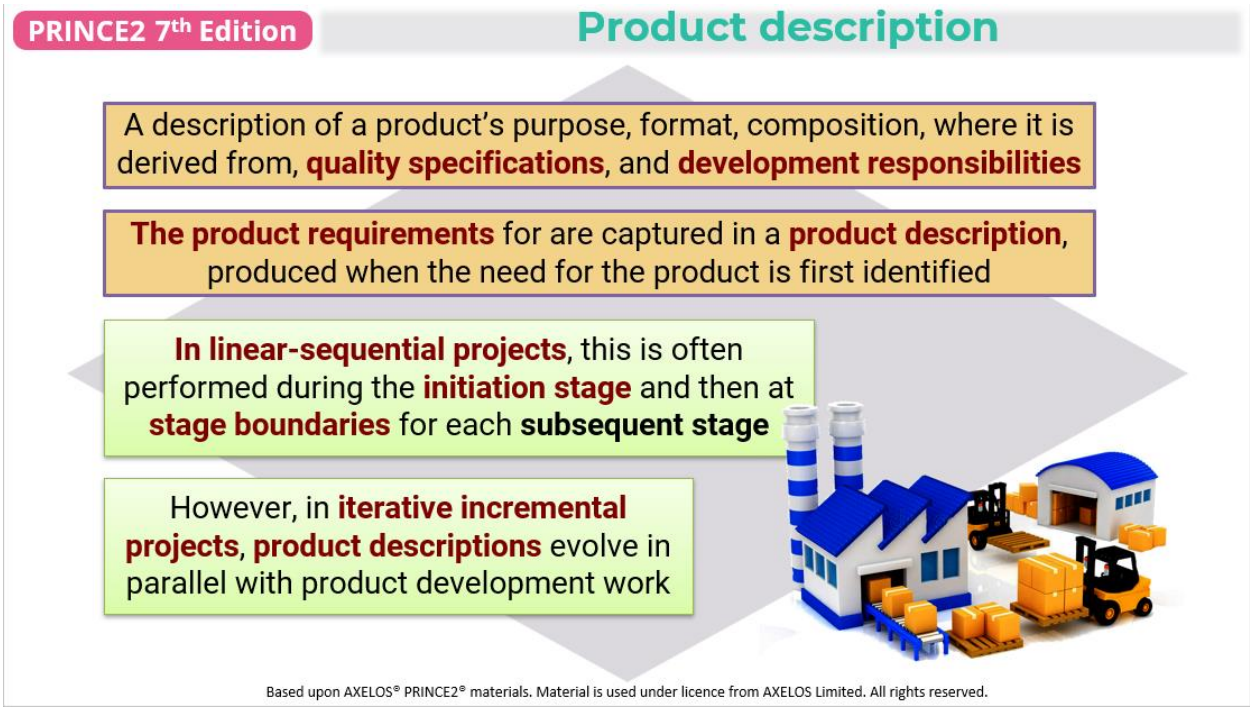
Therefore, there is a trade-off between the degree of control and the level of management overhead on the project.

For an iterative-incremental project, the project plan may provide multiple delivery stages in which the quality and acceptance criteria are refined in parallel with development of the required products using a product backlog.

Writing product descriptions

In the process of initiating a project, the required products are described in more detail. The project manager elicits the user's requirements for these products and documents them in one or more product descriptions.

The project manager also consults with subject matter experts to determine requirements related to how these products are procured, developed, tested, used, and supported after acceptance.



The definition and analysis of products may be an iterative procedure.

In a linear-sequential project, the product descriptions should be sufficiently detailed to enable costs and time to be estimated at an appropriate level of confidence.

However, in an iterative-incremental project, the detailed requirements for products may be developed in parallel with the products themselves, and a high-level set of product descriptions may be sufficient to proceed with the stage in which they are to be developed.

Projects rarely have the luxury of fulfilling all user expectations, so it is helpful to prioritize quality specifications for each product to ensure that the most important requirements are met.

Scheduling

Project schedules provide information on the sequencing, dependencies, and durations of activities, along with milestones.

There are a variety of scheduling and presentation techniques that can be used, including a Gantt chart, spreadsheet, product checklist.

Activity flow board: When using an iterative-incremental delivery method, this technique shows how each product or product component progresses through the work of development or delivery.

It is used in Kanban boards as well as other tools that are often used in iterative-incremental projects.

Estimating

A variety of estimating techniques are available to project managers. These include the following:

top-down: a top-down technique assumes that the costs, duration, and level of effort of the major products and work packages can be estimated to a high-level of confidence.

These are then allocated to subordinate elements of the product breakdown structure and work breakdown structure.

This technique could be used for an iterative-incremental project in which delivery is structured into stages and sprints with fixed timeframes and resources.

The Delivery method and planning

The PRINCE2 planning techniques can be applied in both linear-sequential and iterative-incremental projects.

For linear-sequential projects, most planning effort is applied upfront in the processes of starting up a project and initiating a project.

This is because these projects are often characterized by well-understood products and mature delivery activities.

On the other hand, iterative-incremental projects focus on how much can be produced over a fixed period (such as a sprint or a timebox).

This is with the goal of delivering an initial product quickly and refining and improving it iteratively.

When an iterative-incremental approach such as agile is being used, a common planning approach would consist of:

- setting tolerances for each iteration that effectively fix time and cost and enable more flexibility in scope
- producing the project product description in terms of expected outcomes and benefits
- developing the user stories, epics, and product backlogs instead of product descriptions
- determining the length of releases or timeboxes and defining these as stages
- estimating the resource requirements for each stage and preparing the project budget
- combining the product backlog and workflow in a collaborative planning tool, such as a Kanban board.

A Kanban board may be used instead of a team plan and is developed as a joint effort by the whole development team.

The iterative-incremental approach lends itself to the review and update of the plan as part of each cycle, just as in the preparation of stage plans in a linear project.

However, it reflects the updates in a collaborative planning tool.

Project Scale

The PRINCE2 planning technique supports a wide range of projects. Although product-based planning always applies, the level of effort involved in planning can easily be scaled up or down based on the characteristics and needs of the project.

If the products or delivery method are new to an organization, it may be difficult to rely on experience or similar projects to capture requirements or estimate schedule and costs.

Therefore, plans incorporate a high degree of uncertainty and the use of risk mitigating techniques (such as prototyping) or an iterative-incremental approach may be justified.

Describing products

The high-level requirements captured in the project product description are useful for management and direction purposes.

However, the delivery of the products requires more detail to enable realistic planning, estimating, scheduling, and quality control.

A description of a product's purpose, format, composition, where it is derived from, quality specifications, and development responsibilities.

The requirements for a product are captured in a product description. It is produced when the need for the product is identified.

In linear-sequential projects, this is often performed during the initiation stage and then at stage boundaries for each subsequent stage.

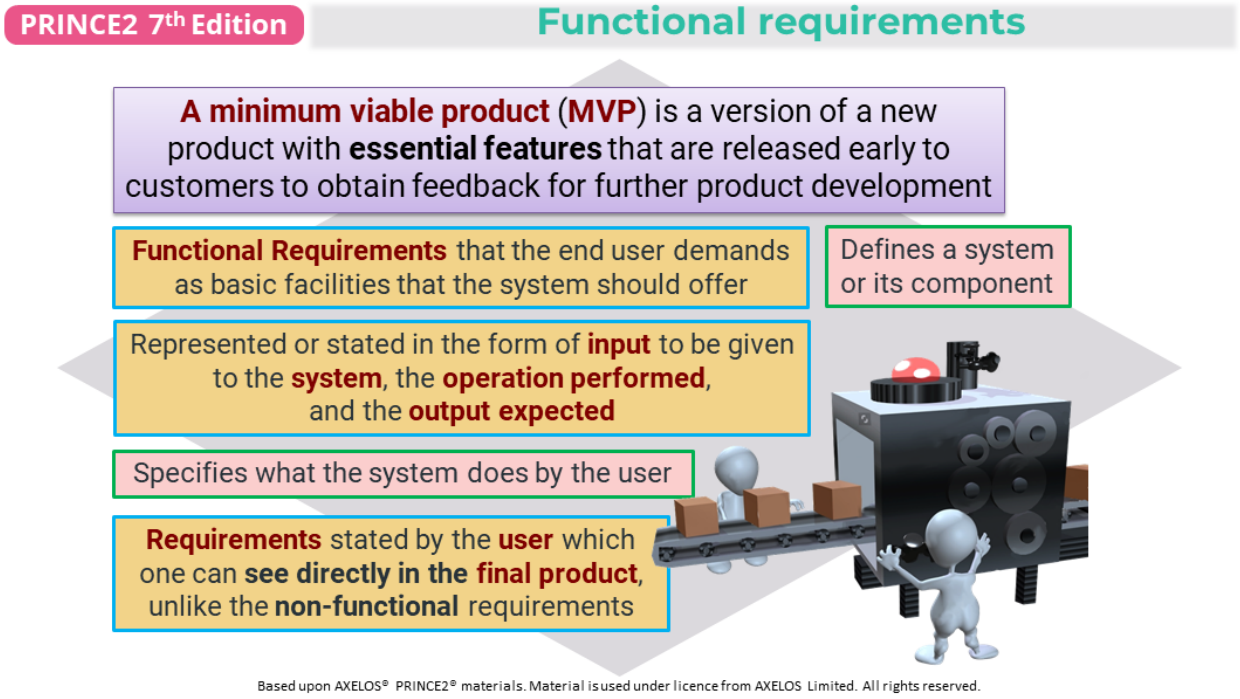
However, in iterative incremental projects, product descriptions evolve in parallel with product development work.

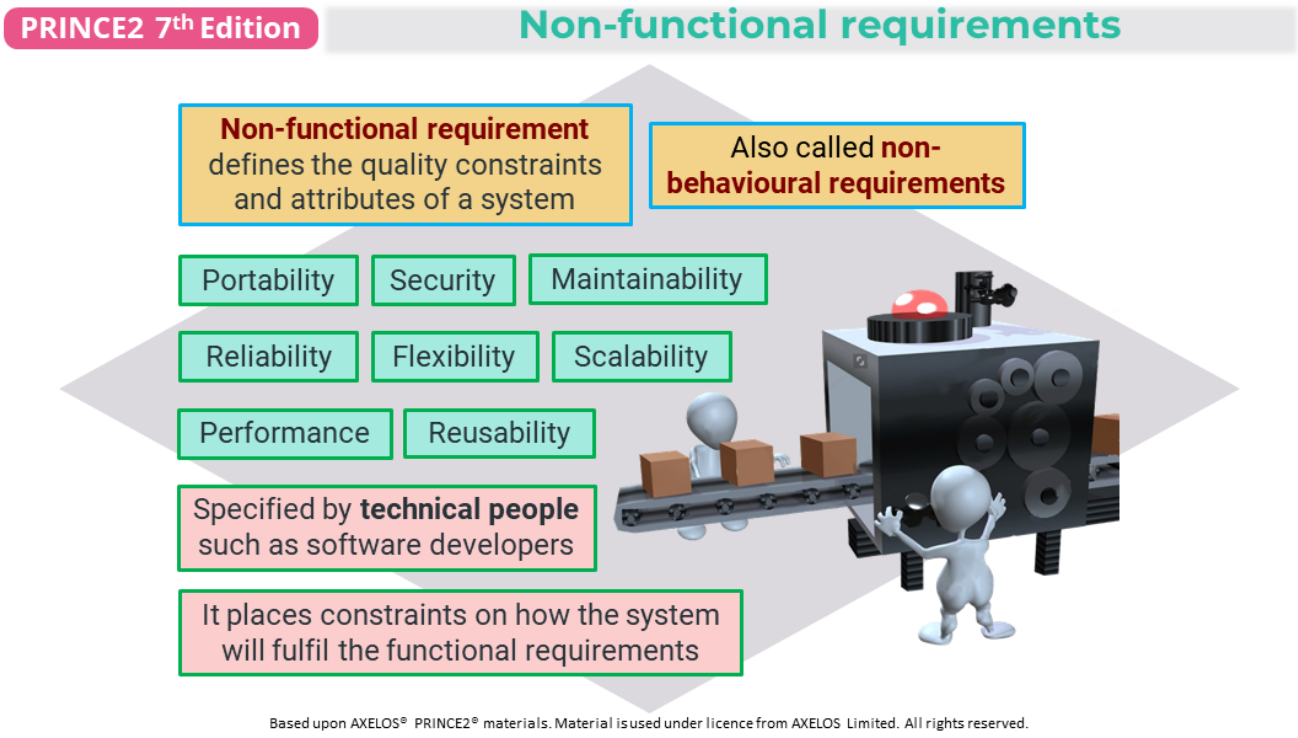
Quality techniques

Although a wide range of quality techniques exist, the most used in a project context are:

Prototyping: produces an interim product that is used to obtain early feedback on its functionality or to understand full scale production concerns and is integral to an iterative-incremental delivery method such as Agile; sometimes referred to as beta testing

Beta testing may also involve production and use of alternate versions of a product, such as in A/B testing, in which multiple versions are compared to determine the preferred one.





In a **linear-sequential delivery method**, there is generally more information about the required products and their delivery activities. This enables product descriptions and quality specifications to be developed in sufficient detail to support scheduling and estimation to a higher level of confidence.

In **iterative-incremental projects**, the quality specifications and acceptance criteria are not fixed with the approval of the project initiation documentation.

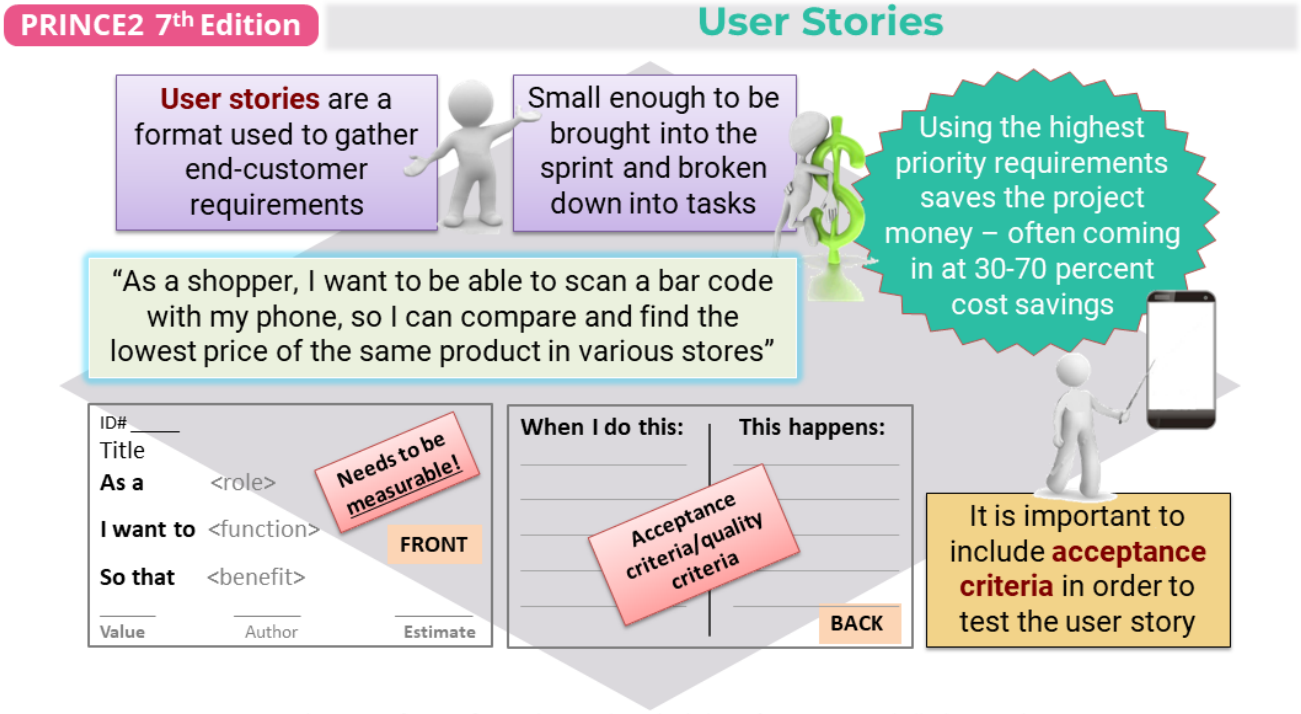
Instead, they are considered goals that are to be achieved through iterations of development and delivery, often referred to as sprints.

An understanding of the types of quality techniques used and their timing, location, and resource requirements is essential to project planning.

In iterative-incremental projects, the quality specifications and acceptance criteria are not fixed with the approval of the project initiation documentation.

Instead, they are considered goals that are to be achieved through iterations of development and delivery, often referred to as sprints.

In this case, the project product descriptions may be written in the form of high-level **user stories** with associated acceptance criteria and can develop iteratively as the project proceeds.



As an alternative, the requirements (including quality specifications and acceptance criteria) can be captured and managed in a product backlog. This is a prioritized list that is reviewed and updated with each iteration.

Acceptance criteria are commonly used to ascertain whether a user story has been completed.

An agile project may also aim for early delivery of a **minimum viable product,** a version of the product with just enough features to be usable for the purpose of providing feedback and refining requirements.

Developing a product description for the minimum viable product is an effective way of demonstrating PRINCE2 principles with agile delivery.

The quality management approach may include a standard '**definition of done**' and 'definition of ready'.

Quality tolerances are not summarily defined at the stage or work package level but are defined as per product description within the scope of the plan.

Project risk

The define context and objectives risk management technique step involves obtaining information about the project to ensure that there is a common understanding of the specific objectives that are at risk and to formulate an appropriate risk management approach.

The delivery method being used (linear-sequential, iterative-incremental, hybrid) will have an influence on the project's risk management approach.

The approach to managing risk needs to work with and support the project's chosen delivery method. For example, a risk management approach that includes monthly risk review meetings will struggle to support an iterative-incremental delivery method with two-week sprints.

The PRINCE2 method does not require a particular format for risk management products, nor specific timings for risk management activities. What is important is that they are appropriate for the format and pace of the project.

For example, in an agile delivery method, risks in a risk register may be written on a whiteboard and reviewed as part of a daily stand-up meeting.

In this context, this manual approach may be just as valid as using a specialized IT system to capture and review risks.

It is also important to recognize that the project's delivery method might work to mitigate or reinforce specific risks.

For example, an agile way of working inherently ensures that users do not over specify requirements at the beginning of a project, which can be a risk in a more linear approach.

Although agile is characterized by a high level of engagement with the users directly involved in the project, if not managed correctly, it can lead to uncontrolled changes to the agreed baseline.

Linear approaches tend to reinforce the impression of 'controlled change' but can appear unresponsive and alienate users. It is of importance that the risk management approach recognizes these inherent differences.

Managing issues

The project manager should determine whether there are any organizational or external policies, standards, and procedures that must be applied and incorporate them into the project's own **issue management approach**.

A key assumption underlying the choice of a **linear-sequential approach** to a project is that the number and magnitude of changes will be reduced as the project lifecycle progresses.

This is because it is generally much easier and less costly to make changes to the project baseline early in the project.

For this reason, the issue management approach may propose tailoring tolerances to allow flexibility in early stages, such as during design, when the impact of changes may be relatively small.

Then, in later stages, such as during construction, the tolerances may be much more tightly restricted and a larger portion of the change budget made available, in recognition of the potential cost of even minor changes.

Issue management and change control are intrinsic to the **iterative-incremental approach**. The frequent review of progress and short cycles of delivery work (such as in agile methodologies) are intended to raise and resolve issues quickly.

This is to allow the **scope baseline** (sometimes referred to as the **product backlog**) to evolve in a manner that keeps a close alignment between requirements and developed capabilities of the product.

If the entire scope of the project's delivery activities follows an incremental-iterative approach, it may be sufficient for the project manager to ensure that issues are consistently captured, assessed, and decided.

This would be in a manner that provides traceability back to the project product description and maintains an effective level of control.

In other cases, the project manager should consider structuring the issue management approach to allow the project board to retain change authority over management products.

Meanwhile, delegating authority over changes in features and functionality in specialist products to the teams working within a framework such as PRINCE2 Agile.

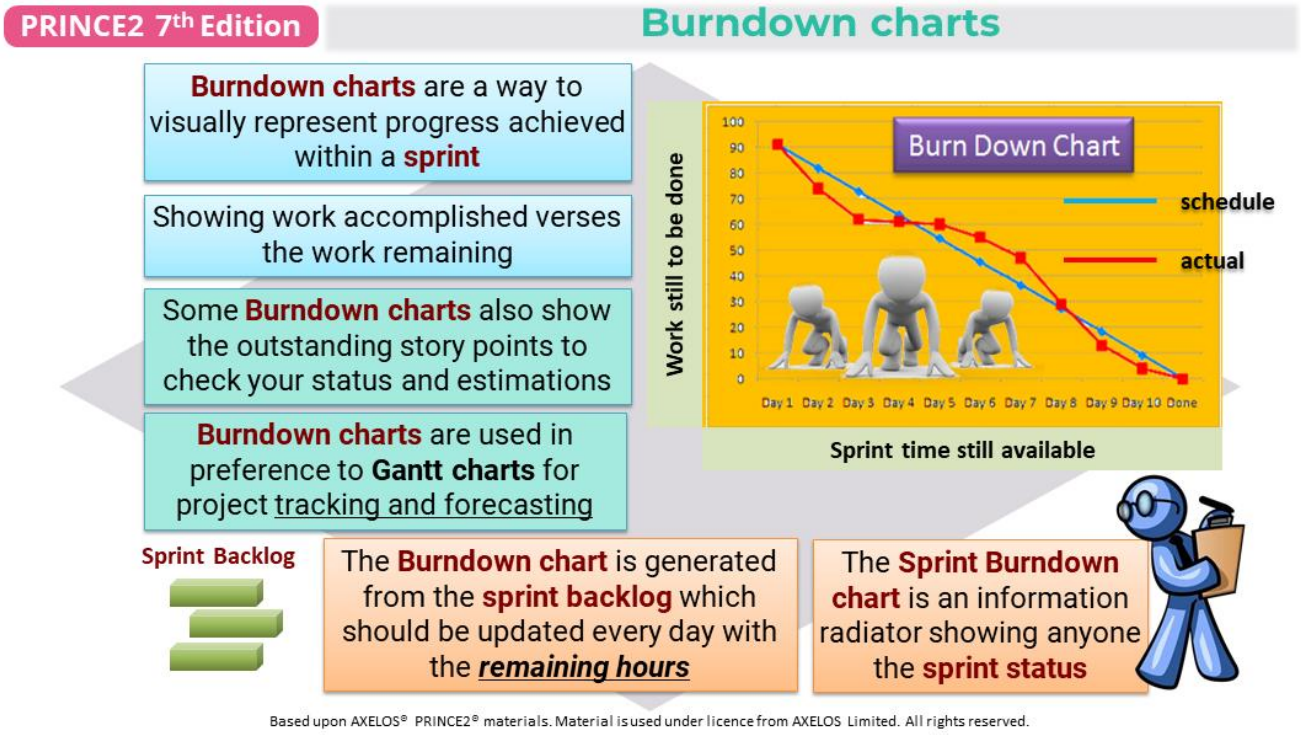
The issue management approach may include the agile technique of trading/swapping features in response to issues as a means of remaining within tolerance.

Agile methods enable change late in the product development lifecycle to deliver a product that better matches user expectations with the biggest possible value. This philosophy applies when products are difficult to define in detail early in the project.

Project progress

It is important that the approach to managing progress works with, and supports, the project's chosen delivery method rather than going against it.

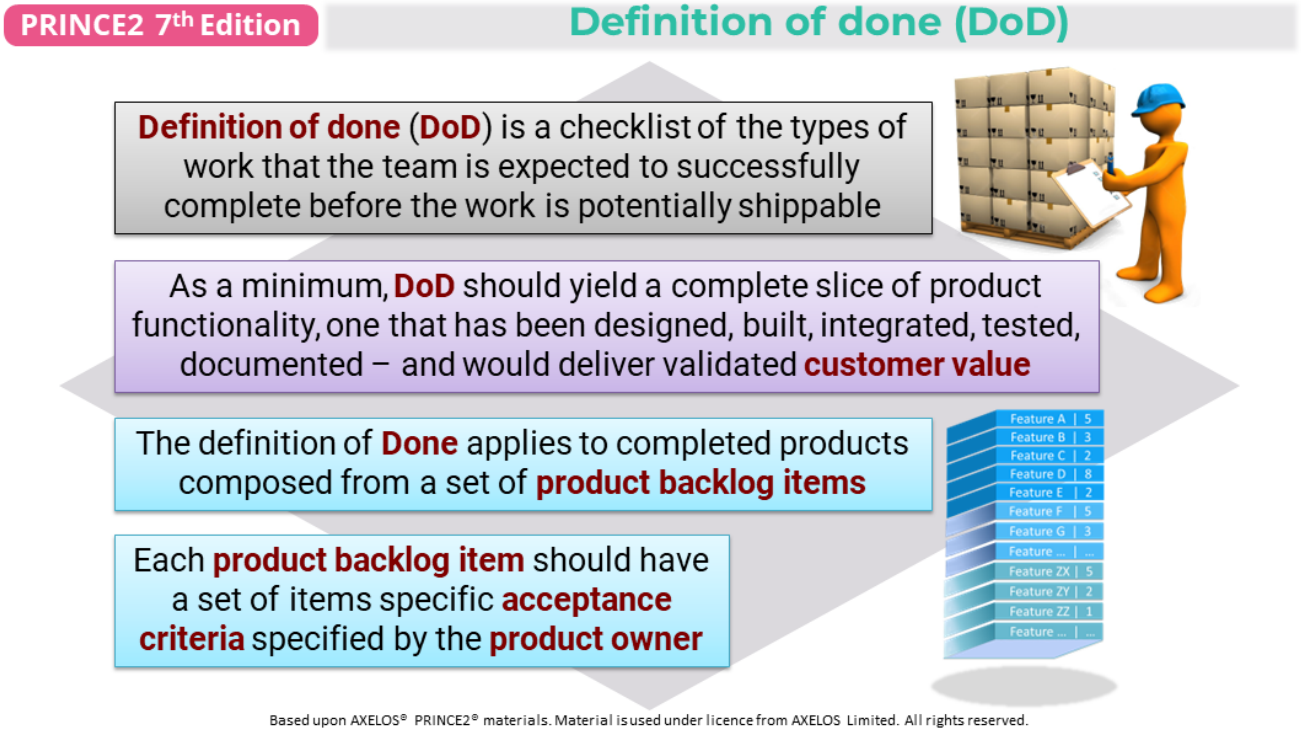
The implementation of '**manage by exception**' provides for efficient use of senior management time as it reduces senior managers' time burden without removing their control. This ensures that decisions are made at the right level in the organization.



The goal is to alert the next management level in the project as early as possible that the work will move outside of agreed tolerances, and a decision is needed on if and how to proceed.

The decision-maker can decide to accept the deviation and its consequences or act to remove or reduce it.

For a project using an iterative-incremental delivery method, it will typically be more appropriate to focus on tracking how much of the requirement is being met by the end of the sprint rather than how long it will take to complete the products.



The tolerances would have been set in accordance with this. The frequent delivery of products that meet their acceptance and quality specifications is a primary source of progress information and provides the basis for forecasting future progress.

The formality of reporting may differ in an iterative-incremental project using agile techniques such as Kanban and burn-down or burn-up charts.

Checkpoint reporting may be based on a 'pull' system, where the project manager reviews the charts maintained by the development teams rather than being sent by them.

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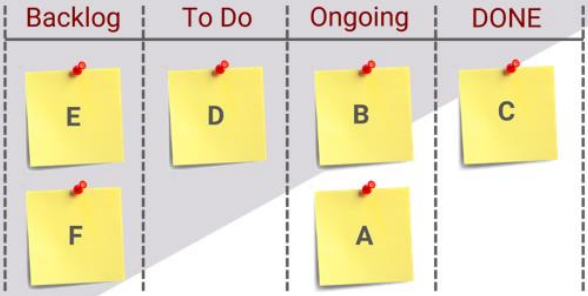
The Kanban Board - 1

A visualisation tool that shows **work in progress** to help **identify bottlenecks** and o**vercommitments**, thereby allowing the team to optimise the workflow

Show work at various stages of a process, using cards to represent work items and columns to represent each stage



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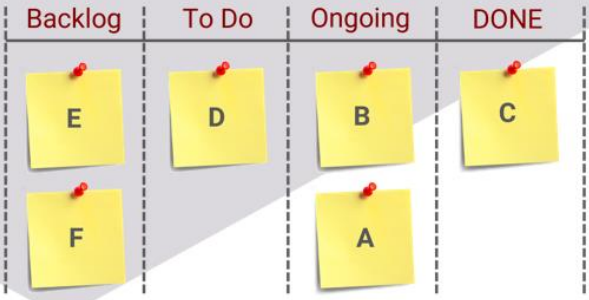
The Kanban Board - 2

Cards are moved from left to right to show progress and help **coordinate teams** performing the work

A kanban board may be divided into horizontal "Swimlanes" representing different kinds of work or different teams performing the work

Kanban boards can be used for projects or manufacturing processes



By contrast, for a project using a linear-sequential delivery method, the focus may be on when the stage's products will be complete and for what costs. In this way, the project board can be confident that there is a robust basis to move from the current stage to the next.

As the project progresses lessons should be included in relevant reports and reviews and included at the end of each stage.

The goal is to seek opportunities to implement improvements during the life of the project. **The retrospective technique** is an example of gathering lessons in an agile approach.

Highlight and checkpoint reports.

The project manager must provide the project board with summary information about the status of the stage and project and distribute other information to the stakeholders at a frequency documented in the communication management approach.

Authorize a work package.

The degree of autonomy people require to deliver project work needs to be balanced with the need to coordinate the timing of when work starts and by when work should be completed.

The vehicle for ensuring the coordinated timing of project work is the authorization, execution, and delivery of a work package.

For projects using an iterative-incremental delivery method, the co-creation of the work package description may be a joint exercise with the team manager, development team, and product owner.

For projects using an iterative-incremental delivery method such as agile, the highlight report may be based on a 'pull' system, whereby the project board looks at progress charts being maintained by the project manager and development teams.

For projects using an iterative-incremental delivery method such as agile, the checkpoint report may be based on a **'pull' system**, whereby the project manager looks at progress charts such as **Kanban boards** or **burn-down charts** being maintained by the team manager and development teams.

Aligning Agile with PRINCE2 Principles

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PRINCE2 principles with Agile - 1

PRINCE2 states that a project must be tailored to fit its environment and **agile/scrum** can be used to deliver projects

A **PRINCE2** project must adhere to the seven **PRINCE2 principles** as shown below:

Continued business justification	The **Product Owner** uses the **Product Backlog** to **prioritize requirements** according to business justifications – so **backlog items** may be changed for **continued business justification**
Learn from experience	The **sprint retrospective** at each sprint end and lessons are documented for the next **sprint** or project
Defined roles and responsibilities	**Scrum** has the **Scrum Master**, **Product Owner** and **Team**. When the **PRINCE2** and **Scrum** frameworks are integrated the responsibilities are never compromised

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PRINCE2 principles with Agile - 2

Manage by stages

Scrum delivers in iterations called **sprints** which could be considered **stages**, and the **Work Packages** of a **stage** will also use **sprints**

Manage by exception

Scrum manages <u>exceptions</u> **either by:**

Returning **incomplete sprints** back to the **Product Backlog**

The **Product Backlog** could be modified any time to **handle exceptions** with close liaison between the **Scrum Master**, the **team** and **Product Owner**

Dealing with them at **sprint reviews** with the **Product Owner**

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PRINCE2 principles with Agile - 3

Focus on products

The **team** reviews the **Product Backlog** and converts this into the **Sprint Backlog** listing tasks to be completed

The **team** must consult with the **Product Owner** on **User Stories** and **acceptance criteria** for when the product is developed, and its quality challenged at **sprint reviews**

Tailor to suit the project environment

PRINCE2 and **Scrum** can be blended provided the **PRINCE2 principles** are not ***compromised***

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Agile Delivery Methods

Iterative-incremental projects

An agile project may also aim for early delivery of a **minimum viable product**, a version with just enough features to be usable to provide feedback and refine requirements

Developing a **product description** for the **minimum viable product** effectively demonstrates **PRINCE2 principles with agile delivery**

The **quality management approach** may include a standard '**definition of done**' and '**definition of ready**'.

Definition of ready. The team provides a **user story** with clear and visible criteria prior to being accepted into the **upcoming iteration**

Definition of Done. **The product owner** completes this by ensuring alignment with stakeholders and business goals