

Understanding Scheduling and Credible Delivery

Project Planning and Scheduling for Project Controls Professionals

Kent Business College | Project Controls Professional Level 6 | PMI-SP preparation

The decision behind a delivery date

A delivery date is useful when somebody can explain what must happen for it to be achieved. A sponsor may need to announce an opening, an operations manager may need to release a plant for maintenance, and a supplier may need to reserve a production slot. Each decision depends on more than the appearance of a date in a report. The underlying work must be understood, the sequence must be possible, the people and equipment must be available, and the remaining uncertainty must be recognised. Scheduling connects these conditions so that the organisation can decide what to do, when to commit and when to reconsider. For a project controls professional, the central question is therefore how much confidence the evidence justifies in the proposed delivery date.

This chapter develops that question from first principles. It explains why scheduling matters, distinguishes the principal terms used by PMI, compares delivery life cycles and introduces the main scheduling approaches. It then connects the schedule with wider project controls and develops a practical framework for testing milestone credibility. The final section considers professional judgement, PMI-SP preparation and the first workplace contribution to ALWI-11. The mathematics of critical paths, resource optimisation and quantitative schedule risk will be developed in later chapters. Here, the objective is to understand what those techniques are intended to explain and which decisions they should support.

The terminology follows PMI's *Practice Standard for Scheduling*, Third Edition. Definitions quoted from that publication retain its wording, including American spelling within quotations; the chapter's own explanation uses British English. The standard concentrates on individual project schedules, principally using the critical path approach, while also discussing adaptive and other approaches. Its principles can inform the schedules of projects within programmes, but it is not itself a programme or portfolio scheduling standard (PMI, 2019, pp. 2-8). The PMI-SP examination content outline provides the examination reference. The additional models, cases and workplace exercises develop the judgement expected of a Level 6 project controls professional.

We continue the fictional **Brambleford pumping station** project used in the Risk Management module. Its teaching assumptions include a base cost of £12 million before monetary risk provision and an existing 18-month project-level schedule baseline. Those figures do not establish any particular confidence of delivery. The project must provide the agreed pumping capability while maintaining service during changeover, satisfying acceptance requirements and supporting lower operating energy consumption. Design, civil works, specialist control panels, installation and operational acceptance must come together. All Brambleford durations, costs and arrangements in this chapter are invented learning assumptions. They are

not benchmarks or reported industry performance. The real cases are identified separately and supported by published sources.

The chapter framework

The **Credible Delivery Framework** brings together six questions that will recur throughout the module. First, is the required outcome and its acceptance evidence clear? Second, does the schedule include the necessary work and interfaces? Third, does the selected approach represent a feasible sequence and a sensible way of learning? Fourth, are resources, calendars and operating conditions realistic? Fifth, has uncertainty been examined, including alternative actions? Finally, has the reasoning been challenged by appropriate people who understand their responsibilities? These questions provide a structure for explanation and review; they are not an additional PMI standard or a numerical certification scheme.

The framework should be used as a connected argument. A strong resource plan cannot compensate for omitted commissioning work. A carefully calculated critical path cannot justify a date if its activity durations depend on an unavailable specialist. An independent reviewer cannot make an ambiguous acceptance condition measurable merely by signing a form. Equally, uncertainty does not mean that planning is pointless. It means the team must state which conditions support its forecast, what could change it and how it will respond. Figure 1 places the six questions around the delivery decision because every question contributes to the same judgement.

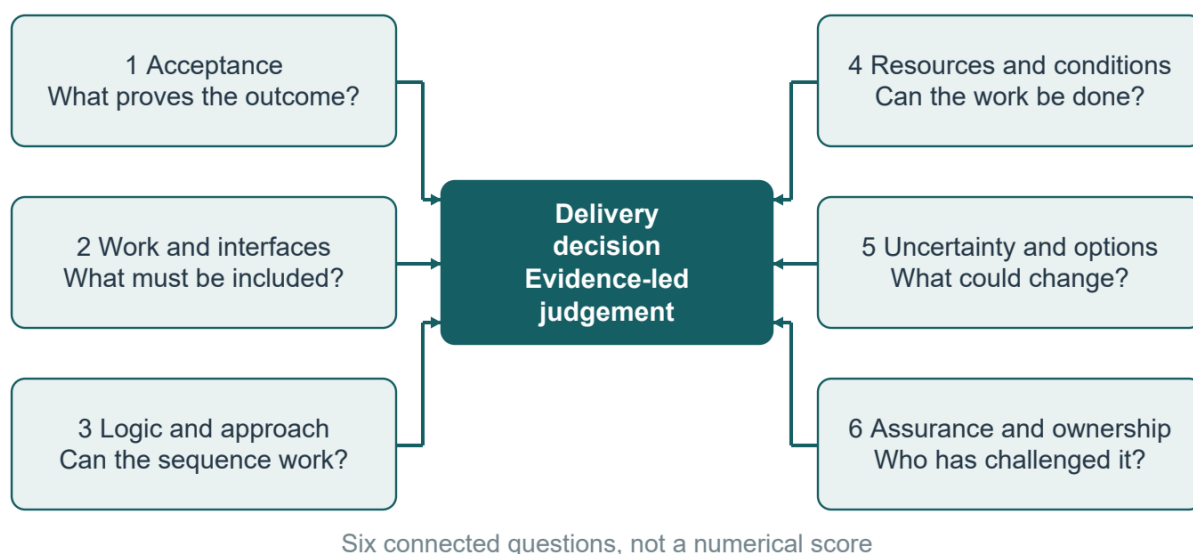


Figure 1. An original teaching framework for this module. The six tests organise professional reasoning; they are not a validated scoring model. Foundations: PMI (2019), with the evidence-led perspective of GAO (2015).

By the end of the chapter, you should be able to explain the value and limits of a schedule, distinguish a model from its published views, compare life cycles and methods, trace a delivery date to its supporting conditions, and identify an appropriate workplace planning improvement. You should also be able to recognise when a question concerns the examination's scheduling principles and when it asks for a broader professional recommendation. Both require clear reasoning, but only the published PMI-SP outline determines examination scope.

1.1 The purpose and value of scheduling

Coordinating work and enabling decisions

A project brings together activities that consume time and resources while depending on information, decisions and other work. Scheduling makes those relationships explicit enough to be examined. At Brambleford, purchasing a control panel before the relevant design has been accepted could create rework. Waiting until every civil activity is finished before considering operator training could postpone useful preparation. The schedule helps the team distinguish genuine dependencies from habitual sequencing, identify opportunities for parallel work and see which decisions need attention now. Its value comes from improving coordination and decisions throughout delivery, rather than from the original production of a bar chart.

PMI explains scheduling as the application of knowledge, skills, tools and techniques to develop and maintain useful schedule models. It links those models with communication, collaboration, performance reporting and the reassessment of remaining work as circumstances change (PMI, 2019, pp. 2-5). A credible model therefore has two connected uses. Before execution, it helps the team examine how the work could be performed. During execution, it helps explain what the latest evidence means for the future. A model that records yesterday accurately but cannot respond logically to a change in remaining work is incomplete as a management aid.

Consider a sponsor asking whether an additional survey is worth commissioning this week. The survey has a direct cost, but it may reveal a foundation issue before panel installation dates are agreed. The schedule allows the team to locate the investigation in time, identify the decisions that depend on it and assess whether its results could still change the delivery approach. Information has timing value: an accurate finding arriving after an irreversible commitment may be less useful than an earlier finding that allows the team to choose a different sequence. Scheduling therefore supports the timing of knowledge as well as the timing of physical work.

Objectives, outputs and operational readiness

The installed pumping system is a project output; reliable service at the required capacity is an example of the operational outcome sought from its use. A schedule should represent the work needed to bridge the two. Installing equipment does not by itself demonstrate that it functions as an integrated system, that operators can use it safely, that records are complete or that the organisation has authorised its use. These conditions differ between sectors and contracts, but the general scheduling question is stable: what evidence makes the claimed milestone true?

At Brambleford, the milestone 'pumping station ready' would be too ambiguous to support a serious commitment. The electrical contractor might interpret it as installation complete; the commissioning engineer might require successful system testing; the operator might require training, maintenance information and an accepted operating procedure. A better milestone description identifies the readiness state and the authority that confirms it. That wording then helps the planner identify the activities, evidence and interfaces needed before the milestone. Clear acceptance language improves the schedule because it exposes work that vague wording can conceal.

England case study Crossrail and the work behind opening

The National Audit Office's 2021 update on Crossrail provides a useful example of the distinction between visible construction progress and a credible opening programme. It reported that the central section had not opened in December 2018 as intended. Its examination of subsequent planning described how an April 2019 plan containing approximately 300 activities developed into a much more detailed plan with over 10,000 activities by August. The report also found that both plans relied on overoptimistic information about the completeness of the railway, while testing revealed further work. The finding concerns the quality of the underlying understanding, not a claim that increasing the number of activities caused delay (NAO, 2021, pp. 29-32).

The Elizabeth line's central section subsequently opened to passenger service on 24 May 2022, as recorded by the Department for Transport. That opening is a dated outcome, not evidence that every earlier forecast was sound or that one planning technique explains the result (DfT, 2022). For our purposes, the case invites a more useful question than whether a schedule looked detailed: how had the team demonstrated that the remaining work, integration and testing were sufficiently understood to support the opening forecast? A schedule may contain thousands of activities and still depend on incomplete evidence about the state of the asset.

The Brambleford application is straightforward. Before treating 'installation 95 per cent complete' as reassurance about operational readiness, ask what remains in the five per cent, what testing could reveal, and which acceptance activities depend on the final interfaces. A percentage describes a chosen measure; it does not automatically describe the amount of time or uncertainty remaining. A small quantity of unfinished work can control a large milestone if everything else depends on its completion. The lesson is to connect progress statements with the delivery logic and acceptance evidence, rather than infer readiness from an attractive aggregate figure.

What scheduling can and cannot establish

A schedule can expose a contradiction between scope, resources and a desired date. It can quantify the consequences of assumptions, compare feasible alternatives and preserve an agreed reference for control. It cannot guarantee the future, remove the need for competent delivery management or make unreliable data trustworthy. The US Government Accountability Office's *Schedule Assessment Guide* treats a reliable schedule as an essential management tool and relates schedule quality to comprehensive scope, sound construction, credibility and control (GAO, 2015). These qualities should be interpreted through evidence: what has been included, how it is connected, what supports its assumptions and how it is maintained.

This matters when a deadline is fixed. A contractual or policy requirement can be a legitimate constraint, but entering that date into software does not demonstrate that the work can finish by then. The team still needs to examine the gap between the required date and the modelled result. It might reduce scope through an authorised decision, change the delivery method, secure additional capacity, alter an interface or accept a different level of exposure. Where no feasible solution is supported, the professional contribution is to explain the unresolved gap and the decision it creates. Concealing it deprives the organisation of time to respond.

1.2 Understanding the language and architecture of a schedule

Work, events, resources and relationships

PMI defines a **logical relationship** as 'A dependency between two activities or between an activity and a milestone.' It describes a **resource** as 'A skilled human resource (specific disciplines either individually or in crews or teams), equipment, services, supplies, commodities, materials, budgets, or funds required to accomplish the defined work.' These definitions show why a schedule is more than a collection of dates: work requires inputs and is connected through dependencies (PMI, 2019, p. 2).

An activity represents work that takes time; a milestone represents a significant point or event. The distinction affects both modelling and communication. 'Test the integrated system' needs an allowance for the work, appropriate resources and a clear completion condition. 'Integrated test accepted' can then identify the event reached when the evidence has been accepted. Giving the acceptance milestone a zero duration does not mean that inspection or approval takes no effort; any time-consuming preparation, review or testing must be represented in the preceding activities. Otherwise, the model hides work inside an apparently instantaneous event.

Activity. 'A distinct, scheduled portion of work performed during the course of a project.' (PMI, 2019, p. 2)

Milestone. 'A significant point or event in a project, program, or portfolio.' (PMI, 2019, p. 183)

In a planning workshop, these terms provide practical tests. If the team cannot explain what is being done, who or what is required, and what makes the activity complete, the entry may be a label rather than a usable planning unit. If a relationship cannot be justified, it may be unnecessarily restricting the sequence. If an important dependency exists only in somebody's memory, the model may produce a forecast that the delivery team knows is impossible. Clear language allows technical specialists to challenge the model without first becoming expert users of the scheduling software.

Method, tool, model, instance and presentation

Scheduling tool. 'A tool that provides schedule component names, definitions, structural relationships, formats, and algorithms for schedule calculation that support the application of a scheduling method.' (PMI, 2019, p. 3)

Schedule model. 'A representation of the plan for executing the project's activities including durations, dependencies, and other planning information, which is used to produce a project schedule along with other scheduling artifacts.' (PMI, 2019, p. 3)

Schedule model instance. 'A version of the schedule model that has been processed by a scheduling tool based on inputs and adjustments made to the project-specific data within the scheduling tool.' (PMI, 2019, p. 3)

Schedule presentation. 'An output published from a schedule model instance used to communicate project-specific data for reporting, analysis, and decision making.' (PMI, 2019, p. 3)

The scheduling method supplies the analytical approach, while the tool provides the functions through which it is applied. The model combines the project's particular activities, dependencies, durations and other information. Processing and saving that model produces an identifiable instance. A presentation selects and displays information from that instance for a particular audience. These distinctions matter because a failure at one level cannot necessarily be repaired at another. A clearer dashboard does not correct missing relationships, and a more capable tool does not decide whether the selected delivery approach suits the work.

At Brambleford, the team might use a critical path approach in its approved scheduling software. The model contains the design, procurement, installation and testing activities, with their calendars and dependencies. The instance saved after the month-six update records the information accepted at that point. An operations meeting might use a four-week look-ahead view from the same instance, while the sponsor receives a milestone summary. These presentations differ because the decisions differ; they should not contain contradictory forecasts arising from uncontrolled copies of the underlying information.

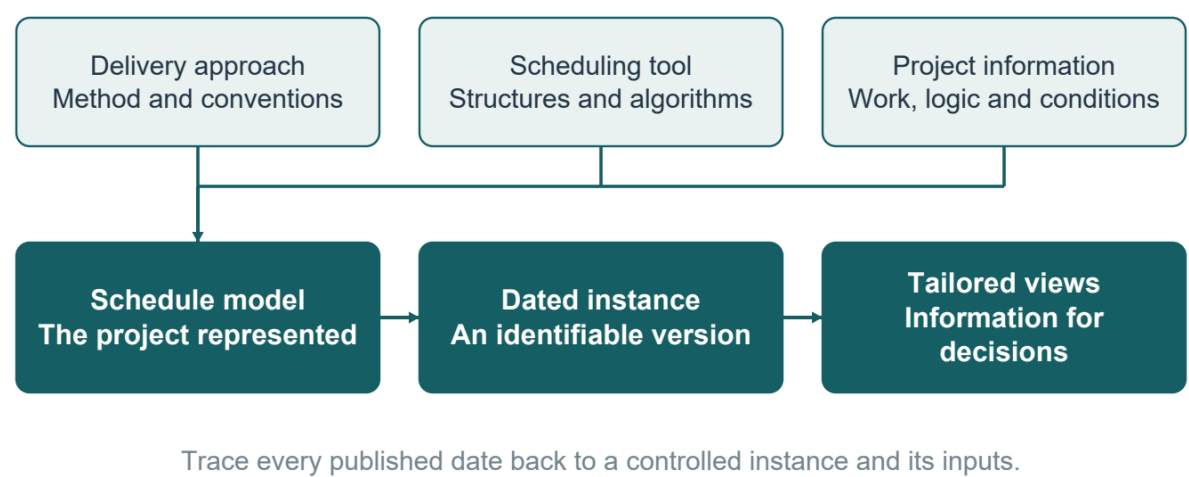


Figure 2. An original explanation of the layers of scheduling information. A published view should be traceable to an identifiable model instance and its inputs. Terminology follows PMI (2019, pp. 3-6).

The model remains selective. It represents the parts of reality needed to answer the planning and control questions, rather than every detail of human activity. Excessive detail can make updates difficult and conceal the relationships that matter; insufficient detail can hide work or prevent responsibility from being assigned. The appropriate level depends on purpose, risk, reporting frequency and the decisions that the audience needs to make. Chapter 2 examines schedule levels in depth. For now, the key test is whether the model is detailed enough to support its intended decisions and maintainable enough to remain current.

Element	Its practical function	Brambleford example	A common misunderstanding
Approach or method	Determines how work and time are represented and analysed	Critical path analysis with rolling wave detail	Choosing software settles every methodological choice

Element	Its practical function	Brambleford example	A common misunderstanding
Tool	Provides data structures and calculation functions	The employer's approved scheduling application	A calculation is reliable because software produced it
Model	Represents this project's delivery plan and assumptions	Linked design, supply, installation and test activities	A list of manually fixed dates is automatically a responsive model
Instance	Preserves an identifiable calculated version	The controlled month-six update	A saved file needs no status date or version context
Presentation	Shows information needed by a particular audience	Sponsor milestone report or team look-ahead	A bar chart contains all the reasoning behind its dates

Target, baseline, forecast and scenario

A target expresses an intended result. A baseline establishes the authorised reference against which performance and change can be assessed. A forecast expresses the expected future position using current information and stated assumptions. A scenario explores what might happen under a different set of conditions. These working distinctions prevent four different management questions from collapsing into one date. A team can reasonably retain an ambitious target while forecasting a later completion, provided the difference and the action needed to close it are visible. Changing a forecast is not, by itself, authority to replace the baseline.

Schedule baseline. 'The approved version of a schedule model that can be changed using formal change control procedures and is used as the basis for comparison to actual results.'
(PMI, 2019, p. 189)

Suppose the Brambleford sponsor wants a work package available at the end of week nine, while the currently approved plan finishes at the end of week ten. New supplier information suggests week eleven. A scenario with an additional installation crew produces a possible week-ten finish, subject to access and cost checks. Each date tells a different story: an aspiration, an authorised reference, a current expectation and a conditional alternative. Reporting only the most favourable number would conceal the decision. Reporting all four without explaining their status would create confusion. The professional task is to present a coherent recommendation with the evidence and authority associated with each position.

Illustrative work-package completion

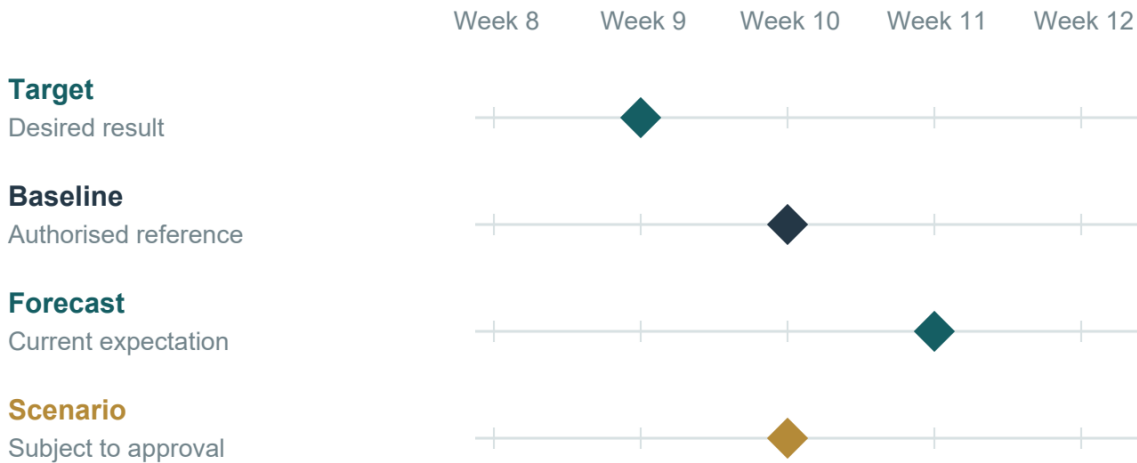


Figure 3. Illustrative teaching dates for a separate work-package scenario from the network in Figure 5. This is not a probability distribution. A scenario becomes an authorised plan only through the relevant review and decision process.

1.3 Selecting a life cycle that matches the work

Predictive planning and the stability of requirements

A predictive life cycle is useful when enough is understood about the required output and delivery method to plan much of the work before execution. It does not imply that change is impossible or that the original plan should never be challenged. A civil foundation package may use a predictive sequence because its design requirements, construction activities and inspections can be established in advance. The resulting model still needs to respond to actual progress, changed conditions and approved changes. Predictive planning is an approach to organising knowledge and commitments, not a claim that the future is certain (PMI, 2019, pp. 10-14).

The amount of useful advance planning depends on the quality of available information. Drawing a highly detailed sequence for a technical solution that has not yet been established can create an impression of certainty without increasing understanding. Conversely, describing mature, tightly constrained work as uncertain can become an excuse for avoiding necessary coordination. The planner should investigate what is genuinely known, what can be resolved before commitment and what must be learned through delivery. The question is not whether detailed planning is desirable in the abstract, but where detail has a defensible basis and a useful purpose.

Iterative and incremental delivery

An iterative approach develops understanding through repeated refinement. A design team may build and test a prototype, obtain feedback and improve the design before committing to the final version. An incremental approach delivers usable portions progressively. A digital monitoring system might release an initial operating dashboard and then add additional functions. These characteristics can coexist, but they answer different questions. Iteration concerns how the work is improved; increments concern how value is delivered in usable portions. Repeating an internal design review does not automatically create an increment that a customer can use.

At Brambleford, the civil works may be largely predictive while the operator interface benefits from iterative demonstrations. The team could test a mock-up with operators, discover that alarm

messages are confusing and revise the display before the final configuration. If the monitoring capability can be safely released in usable stages, incremental delivery may also be possible. The schedule must show where these learning cycles interact with fixed physical interfaces and acceptance requirements. Labelling one workstream 'agile' does not remove the need to coordinate it with procurement, commissioning and operational changeover.

Adaptive and hybrid delivery

Adaptive approaches organise work to accommodate continuing discovery and changing priorities. PMI explains adaptive life cycles through combinations of iterative and incremental characteristics and discusses both iteration-based and flow-based ways of working. Hybrid delivery combines characteristics where different parts of the project need different arrangements (PMI, 2019, pp. 12-13, 21-23). A hybrid design should therefore explain the boundaries, handovers and decision rules between approaches. Simply combining meetings and documents from several methods is not enough to show that the resulting system is coherent.

Research supports taking the choice seriously rather than treating hybrid delivery as a compromise of lesser quality. Gemino, Reich and Serrador (2021) examined 477 projects across industries and countries. Their observational analysis associated hybrid and agile approaches with stronger stakeholder outcomes than the study's traditional category, while time, budget, scope and quality outcomes were similar. This does not establish that adopting a hybrid label causes success. Mirzaei, Mabin and Zwikael (2025), drawing on ten qualitative case studies, examined how organisations combined practices in relation to team type, project goals and coordination needs. Together, the studies support an evidence-based selection conversation; neither supplies a universally best arrangement for every project.

The planner should ask whether requirements are sufficiently stable, how quickly useful feedback can be obtained, whether partial outputs can be used safely, and how strongly the work depends on external approvals or physical interfaces. Some activities can be reprioritised at short notice; others require an agreed outage or a long manufacturing lead time. A project may therefore use a predictive master schedule to coordinate major commitments while planning the detail of a software or design workstream adaptively. The master schedule must represent the workstream's deliverables and interfaces without pretending that every future task is already known.

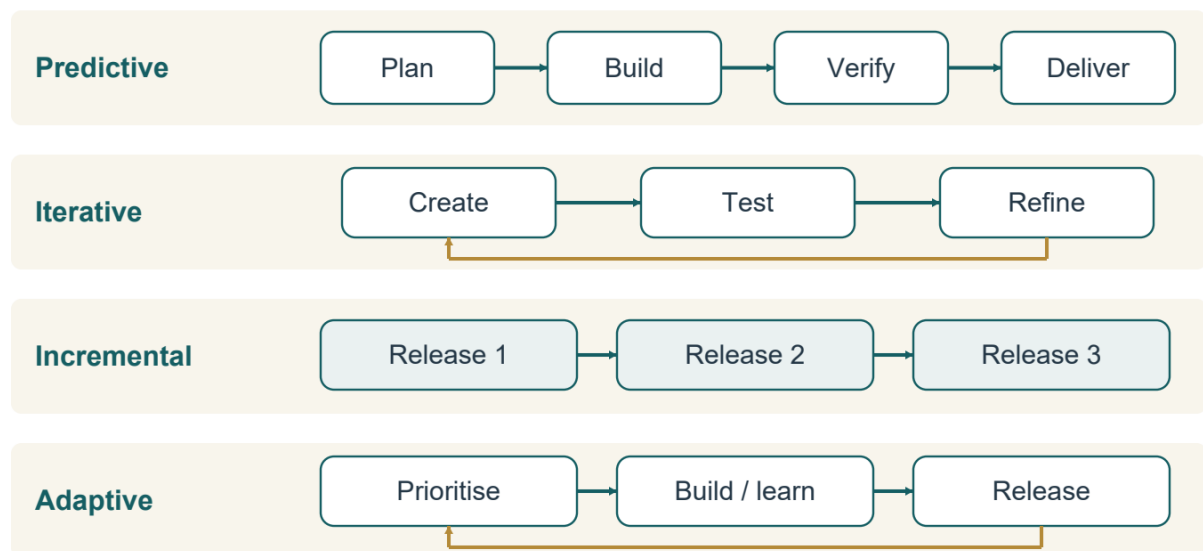


Figure 4. Original conceptual illustrations. Predictive work uses an established sequence; iterative work refines a solution; incremental work releases usable portions; adaptive work combines learning and delivery. Real projects may combine these patterns.

Life cycle	When it can be useful	What the schedule must make visible	Limitation to examine
Predictive	Requirements and delivery methods are sufficiently understood	Planned sequence, dependencies, commitments and update rules	Early assumptions may be treated as settled facts
Iterative	Feedback is needed to refine a solution	Learning cycles, reviews and criteria for proceeding	Repeated refinement may continue without clear decision points
Incremental	Usable portions can be delivered progressively	Release content, interfaces and acceptance for each increment	Partial delivery may create integration or operational burdens
Adaptive	Discovery and prioritisation continue during delivery	Short planning horizons, flow or iteration controls and forecasts	Flexibility can be overstated where external commitments are fixed
Hybrid	Different workstreams need different arrangements	Boundaries, integration milestones and compatible control rules	Unclear handovers can leave dependencies unmanaged

A practical selection conversation

Before selecting a life cycle, bring the people who understand the work into the conversation. Ask what can be specified now, what evidence could change the solution, which decisions are expensive to reverse, and what the receiving organisation could actually use at intermediate stages. Then test the proposed approach against contractual, operational and safety conditions. For Brambleford, this discussion might support predictive planning for civil works, iterative development of the operator interface and a controlled integrated commissioning sequence. The resulting choice should be recorded as a reasoned design decision, with conditions for review if the project changes.

For PMI-SP preparation, retain the principle that all these approaches require planning. Their differences concern the timing, detail and form of planning and the way new information is incorporated. A question presenting adaptive work as having no schedule, no dependencies or no control is likely to be hiding a conceptual error. At Level 6, extend the reasoning by explaining how the selected approach fits the actual workplace context and what evidence would justify choosing differently. That explanation is more useful than claiming that one method is universally modern, efficient or superior.

1.4 Introducing the principal scheduling approaches

Critical path and the consequences of dependence

Critical path. 'The sequence of activities that represents the longest path through a project, which determines the shortest possible duration.' (PMI, 2019, p. 178)

Critical path method. 'A method used to estimate the minimum project duration and determine the amount of scheduling flexibility on the network paths within the schedule model.' (PMI, 2019, p. 178)

The apparent contradiction between the longest path and the shortest possible project duration is resolved by considering dependence. Several streams of work may proceed in parallel, but a common successor must wait for every required predecessor. The longest connected stream therefore sets the earliest completion under the model's stated assumptions. Shortening a different stream may create more spare time without moving the finish. This is a statement about the model and its conditions, not a promise that the real project will finish at that point. Resource limits, calendars, constraints and uncertainty can affect the result and require further analysis.

The small Brambleford work package in Figure 5 makes this reasoning visible. Design and its acceptance review take two weeks. Panel manufacture then takes four weeks, while site preparation takes three weeks and can proceed in parallel. Installation takes one week after both are complete, followed by two weeks of integrated testing. Assume a common working calendar, finish-to-start relationships, no lags, adequate separate resources, no rework and no additional date constraints. The manufacturing route takes $2 + 4 + 1 + 2 = 9$ weeks. The site route takes $2 + 3 + 1 + 2 = 8$ weeks. The earliest finish under these assumptions is therefore the end of week nine, not the sum of every activity duration.

Brambleford: a simplified logic network

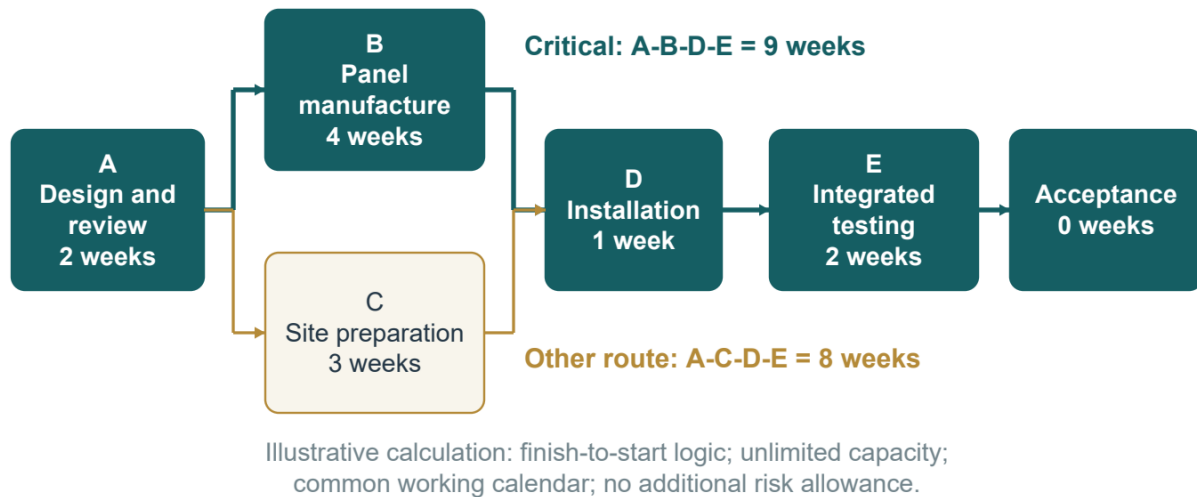


Figure 5. Fictional Brambleford example. The manufacturing route controls the finish under the stated assumptions. The model is deliberately small so that the reasoning can be checked without software.

If panel manufacture takes one week longer, the earliest finish moves to the end of week ten, because installation must wait. If site preparation takes one additional week, both branches finish together and the earliest overall finish remains week nine. That difference illustrates the value of logic: equally sized delays can have different consequences depending on where they occur. It also explains why average activity progress can be misleading. A team could complete considerable work on the shorter branch while making no improvement to the date controlled by the longer branch. Chapter 5 develops these calculations and their complications in detail.

Now change a resource assumption. If the same specialist crew must perform both panel manufacture and site preparation, the parallel model is no longer feasible as drawn. If the crew must finish the four-week manufacturing activity before undertaking the three-week preparation activity, the simple sequence becomes $2 + 4 + 3 + 1 + 2 = 12$ weeks. This is a deliberately artificial teaching constraint, not a typical staffing arrangement for such work. Its purpose is to show that a logical network can calculate correctly while representing impossible resource use. The planner must validate both the dependency structure and the capacity required to execute it.

Critical chain and protecting the delivery system

Critical chain approach. 'A schedule method that allows the project team to place buffers on any project schedule path to account for limited resources and project uncertainties.' (PMI, 2019, p. 178)

Critical chain brings resource dependence and protective buffers into the planning and control conversation. At an introductory level, the important distinction is that a resource can connect activities even where no technical dependency requires one to follow the other. If two packages both require the same scarce test team, they cannot necessarily proceed simultaneously. Protection also needs to be managed coherently: adding unexplained allowances to every activity can obscure the true sources of uncertainty and the decisions available to the team. Later chapters examine buffer placement and monitoring. Here, learners should recognise why limited capacity and uncertainty can make a purely logical, resource-unconstrained result insufficient.

Float and a buffer should not be treated as interchangeable words. Float arises from the relationships between network dates and paths, under the relevant calculation assumptions. A

buffer is a deliberate element of the selected planning approach intended to accommodate uncertainty or protect a commitment. Both can influence decisions, but they arise differently and should have clear management rules. A team that spends an allowance without understanding what it protects may improve a local appearance while weakening the overall delivery position. The professional question is which commitment the allowance supports and how evidence about its consumption will influence action.

Rolling wave and deliberate progressive detail

Rolling wave planning. 'An iterative planning technique in which the work to be accomplished in the near term is planned in detail, while the work in the future is planned at a higher level.' (PMI, 2019, p. 189)

Rolling wave planning is useful where distant work cannot yet be decomposed responsibly, even though its overall scope and interfaces must be recognised. At Brambleford, the next design and procurement activities may be planned in detail while later commissioning work remains in larger planning packages until supplier information is available. The absence of detailed tasks does not remove the need to allow for that work, its resources, its dependencies or the time required to develop the detail. A mature rolling wave approach identifies when the next package must be elaborated and who is responsible for supplying the necessary information.

It is possible to misuse this approach by leaving difficult work vague until there is too little time to prepare it. If a commissioning package is due to begin in six weeks but depends on an operating procedure that takes eight weeks to approve, the team has already missed an important planning decision. Progressive detail should therefore be governed by the lead time needed to make reliable commitments. The framework's questions about completeness and resources still apply at a higher level. Uncertainty about detail should be visible as a condition to resolve, rather than concealed by an empty section of the schedule.

Repetitive work, flow and location

Location-based and linear approaches can make the movement of work through space easier to understand. A pipeline, road or series of repeated fit-outs may require several crews to move through locations in a coordinated sequence. A conventional activity list can represent the work, but a time-location view may make crew interference, production rates and interruptions more visible. Line of balance similarly supports reasoning about repetitive output over time. These approaches are not automatically superior to critical path analysis; they reveal particular characteristics of the work and may be combined with other views (PMI, 2019, pp. 25-27).

Flow-based and lean approaches direct attention to the conditions under which work is released and the amount of work in progress. Starting more activities is not always the same as completing useful outputs sooner. If downstream capacity is limited, releasing additional work may increase queues, competing priorities and unfinished inventory. At Brambleford, starting configuration on several incomplete design packages could overload the same reviewer and delay final acceptance of all of them. A useful planning discussion asks which work is ready, what capacity can genuinely receive it and how the team will identify and remove constraints. Chapter 9 develops the corresponding tools and representations.

Approach	Main question it helps answer	Useful setting	What it cannot establish alone
Critical path	Which connected sequence controls the calculated finish?	Work with identifiable activities and dependencies	Feasibility of unlimited parallel resource use or certainty of duration
Critical chain	How do scarce resources and protective buffers affect delivery?	Work with material resource dependence	A reliable result without sound assumptions and buffer governance
Rolling wave	How much detail is useful now and when is more needed?	Work with progressively available information	That unidentified future work can be ignored
Location or line of balance	How do crews and production move through repeated locations?	Linear or repetitive delivery	Every approval, external dependency or non-repetitive interface
Adaptive or flow-based planning	How will learning, priorities and available capacity shape the next work?	Evolving requirements or repeated service flow	Freedom from external milestones, acceptance or resource limits

The comparison should end in a justified choice rather than a contest between labels. For the Week 1 workplace brief, select two plausible approaches and explain what each would make visible, what each might hide and what information you still need. A defensible early judgement can remain provisional. It is more useful to record the conditions under which a method would fit than to promise a complete scheduling strategy before examining the work.

1.5 Connecting the schedule with integrated project controls

Scope, resources, cost and risk

A schedule belongs within a wider controls system because decisions rarely affect time alone. A proposed acceleration might require extra expenditure, introduce congestion, change procurement terms or reduce the time available for testing. A cost saving might increase manufacturing duration or transfer work into a more constrained period. The model helps the team examine these relationships, but the decision requires information from the relevant disciplines. A planner should be able to explain where an assumption came from and whose judgement is needed to validate it, rather than regard the schedule as a separate technical product owned entirely by the planning function.

At Brambleford, consider bringing a panel delivery forward by two weeks. The supplier might be able to reserve an earlier production slot, but only if the design is accepted sooner. That decision could require additional design-review capacity and earlier expenditure. It might also reduce time for operator input, increasing the chance of later configuration changes. The delivery-date improvement is therefore conditional on a chain of technical, resource and commercial decisions. The appropriate recommendation sets out those conditions and compares the overall consequences. An unexplained date change in the schedule would hide the work needed to make it credible.

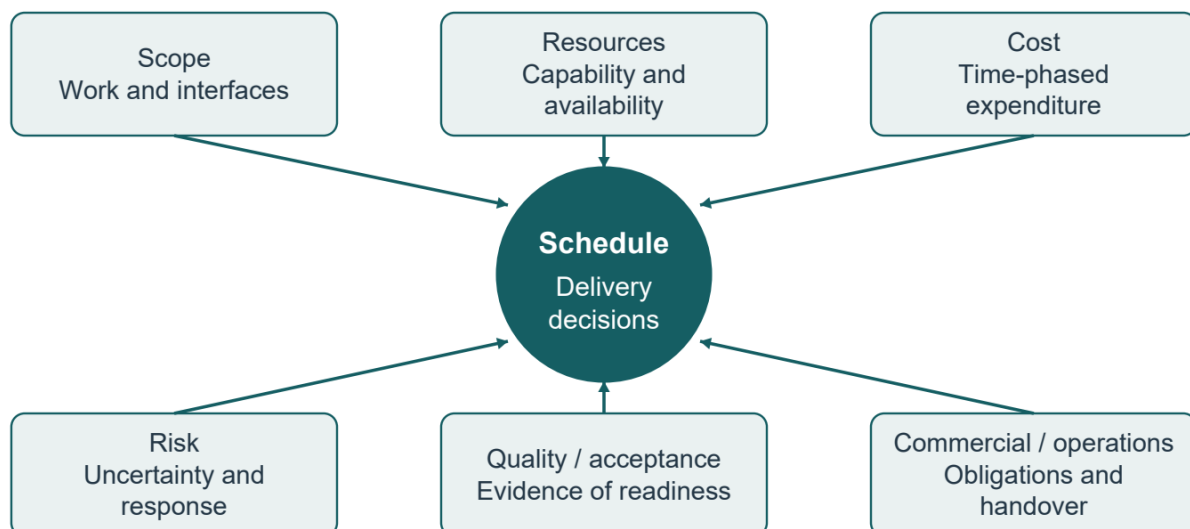


Figure 6. An original interface model. Each connection represents information and decisions that may change the schedule; the diagram does not imply that the scheduler holds every approval authority.

Decisions and information are scheduled work

Design reviews, client decisions, permits and acceptance activities can control delivery as strongly as physical production. They require inputs, competent reviewers and sufficient time. If an activity is labelled 'client approval' without an agreed submission standard or accountable decision-maker, the planner has recorded a hope rather than established a workable interface. The team should identify the information required, the review period, the process for comments and the condition that releases the successor work. This is especially important when a decision-maker supports several projects and their availability is a shared constraint.

The UK Infrastructure and Projects Authority's *Project Routemap: Systems Integration* provides an instructive positive case from the Francis Crick Institute. Its account describes planning sponsors' requirements and inputs through the life cycle, using board reporting to highlight forthcoming decisions and employing full-scale mock-ups to resolve user and interface questions. The guidance places systems integration within the client's responsibilities and encourages early visibility of problems (IPA, 2021, pp. 8, 22, 25). The transferable scheduling lesson is to plan the decisions and evidence that enable delivery, not simply the subsequent construction activities.

Germany case study planning the operational transition

The German Federal Government's account of Berlin Brandenburg Airport describes a staged transition: the airport opening on 31 October 2020, introduction of the south runway on 4 November and the closure of Tegel on 8 November. These events form a useful reminder that introducing a new asset and withdrawing an existing service can involve different dependencies and authorities (Federal Government of Germany, 2020). The government's account does not provide the complete underlying schedule, so the sequence should not be used to reconstruct a critical path or attribute a precise quantity of delay to a particular defect.

Germany's Federal Ministry of Transport also presents established major-project reform principles concerning early planning, transparent treatment of time and risk, clear responsibilities and collaboration. Its webpage was updated in 2026, but the recommendations it describes originated in 2015; they should not be mistaken for a newly issued 2026 standard (BMV, 2026). For Brambleford, the relevant application is to schedule the transition between old

and new pumping arrangements explicitly. The existing service may need to remain available until the replacement has passed agreed tests, operators are prepared and a controlled changeover has been authorised.

USA case study James Webb and the milestone beyond launch

In May 2021, GAO reported substantial technical progress on the James Webb Space Telescope alongside faster-than-expected consumption of schedule reserve. Its account identified remaining technical work, dependencies on launch partners and risks that would continue after launch. NASA had established arrangements for commissioning and contingency response (GAO, 2021, 'What GAO Found'). NASA's mission timeline records the actual launch on 25 December 2021 (NASA, n.d.). These sources describe different points in time: the audit's position before launch and the subsequent recorded event. The earlier report should not be treated as a current forecast.

For scheduling education, the case distinguishes a prominent public milestone from the whole sequence required to achieve the intended capability. Launch, deployment, commissioning and scientific use are related events with different evidence. A commercial or infrastructure project has its own technical conditions, but the same planning question is useful: what remains after the headline milestone, and who controls that work? At Brambleford, delivery of the control panel is significant, yet installation, integrated testing and operational acceptance remain. The scheduler should make those successors visible instead of allowing the arrival of a major component to stand for completion of the work package.

Interfaces need owners as well as arrows

A logical link establishes an analytical relationship; it does not necessarily establish an effective working agreement. If a supplier must provide a test certificate before commissioning, someone must know the required content, delivery date, review route and escalation process. A predecessor labelled 'certificate received' can conceal several activities: preparation, checking, submission, review and correction. The appropriate detail depends on risk and importance, but the responsibilities should be clear even where the schedule uses a summary representation. Interface ownership connects the model with the people who can make its assumptions true.

This is where the PMI-SP foundation develops into Level 6 practice. A learner should be able to explain why a particular interface deserves attention, evaluate the adequacy of the evidence and recommend a proportionate improvement. That might mean agreeing a common calendar, clarifying acceptance criteria, establishing a review lead time or reconciling two contractors' different definitions of completion. The improvement need not involve sophisticated software. Its value should be visible in the quality of coordination, the credibility of the forecast or the speed with which an important decision can be made.

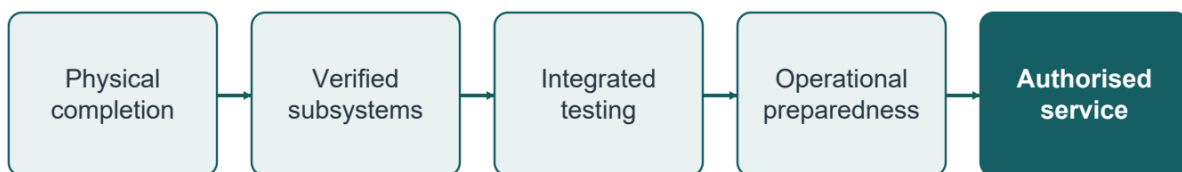
1.6 Testing the credibility of milestones

Applying the six evidence tests

Begin with the acceptance test: describe what will be true at the milestone and how the receiving party will know. Then examine completeness: identify the work, documentation, decisions and interfaces needed to reach that state. Test the sequence by asking whether the dependencies represent the delivery method and whether any assumed parallel working is possible. Test resources and conditions by examining capacity, calendars, access, supply and operating constraints. Test uncertainty by considering the reliability of durations, the possibility of rework and the effects of unresolved assumptions. Finally, test assurance and ownership by identifying who has challenged the evidence and who can authorise the commitment.

These tests should produce an intelligible argument rather than a decorative score. A statement such as 'the milestone passed five out of six checks' could be dangerously reassuring if the failed check concerns a legal access restriction or an unavailable commissioning team. The significance of a gap depends on what it controls. A useful review distinguishes evidence that is available, assumptions awaiting confirmation, gaps that prevent a commitment and actions that could resolve them. It also records the date of the evidence, because a resource commitment or supplier forecast may change after the review.

Illustrative readiness states



Evidence may reveal rework or further testing. Criteria and approval requirements depend on the project, its sector and its contract.

Figure 7. Illustrative readiness conditions for teaching. Actual projects may overlap or repeat these activities and must use their own contractual, technical and regulatory acceptance requirements.

UAE case study Barakah and staged readiness

Barakah Unit 4 supplied its first electricity to the UAE grid on 23 March 2024. The plant owner explained that progressive power testing would follow grid connection. Commercial operation was announced on 5 September 2024 by the Abu Dhabi Media Office (ENEC, 2024; Abu Dhabi Media Office, 2024). These are distinct milestones, each with a different meaning. Their separation is not evidence of a delay between two versions of the same commitment. The announcements support the dated events and the presence of testing between stages; they do not independently demonstrate performance against the original contractual baseline.

The application to a learner's project is to replace broad expressions such as 'plant complete' with identifiable acceptance states. A first successful output may demonstrate one capability while further testing, operating evidence or authorisation remains necessary. The schedule should identify the work that supports each state and the external interfaces that can control it. This is a conceptual transfer, not an assertion that a pumping station and a nuclear power plant share the

same regulatory process. Sector-specific requirements must come from the relevant project authorities and technical specialists.

Egypt case study the Grand Egyptian Museum

Egypt's State Information Service announced in October 2024 that a partial trial run of the Grand Egyptian Museum would begin on 16 October. A later official account records the inauguration ceremony on 1 November 2025 (SIS, 2024; SIS, 2025). The first source is an advance announcement of a trial; the second records an inauguration. They do not establish an original completion baseline or support a delay calculation merely by subtracting the dates. Their value for scheduling is the distinction between testing selected operations and reaching a separately defined public milestone.

For Brambleford, a trial run could reveal how the system behaves under controlled conditions and whether operating arrangements need refinement. Acceptance for routine service would require the agreed evidence to be complete. A ceremonial opening, if one exists, would be another event with its own dependencies. Keeping these milestones separate helps the organisation make decisions about what can safely proceed and what remains conditional. It also prevents a report from appearing to improve performance simply by changing the meaning of 'open'. The same discipline applies when comparing projects internationally: apparently similar milestone names may refer to different operational states.

France case study comparing the same milestone

The French Cour des comptes' 2025 report on the EPR programme presents successive Flamanville 3 targets, including entries referring to grid connection and others referring to fuel loading. Those labels must be preserved when comparing dates (Cour des comptes, 2025, p. 27, Table 1). EDF recorded first grid connection on 21 December 2024. The nuclear regulator's account explains that commissioning authorisation governed successive power-increase stages and the performance of start-up tests (EDF, 2024; ASN, 2025, p. 14). Fuel loading, first criticality, grid connection and full operating capability should therefore not be silently treated as the same event.

The professional lesson is about data identity as much as dates. A baseline milestone should have a stable description, an agreed acceptance condition and a traceable identifier. If its meaning changes, the change must be visible before a variance is calculated. Otherwise, a report may compare unlike events and produce an apparently precise result that answers the wrong question. This does not require elaborate technology: even a short milestone register can record the reference, definition, owner, evidence and version. The essential discipline is to preserve what the date represents.

What uncertainty changes about the argument

A calculated finish is conditional on the model's assumptions. It is not automatically a confidence statement. Two alternative schedules can have the same deterministic finish while exposing the project to different combinations of uncertain durations, resource conflicts or converging paths. Acebes and colleagues (2021) examined this distinction through methods tested on scheduling benchmark problems. Their work illustrates why planned duration alone is insufficient to characterise execution risk. It does not establish a universal improvement percentage for real projects, and the quality of any risk result still depends on its input assumptions.

At this stage, learners do not need to calculate a probability distribution. They should be able to identify which uncertainties could alter the result and what evidence would improve understanding. If a specialist supplier gives a delivery estimate without confirming material availability, record that condition. If several workstreams must finish together before testing can start, ask what happens if one is late. If the sponsor requests a commitment with high confidence, explain why a single deterministic calculation may not answer the question. Chapter 8 will develop quantitative schedule risk analysis, including the interpretation of confidence dates.

Historical comparison can also challenge an internal forecast. Baerenbold's (2023) review of 41 papers on reference class forecasting identifies both its potential and the importance of relevant, reliable comparison data. Much of the reviewed literature concerns large infrastructure and cost forecasting, with less attention to schedules. It does not demonstrate that the technique always outperforms alternatives. For a planner, the useful introductory practice is to ask how comparable completed work performed, whether its scope and conditions genuinely resemble the proposed work and which differences must be explained before transferring an estimate.

Australia case study an executable plan across organisations

The Australian National Audit Office's 2025 OneSKY audit recorded that a February 2023 integrated baseline review could not provide assurance over the schedule. Remediation required a credible, resourced contractor delivery schedule and an integrated master schedule covering programme delivery. The report later recorded completion of relevant remediation actions, but this was not equivalent to system acceptance (ANAO, 2025, Table 2.4 note a and paragraphs 2.53-2.58). The distinction matters: producing or improving a planning product is a management action, while delivery of the intended capability remains a separate result.

For ALWI-11, this case encourages learners to examine the boundary between their own organisation's work and its suppliers or partners. A contractor may have an internally coherent plan that does not contain all the customer's training, transition or acceptance activities. The customer's milestone may therefore require a wider integrated view. The learner should identify the missing interfaces, agree who owns them and explain how the schedules will be reconciled. The audit does not prove that schedule quality alone caused every programme difficulty; it provides concrete evidence of the need to assure connected plans rather than inspect each file in isolation.

Official case	Distinction that matters	Question to transfer into practice
Crossrail in England	Reported construction progress and complete readiness evidence	What essential work or assurance could be missing from the progress measure?
James Webb in the USA and international partnership	A headline milestone and the work that follows it	Which external dependencies and remaining stages still control capability?
Barakah in the UAE	First grid connection and commercial operation	Which tests and acceptance conditions separate the milestones?
OneSKY in Australia	Individual contract plans and integrated delivery	Who owns the interfaces between organisational schedules?

Official case	Distinction that matters	Question to transfer into practice
Flamanville in France	Different milestone meanings within a history of target dates	Are baseline, forecast and actual dates describing the same event?
BER in Germany	New-facility opening and operational transfer	How are introduction, transition and withdrawal of the old service connected?
Grand Egyptian Museum in Egypt	Trial operation and official inauguration	What precisely does each readiness claim permit the organisation to do?

The comparison identifies planning questions, not a ranking of national performance. Sources and evidence boundaries are explained in the accompanying case discussions.

1.7 Professional judgement and the first ALWI contribution

Making an honest recommendation

The scheduling professional works with people who may have different incentives, incomplete information and strong preferences about dates. Professional judgement involves listening carefully, testing the evidence and explaining what follows from it without overstating confidence. A sponsor's desired date deserves to be understood because it may protect a contractual opportunity or an operational need. It should then be tested against the work and available choices. Equally, a pessimistic forecast should not be accepted merely because it appears cautious. It requires the same scrutiny of scope, logic, productivity and assumptions as an optimistic one.

An honest recommendation connects the current evidence with a decision. It might support the proposed milestone, recommend a conditional commitment, request a specific investigation or explain why the date is not presently justified. The recommendation should identify who can act, when the decision is needed and what consequence follows from waiting. Where the learner lacks approval authority, the appropriate action is to provide a clear analysis and escalation route. Demonstrating competence does not mean making commitments on behalf of other people; it means making the decision easier to assess and the remaining uncertainty harder to overlook.

A workflow for keeping the plan credible

The working cycle in Figure 8 begins by establishing the objective and evidence, then develops a model that represents the proposed delivery approach. Challenge follows before commitment: delivery specialists, resource owners and receiving parties test whether the assumptions are defensible. An authorised baseline or other agreed reference then supports execution and observation. Actual progress, new information and approved changes feed back into the model. The cycle preserves both accountability and learning. It allows the organisation to understand why its expectation has changed without erasing the history of earlier decisions.

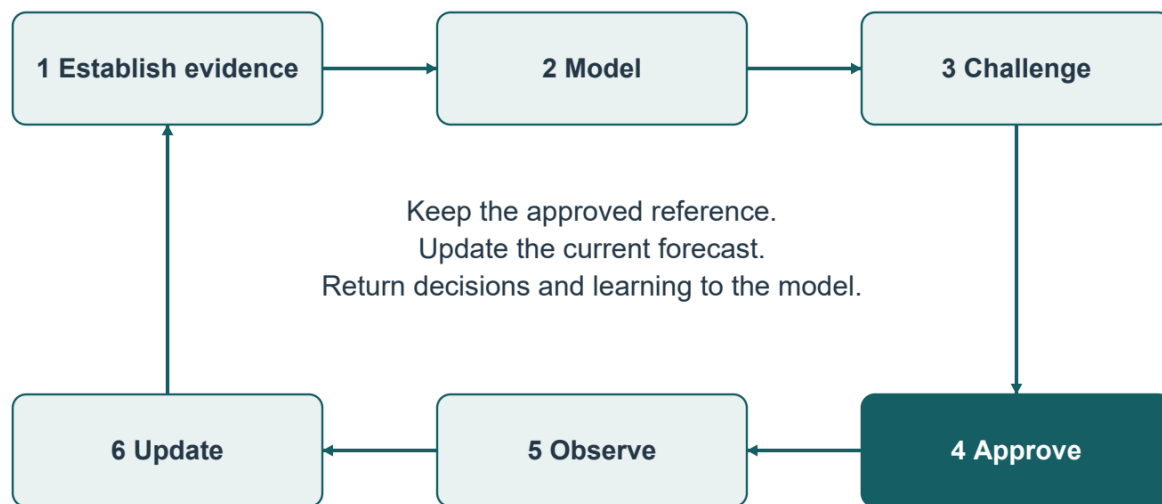


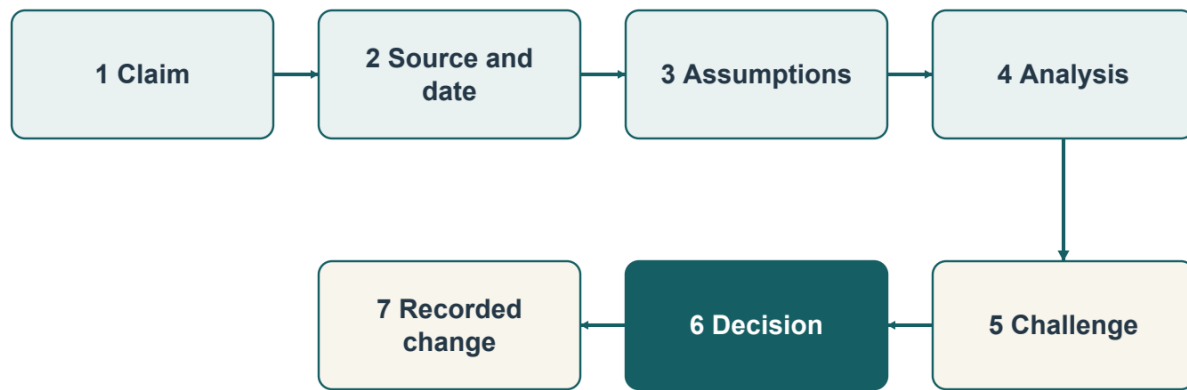
Figure 8. Original teaching workflow. Formal approval and change authority remain those of the employer; updating information does not itself authorise a baseline change.

A practical control cycle needs proportionate evidence. A short work package may be managed with a modest model and a concise narrative, while a major integrated project may require several levels of planning and specialist analysis. In both cases, a report should identify the date of the information, explain meaningful variances and make required decisions visible. Regular reporting should not become a ritual in which people repeat numbers whose origin nobody checks. If an update does not change a decision, confirm an assumption, expose a problem or preserve a useful record, the team should reconsider what purpose it serves.

Evidence, technology and personal responsibility

Digital tools can help calculate dates, identify logic problems, compare versions and prepare presentations. AI may help organise information or suggest questions, but it does not establish that the underlying activities, resource commitments or acceptance conditions are correct. A learner who uses an automated suggestion should be able to explain how it was checked and why it was accepted or rejected. Sensitive workplace information must remain within the employer's authorised arrangements. The professional responsibility for the analysis and its use cannot be transferred to a tool that does not understand or own the delivery commitment.

Figure 9 shows a simple evidence chain. Begin with the claim, identify its source and date, make assumptions visible, explain the analysis, record the challenge and show the decision or change that followed. The chain need not produce a large document. A clear annotated schedule extract, a relevant source record and a short explanation of personal reasoning may provide stronger evidence than many pages of unconnected screenshots. What matters is whether another competent person can follow the argument, recognise its limitations and understand the apprentice's contribution.



Trace the reasoning, not just the reported date

Figure 9. Original evidence model for workplace learning. The sequence supports an explanation of competence; it does not determine automatic acceptance of any item in an EPA portfolio.

The Week 1 workplace brief

Your first ALWI-11 contribution is a focused brief for a real project or substantial work package. Describe the delivery objective, the current planning difficulty and the decision that better scheduling could support. Identify the people who own scope, resources, technical acceptance and delivery commitments. Explain which records and scheduling tools you can access, what work you personally expect to undertake and how the employer could benefit. At this stage, do not promise a complete schedule or a risk-confidence result that you have not yet analysed. Establish a credible starting point and an agreed opportunity to improve practice.

The brief should include an initial comparison of two plausible scheduling approaches, supported by the characteristics of the work. Record the principal assumptions and information gaps, then identify the next evidence to obtain. A useful starting question is whether the existing plan enables somebody to explain the proposed completion milestone. If it does not, describe the missing connection: perhaps acceptance is vague, a supplier interface is absent, resources have not been checked or updates cannot be traced to evidence. That diagnosis will guide the planning framework developed in Week 2 and the model built through later chapters.

The assignment's focused knowledge and skills are K22, S20 and S21 within the planning and scheduling theme of the Project Controls Professional Level 6 assessment plan. This chapter begins the evidence; it does not demonstrate all those requirements on its own. The learner will progressively develop method and level comparisons, a planning framework, a control schedule, supporting resource and risk analysis, a basis of schedule and an assurance-backed recommendation. The final assignment remains one coherent workplace improvement account. Learning reflection and development planning belong in the college learning record, separate from evidence selected for the EPA portfolio (Skills England, 2025, pp. 6-7, 23-24).

Part of the Week 1 brief	What a strong response explains	Evidence to seek
Workplace context	The output, receiving party and relevant delivery decision	Scope statement and acceptance information

Part of the Week 1 brief	What a strong response explains	Evidence to seek
Planning problem	Why the current schedule or planning arrangement limits decisions	A dated example of the gap or inconsistency
Initial approach comparison	Why two methods could fit and what would distinguish them	Work characteristics and stakeholder needs
Access and contribution	What the learner can examine and improve personally	Agreed access, responsibilities and employer support
First improvement actions	Which information gaps should be resolved next and why	Named evidence owners and proportionate next steps

Keeping PMI-SP preparation in view

The current PMI-SP examination outline has five domains: schedule strategy, planning and development, monitoring and controlling, closeout, and stakeholder communications management. Chapter 1 establishes concepts used across those domains, with particular emphasis on strategy and the reasoning behind model development. Later chapters deepen the techniques and control tasks. The published domain weights are 14, 31, 35, 6 and 14 per cent respectively, so monitoring and control require sustained practice rather than a single final revision session (PMI, n.d.a). The examination outline remains the scope reference; the chapter's original frameworks organise learning without replacing it.

The current examination information lists 170 questions over 210 minutes. Eligibility also depends on the applicant's education and relevant scheduling experience, so completing this module does not itself establish eligibility (PMI, n.d.b). For learning purposes, begin with accurate distinctions and situational judgement before trying to memorise every software field. Ask what the scenario establishes, what evidence is missing, which action is within the scheduler's role and which option improves the reliability of the plan. Numerical confidence is valuable only when the underlying model and assumptions justify it.

Applying the chapter at Brambleford

The six week opening statement

In this fictional exercise, the project manager tells the steering group that the new operating arrangement is '92 per cent complete and ready to open in six weeks'. You are asked to prepare a short scheduling assessment before that statement is repeated in the sponsor's report. The following information is all that has been verified. The figures are deliberately incomplete: the task is to identify what can be concluded and what must be investigated, rather than invent a new completion date from insufficient information.

Evidence available today	What it establishes	What remains unresolved
Building fit-out is recorded as 92 per cent complete	Most measured fit-out quantities are reported complete	Whether remaining work blocks systems access or testing
Forty per cent of planned integrated tests have passed	Some test evidence exists	Test dependencies, failed tests, rework and remaining durations
Operator training has not started	Training remains outstanding	Trainer availability, prerequisites and acceptance requirements
Access permission for changeover is unconfirmed	A key operating condition is unresolved	The decision owner, decision date and alternatives

Write a briefing of approximately 300 words that applies the six evidence tests. Begin by identifying the milestone whose credibility is being assessed. Explain why the fit-out percentage alone does not establish opening readiness, identify the most important missing evidence and propose a small number of prioritised verification actions. Name the roles that should contribute, without inventing individuals or approval authority. Finish by stating what the steering group can responsibly say now and what conditions would support a firmer commitment. This is a formative case exercise; it is not an additional ALWI submission.

A strong response would explain that the available information does not establish whether six weeks is achievable. It would avoid both accepting the date without challenge and declaring a delay without analysis. It would seek a reconciled remaining-work plan covering integrated testing, any corrective work, operator preparation and the authorised changeover window. It would also establish the meaning of 'open', the receiving authority and the evidence needed for acceptance. Those actions improve the basis for a forecast. The response should distinguish the present evidence gap from a calculated conclusion about the eventual finish.

For a short discussion, consider what would change if the training team became available only after week seven, or if access permission were confirmed for a single weekend in week six. Neither fact can be interpreted properly without the dependency structure and acceptance conditions. Training might need to precede service, or a controlled phased arrangement might be possible if the authorised requirements allow it. The access window might create a binding constraint or permit an alternative sequence. Explain what you would investigate and who must judge the technical acceptability; do not make that judgement on their behalf.

Knowledge check and examination practice

These questions are original learning questions aligned with the chapter's concepts. They are not recalled or endorsed PMI examination items. Attempt them before reading the explanations. For each answer, identify the evidence in the question that makes your choice preferable and the assumption that makes a tempting alternative unsound.

Question 1 The sponsor view

A planner calculates and saves the month-four schedule, then exports a milestone chart for the sponsor. What is the chart in PMI's terminology?

- A** The scheduling method.
- B** The scheduling tool.
- C** A schedule presentation.
- D** The complete schedule model.

Question 2 An accepted milestone

A team has a zero-duration milestone called 'system accepted'. The acceptance review takes three working days. What is the most appropriate treatment?

- A** Remove the review time because the milestone has zero duration.
- B** Represent the review work and its dependencies before the acceptance milestone.
- C** Add the three days to every preceding activity.
- D** Assume acceptance occurs when installation finishes.

Question 3 The two route network

Using Figure 5's stated assumptions, design takes two weeks, panel manufacture four, site preparation three, installation one and integrated testing two. Manufacture and site preparation run in parallel after design. What is the earliest finish?

- A** Twelve weeks.
- B** Eight weeks.
- C** Ten weeks.
- D** Nine weeks.

Question 4 A resource assumption changes

The two parallel branches in Figure 5 now require the same specialist crew, which can work on only one branch at a time. What should the planner do first?

- A** Re-examine resource feasibility and model an achievable sequence.
- B** Keep the original date because the logical links have not changed.
- C** Shorten both durations without new evidence.
- D** Change the baseline immediately to remove the problem.

Question 5 Choosing an approach

A project has stable civil works but an operator interface that needs repeated user feedback. Which response is most defensible?

- A** Avoid planning the interface until the civil works finish.
- B** Use one approach everywhere regardless of the work.
- C** Consider a hybrid arrangement and define the interfaces between planning approaches.
- D** Remove the interface work from the master schedule because its detail may change.

Question 6 An uncomfortable forecast

The latest evidence supports a later finish than the approved baseline. The sponsor still wants the original date. What should the scheduler do?

- A** Replace the baseline with the forecast without approval.
- B** Explain the variance, assumptions and feasible response options while preserving change control.
- C** Report the requested date as the forecast.
- D** Stop updating until the sponsor changes the target.

Question 7 A detailed schedule

A contractor submits a schedule with thousands of activities. Which fact would most strengthen confidence in its delivery milestone?

- A** Every activity has a different colour.
- B** The file is larger than the previous version.
- C** All dates match the client's desired finish.
- D** Scope, logic, resources and acceptance assumptions have been checked using relevant evidence.

Question 8 Comparing milestone history

A report compares a baseline fuel-loading date with an actual grid-connection date and calls the difference schedule variance for one milestone. What should be checked first?

- A** Whether both dates describe the same defined event.
- B** Whether the actual date can be renamed to match the baseline.
- C** Whether the earlier event can be removed from the record.
- D** Whether the difference looks large enough to report.

Answer explanations

1 C. The chart is a presentation drawn from a saved instance. A is the analytical approach; B is the application supporting calculation; D is the underlying representation containing more information than the exported view. The distinction supports traceability from what the sponsor sees to the model and data that produced it.

2 B. The milestone represents the acceptance event, while the review activity represents time-consuming work. A omits real work. C adds unsubstantiated time and may count the review repeatedly. D substitutes installation for acceptance without evidence. Zero-duration modelling of the milestone does not remove the work necessary to achieve it.

3 D. The controlling route is $2 + 4 + 1 + 2 = 9$ weeks. A adds both parallel branches as though sequential. B follows the shorter branch and ignores the required panel. C adds a week not justified by the stated model. Later resource, calendar or risk information could change the result, but must not be invented in answering this question.

4 A. The previous parallel arrangement no longer has a supported capacity assumption. B ignores that change, C invents a productivity improvement, and D confuses investigating a forecast with authorising a baseline revision. The planner should first understand the resource constraint and analyse feasible alternatives.

5 C. The choice responds to different learning and coordination needs while keeping interfaces visible. A postpones necessary learning; B ignores context; D hides a real dependency. A hybrid label is not sufficient by itself: roles, cadence, deliverables and acceptance conditions must still be established.

6 B. Forecasting should reflect current evidence and explain the decision required. A removes the approved reference without authority, C conceals the discrepancy between desire and expectation, and D prevents useful control. A target may remain while the team investigates credible ways to achieve it.

7 D. Credibility comes from the supporting evidence and model quality. A may improve presentation but not feasibility; B measures file size; C establishes agreement with a requested date without explaining how it can be achieved. Activity count is useful only where the detail represents necessary, maintainable planning information.

8 A. A meaningful comparison requires stable milestone identity and acceptance meaning. B changes a label without resolving the difference, C destroys relevant history, and D considers materiality before establishing validity. Dates for different events may both be correct while their subtraction answers no useful variance question.

Preparing for the next chapter

Bring the Week 1 workplace brief, a current schedule or planning example and the main information gaps to the next session. Chapter 2 will turn the selected improvement opportunity into a live planning framework. The questions will become more specific: who owns the model, which levels are needed, how information moves between organisations, what constitutes an acceptable update and who can approve a change. Keep the six credibility tests beside that work. Their purpose is to ensure that the framework supports a delivery decision that people can understand, challenge and act upon.

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