OVERVIEW

Introduction to Software Project Management

Chapter 1 gives the vocabulary for the whole course. It defines project management, places it in history, describes what a project manager does and needs to be good at, and then works through the PMBOK 7 standard: the 12 principles (how to behave) and 8 performance domains (what to manage), the key terms (portfolio, program, project, product, outcome, value), the system for value delivery with its governance, functions and environment, and how product management relates to projects. The last part gives each principle its own card.

Principles vs. domains

12 principles guide behaviour (stewardship, team, value, systems thinking…); 8 performance domains are areas of focus that run at the same time. Neither is a set of steps.

Portfolio, program, project

Portfolio = grouped for strategy (may be unrelated, includes operations). Program = related projects for extra benefits. Project = temporary + unique.

Value chain

Components → deliverables → outcomes → benefits → value. Value is the ultimate measure of success.

Coordination

Decentralized: authority spread across a self-organizing team. Centralized: a designated PM leads. Both can be mixed.

HOW THE LECTURE IS ORGANIZED

Slides 1–6 What project management is and why it matters

Slides 7–13 History, PMOs, global issues, certification, ethics

Slides 14–18 Project managers: responsibilities, skills, competencies, advantages of formal PM

Slides 19–28 PMBOK: the standard, 12 principles, 8 domains, key terms

Slides 29–45 The system for value delivery: value, information flow, governance, functions, environment

Slides 46–52 Product management considerations

Slides 53–70 The 12 principles in detail

EXAM FOCUS

Midterm 251 (both versions) took six MCQs from this deck: decentralized decision-making, program, performance domains, stewardship, system for value delivery, and (from 1.2) cadence. The instructor's 2026 midterm asked project vs. product management and two principle scenarios (Focus on Value; system interactions). Finals asked about constraints, the PMO, and PM vs. general management. She tests application, so expect scenarios that name a situation and ask which principle, term or coordination style applies.

HOW TO READ THIS PAGE

Every original slide is shown unchanged. Yellow marks on a slide point to a numbered note: hover or tap a mark to jump to its note, and hover a note to see its marks. Questions tagged Past exam appeared on a real paper; Prediction questions are likely angles, not confirmed. Pick an answer to each question: a wrong pick tells you why it is wrong, so you can try again.

 Slide 1



Introduction

SE423: Software Project Management

1

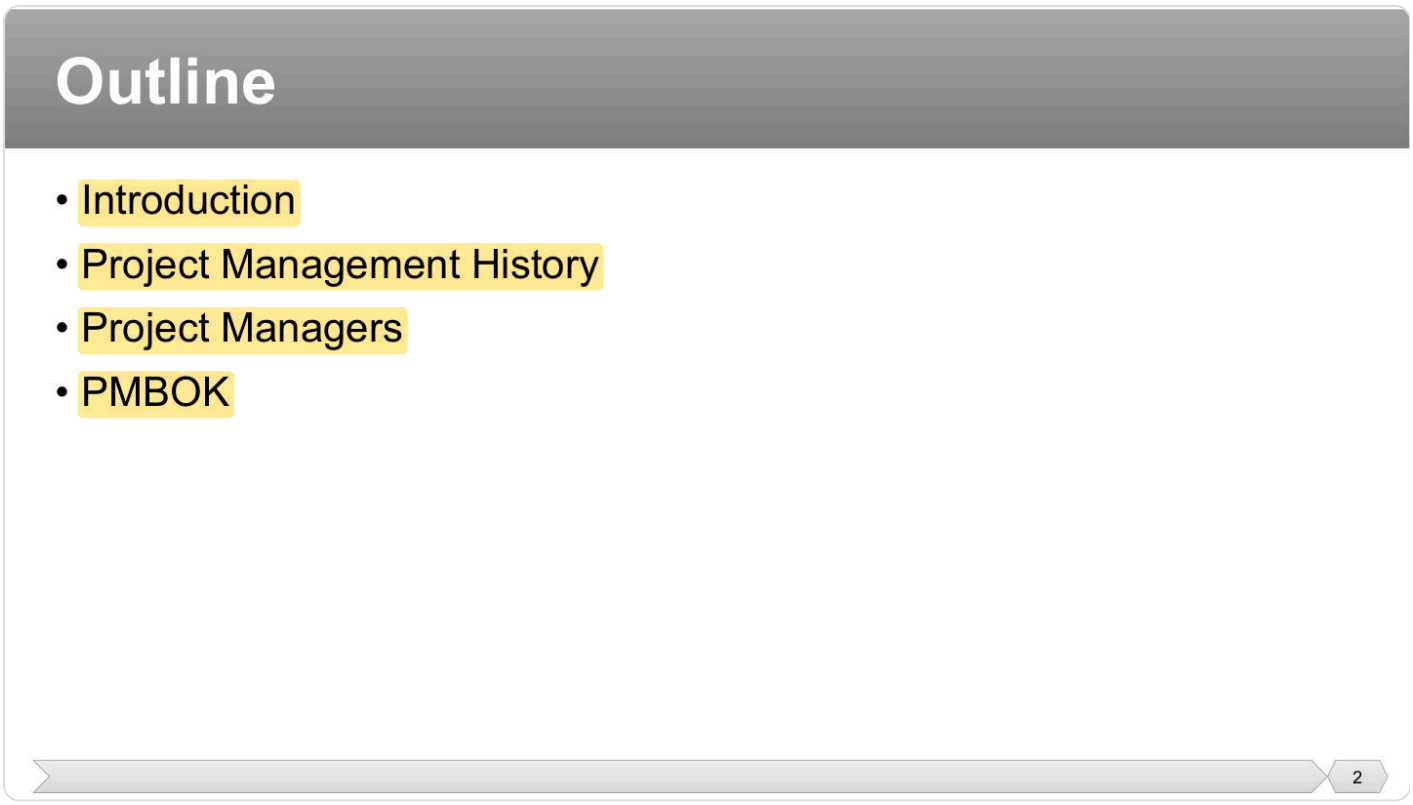
NOTES

1. This deck teaches the vocabulary the rest of the course depends on. When Chapter 5 says “optimize risk responses” or Chapter 8 says “engage stakeholders”, it assumes you already know what those phrases mean here, so time spent on this deck pays off in every later chapter.
2. A software project manager rarely writes the code. The job is making sure many people’s work adds up to something the organization actually wanted, on time and within budget. That is why this is a management course inside a software engineering degree.

TIPS & TRICKS

- Study this deck in two passes: first get the big picture (what is a project, who does what), then return to memorize the lists (12 principles, 8 domains).

 Outline



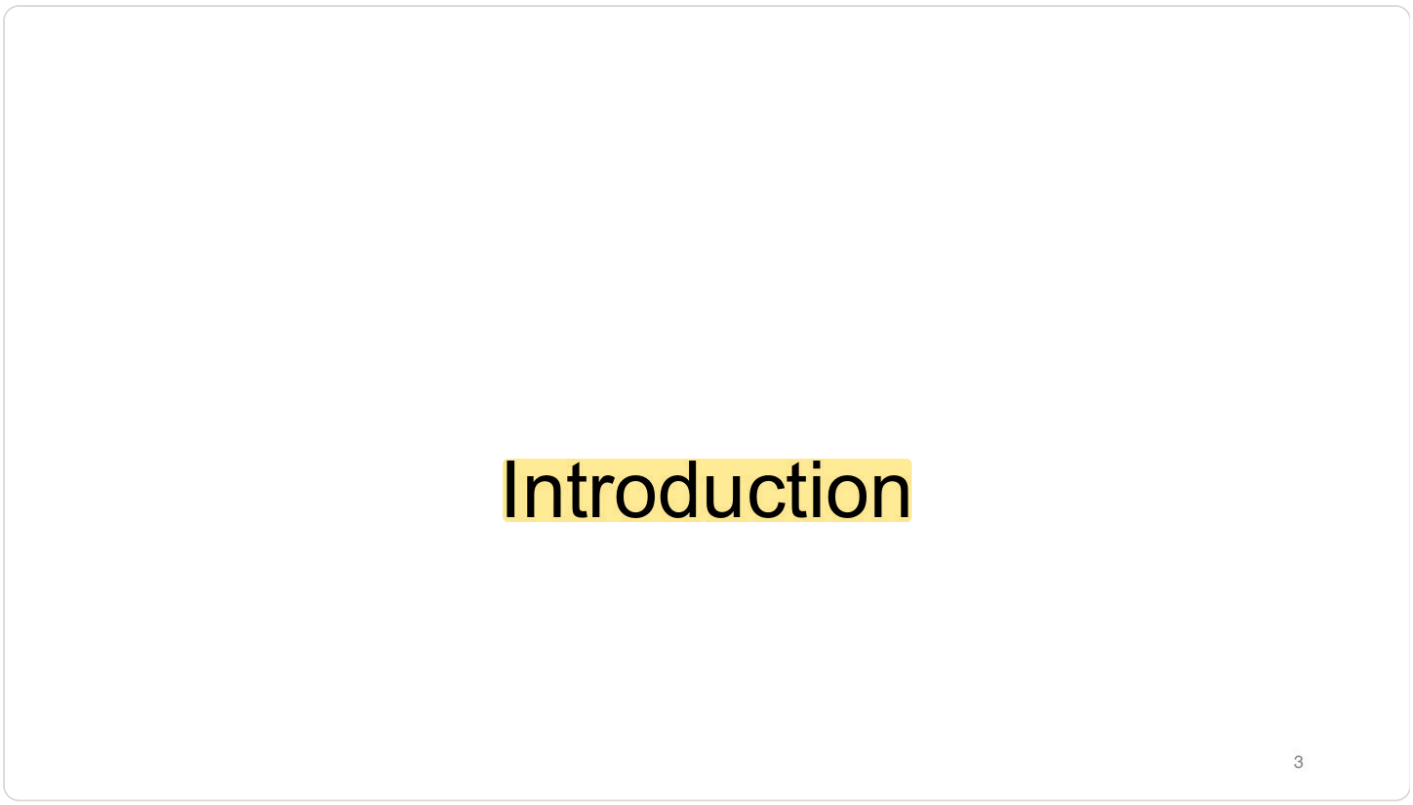
NOTES

1. The opening explains why anyone should care: organizations lose real money when projects are run badly.
2. History shows the field did not appear from nowhere. Each development, such as separating technical and managerial leadership or creating PMOs, solved a problem people actually had.
3. This part moves from the discipline to the person: what a PM is accountable for and which abilities separate good ones from bad ones.
4. PMBOK is the reference standard the course follows, and it is where most exam questions from this deck come from. Expect to spend most of your revision time here.

TIPS & TRICKS

- Outline as a story: **why** it matters → **how** it developed → **who** does it → **what rules** they follow.

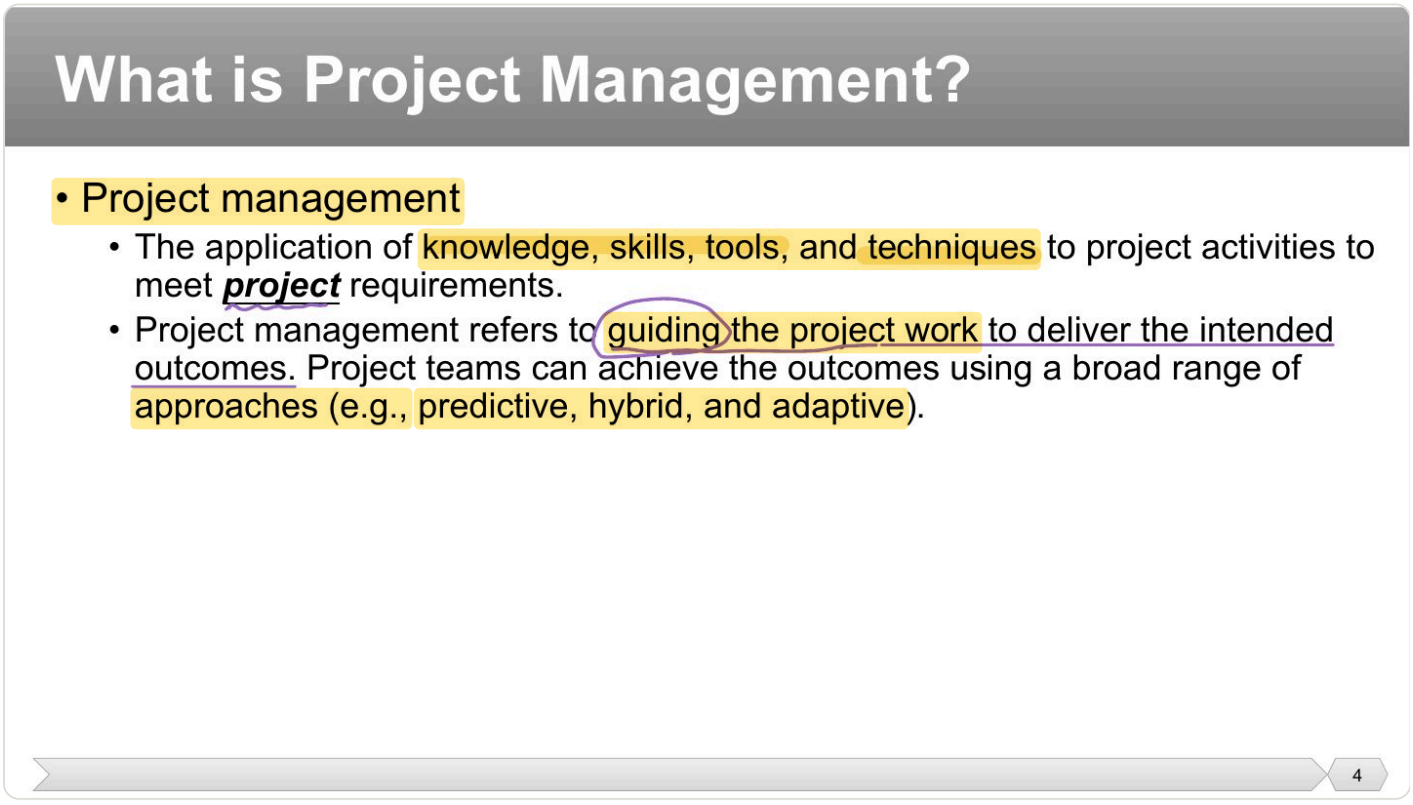
SLIDE 3 / 70 Introduction (section)



NOTES

1 Section divider. The next three slides answer one question: what is project management, and why are organizations paying attention to it?

SLIDE 4 / 70 What is Project Management?



NOTES

1. Each of the four nouns does a different job. **Knowledge** is what you understand (how estimation works). **Skills** are what you can do well (running a tense meeting). **Tools** are the things you use (a Gantt chart, Jira). **Techniques** are the methods you follow (critical path analysis). The definition lists all four because owning a tool without the skill to use it isn't project management.

2. A PM **guides** the work rather than performs it. Think of a film director: the director doesn't act or operate the camera, but without one, the actors and crew would not produce a coherent film. On a software project the developers write the code, while the PM keeps that work pointed at the outcome the organization wanted.

3. The approach is a choice, not a rule. **Predictive** means plan it all up front, which suits fixed requirements such as a regulated banking system. **Adaptive** means build in short cycles and adjust, which suits a new app whose users' needs are unclear. **Hybrid** mixes them. The slide's point is that good project management does not depend on one method.

TIPS & TRICKS

- **KiTTenS**: Knowledge, Tools, Techniques, Skills.
- Project management **guides** the work. If an option says the PM "does" or "writes" the work, be suspicious.

EXAM ANGLE

Prediction

Q1

Project management is the application of _____ to project activities to meet project requirements.

A Policies, procedures, and standards

> These come from governance, which guides projects. They are not what the definition says is applied.

B Budgets, schedules, and contracts

> These are things a project manager manages or produces. The definition names what is applied to the work, not the items being controlled.

C **Knowledge, skills, tools, and techniques**

> These are the four nouns in the definition: what you know, what you can do, what you use and the methods you follow.

D People, processes, and products

> This sounds right, but it is a general management phrase and not the definition. Products are what a project creates, not what it applies.

Prediction

Q2

A PM spends the week removing blockers, aligning the team on priorities and checking that the work still leads to what the client needs. She writes no code. Which statement describes this?

A **She is doing project management, which means guiding the work to deliver the intended outcomes**

> The slide defines project management as guiding the project work toward the intended outcomes, so a PM can do it without producing deliverables herself.

B She is doing product management, because she focuses on what the client needs

> Product management runs across a product's whole life cycle. Guiding one project's work toward its outcomes is project management.

C She is not doing project management, because she is not producing deliverables

> Producing deliverables is the team's work. The PM's contribution is guiding that work.

D She is doing general management, because she has no technical tasks

> General management runs ongoing operations. The lack of technical tasks doesn't change that this is temporary project work.

Prediction

Q3

A team must follow fixed regulations and has stable requirements, so it plans the entire project up front. Which approach is this?

A Decentralized

> Decentralized describes how a team is coordinated, not how the work is planned.

B Hybrid

> Hybrid mixes up-front planning with iterative work. Nothing here is iterative.

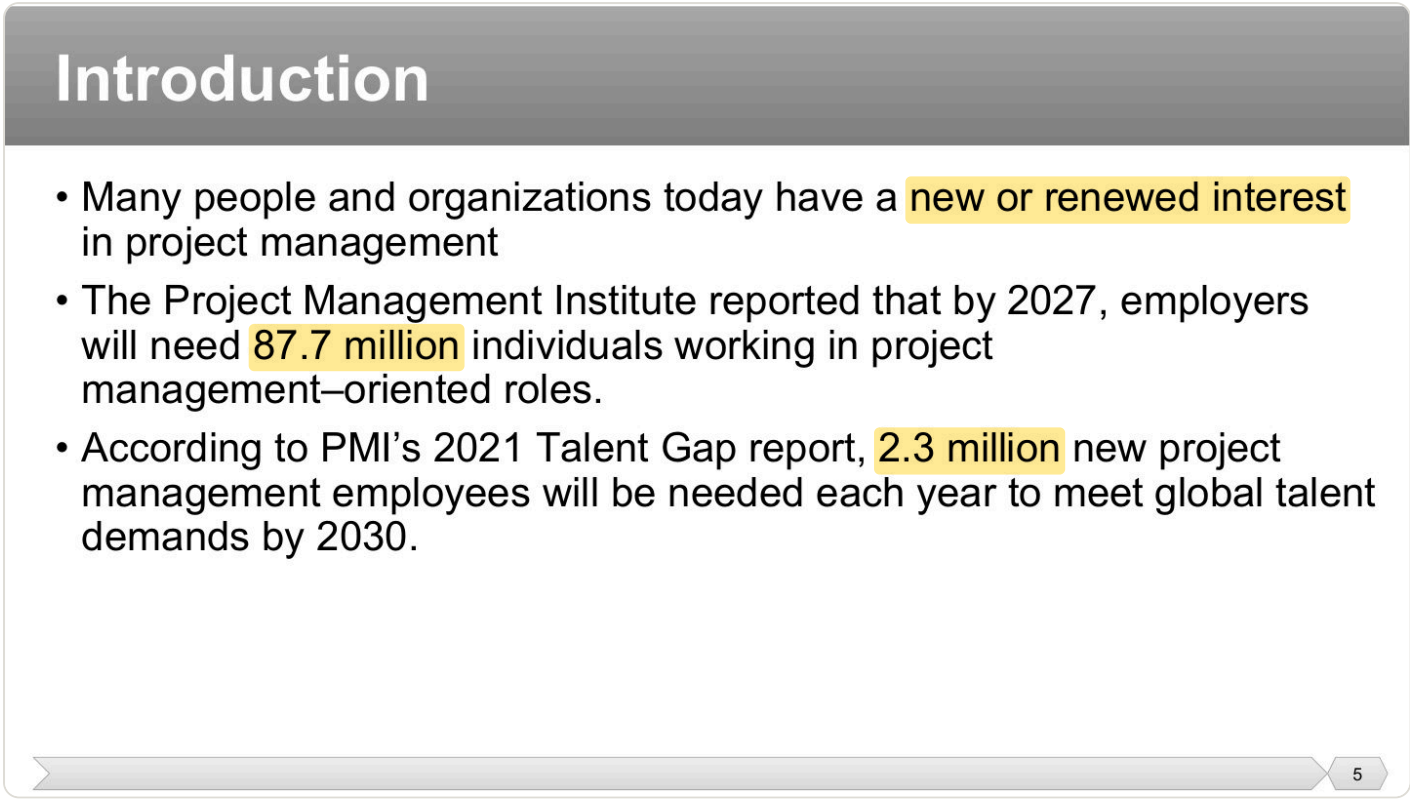
C **Predictive**

> Predictive means detailed planning up front, which suits stable, well-understood requirements.

D Adaptive

> Adaptive works in short cycles and expects requirements to change, which is the opposite of this team's situation.

 Introduction



NOTES

1. The interest is growing because more of what organizations do now takes the form of projects: new systems, new products, digital transformation. Work that used to be routine operations increasingly has a start, an end and a specific result.

2. Read these numbers as "demand is much larger than supply". 87.7 million is the total number of people needed in PM-oriented roles by 2027, while 2.3 million is how many new people must enter each year. Many of those people won't hold the title "project manager", since team leads and engineers also run project work. For you, this means PM skills are useful even if you stay technical.

TIPS & TRICKS

- Don't memorize the exact figures first. Remember the message, **a global talent gap**, then attach the numbers: **87.7M total** by 2027 and **2.3M new per year** to 2030.

EXAM ANGLE

Prediction Q1

According to PMI, how many people will employers need in project management–oriented roles by 2027?

A 87.7 million

This is the total need by 2027, as stated on the slide.

B 2.3 million

This is the number of new PM employees needed each year to 2030, not the total for 2027.

C 135.2 million

This resembles the $135.2 billion Saudi AI market figure on the next slide.

D 97 million

This confuses the figure with the waste statistic on the next slide: $97 million per $1 billion spent.

Prediction Q2

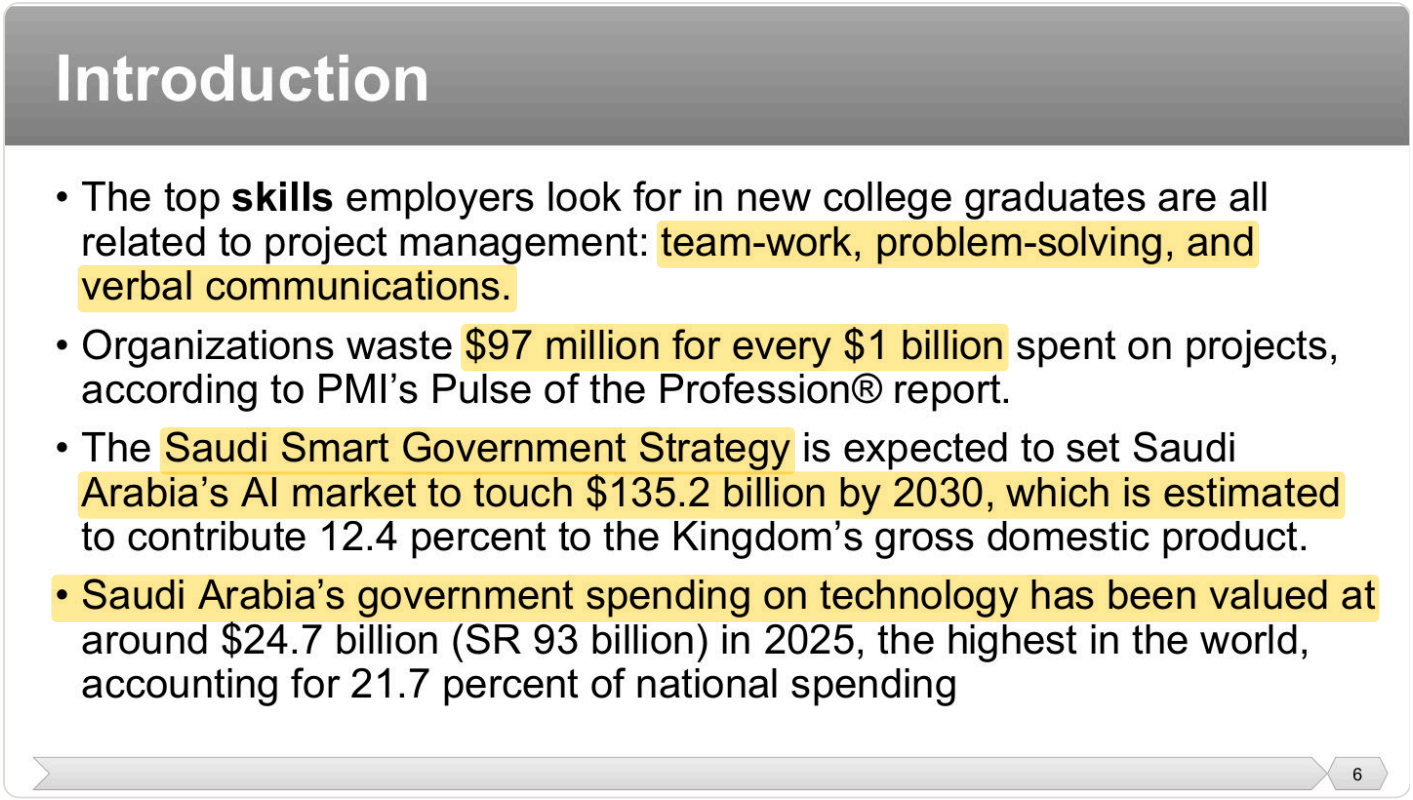
PMI's Talent Gap report says 2.3 million new project management employees will be needed each year to meet global demand by 2030.

T True

That is the slide's figure: 2.3 million per year up to 2030, as distinct from the 87.7 million total roles by 2027.

F False

The statement is correct. The two numbers measure different things: 87.7 million is the total by 2027, and 2.3 million is the new people needed each year to 2030.



NOTES

1. Employers' top three skills for graduates are not technical: teamwork, problem-solving and verbal communication. Project work builds all three because it forces you to agree on a plan, handle things going wrong and explain decisions to others.

2. The waste figure is the business case for this course. Out of every $1 billion spent on projects, $97 million (about 10%) produces nothing useful, usually because of unclear requirements, poor planning or weak control. A company spending $50 million would lose about $5 million, which easily justifies paying for good project management.

3. The Saudi numbers make this local. A national strategy expected to grow the AI market to $135.2 billion by 2030, plus the world's highest government technology spending ($24.7 billion in 2025, 21.7% of national spending), means many large projects will need people to run them, here in Saudi Arabia.

TIPS & TRICKS

- **$97M per $1B ≈ 10% wasted.** Remember the percentage, and you can always rebuild the number.

EXAM ANGLE

Prediction Q1

Which set lists the top skills employers look for in new graduates, according to the slide?

A Programming, testing, and debugging

> These are technical skills. The slide's point is that employers' top skills are not technical ones.

B Teamwork, problem-solving, and verbal communication

> All three are skills that managing projects builds, which is the slide's reason for mentioning them.

C Leadership, negotiation, and mentoring

> These appear in the competencies on slide 17, not in this list of graduate skills.

D Budgeting, scheduling, and procurement

> These are PM tasks, not the skills listed as top employer requirements for graduates.

Prediction Q2

A company spends $2 billion on projects. Based on PMI's Pulse of the Profession figure, about how much would it waste?

A $970 million

> This multiplies by ten. It would mean almost half the money is wasted.

B $20 million

> This assumes 1% waste, but the actual rate is close to 10%.

C $194 million

> The rate is $97 million per $1 billion, so $2 billion gives 2 × $97M = $194M.

D $97 million

> This is the waste for $1 billion. The company spends twice that.

Prediction

Q3

What does the slide say about Saudi Arabia's government technology spending in 2025?

A About $135.2 billion, 12.4% of national spending

> These figures describe the expected AI market and its share of GDP by 2030, not 2025 government spending.

B About $24.7 billion, 12.4% of GDP

> The amount is right, but 12.4% is the AI market's expected contribution to GDP.

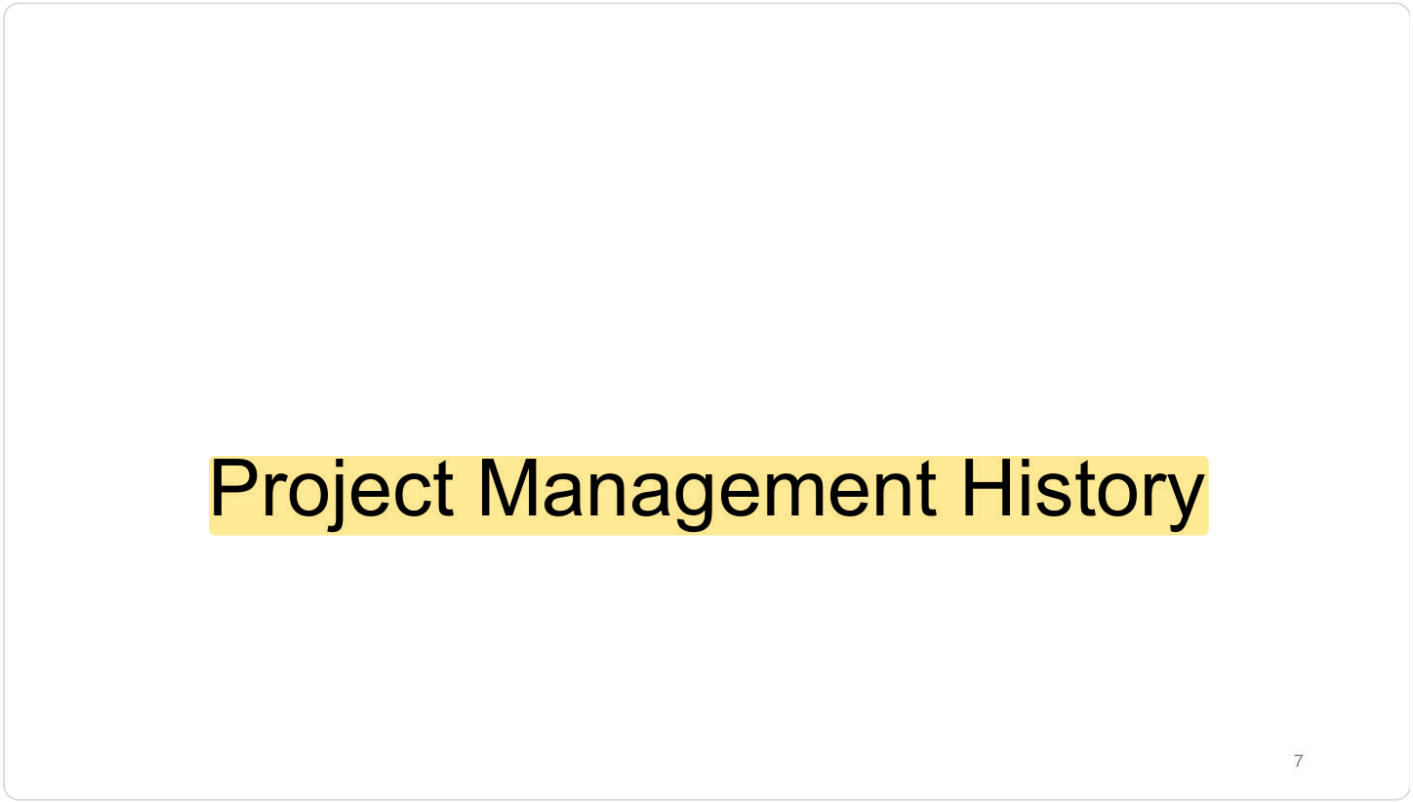
C About $97 million for every $1 billion

> This is PMI's project waste figure, unrelated to Saudi spending.

D About $24.7 billion, the highest in the world, 21.7% of national spending

> All three details come from the slide.

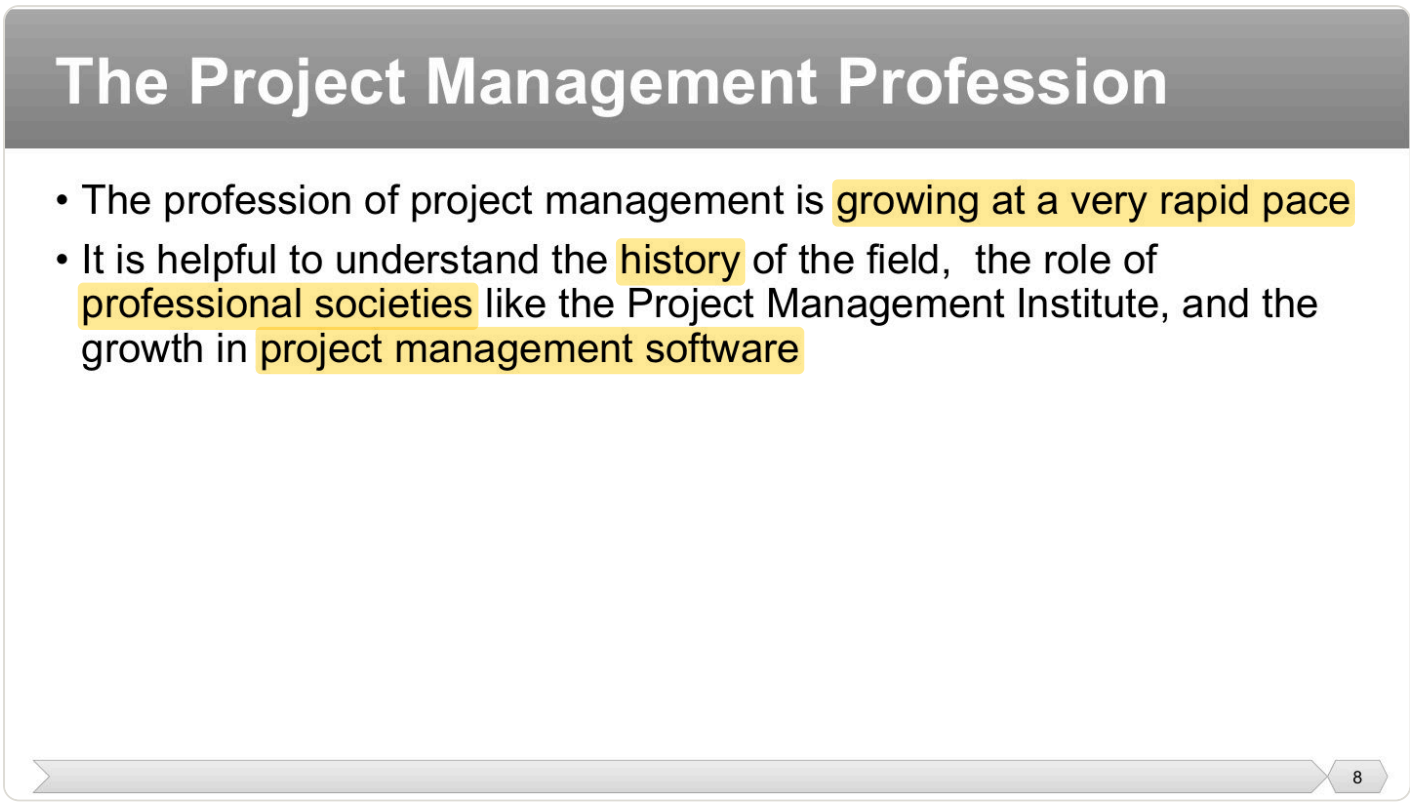
SLIDE 7 / 70 Project Management History (section)



NOTES

1 Section divider. These slides show where the profession came from and what it now expects of its members.

 The Project Management Profession



NOTES

1. The profession is growing because the world's work increasingly comes in the form of projects, and organizations have seen what poorly managed ones cost them.

2. The slide names three threads to follow. **History** explains why the job looks as it does. **Professional societies** like PMI set shared standards and certifications, which is what makes it a profession rather than just a job title. **Software** made serious planning practical: a schedule with hundreds of tasks is unmanageable on paper but easy to update in a scheduling tool.

TIPS & TRICKS

- **SHiP**: Software, History, Professional societies. These are the three things the slide says you should understand.

EXAM ANGLE

Prediction Q1

Which three things does the slide say help you understand the project management profession?

A Its budgets, schedules, and quality standards

> These are what a PM manages on a project, not the background to the profession.

B The 12 principles, 8 domains, and the system for value delivery

> These come from the PMBOK standard, covered later in the deck.

C **Its history, professional societies such as PMI, and the growth in project management software**

> These three are named together on the slide.

D Agile, waterfall, and hybrid methods

> These are delivery approaches, not what the slide lists for understanding the profession.

Prediction Q2

According to the slide, the project management profession is growing slowly as companies move away from formal management.

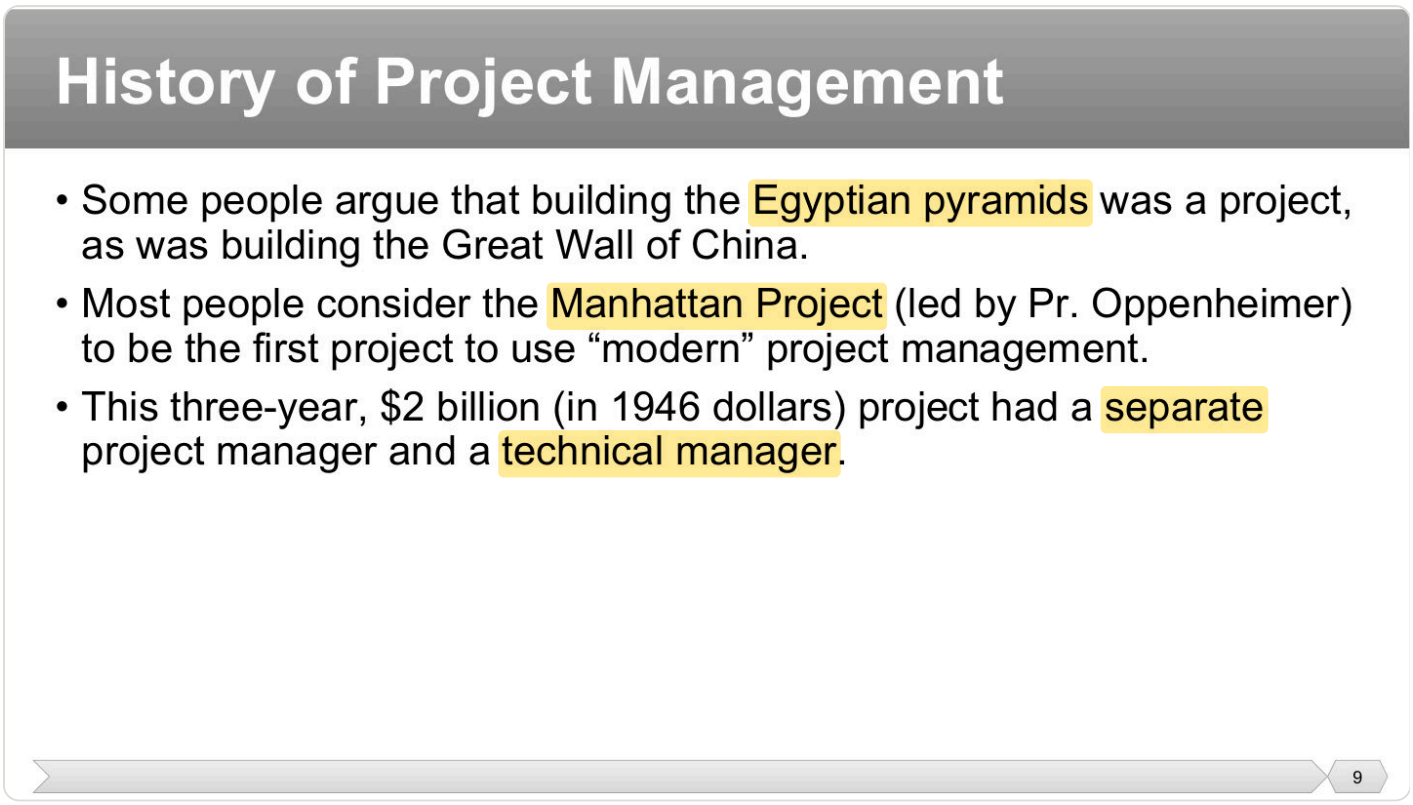
T True

> Check the wording: the slide says it is growing “at a very rapid pace”. The statement says the opposite.

F **False**

> The slide says the profession is growing at a very rapid pace.

 History of Project Management



NOTES

1. The pyramids count as projects in the modern sense because they were unique, had a clear goal and eventually ended. “Some people argue” matters here: without written methods, nobody can show that they used project management as we know it.

2. The **Manhattan Project**, the US effort to build the atomic bomb during the Second World War, is the usual starting point for modern project management. It involved huge scale, a hard deadline and work spread across many sites, so informal coordination could not work.

3. Its key lesson is the **split between a project manager and a technical manager**. Knowing the physics and running a three-year, $2 billion program are different jobs. Software teams still do this: an engineering lead makes the technical decisions, while the PM handles schedule, people and budget.

TIPS & TRICKS

- Picture **two chairs at the head of the table**: one for managing the project, one for leading the technology. That image is the Manhattan Project’s lesson.

EXAM ANGLE

Prediction Q1

Which project is usually considered the first to use “modern” project management?

A The Egyptian pyramids

> Some argue it was a project, but the slide does not call it modern project management.

B The Great Wall of China

> Same as the pyramids: arguably a project, but not “modern” project management.

C The Apollo program

> It isn’t on the slide. It came later than the Manhattan Project, which holds this title.

D The Manhattan Project

> Most people consider it the first, partly because of its separate project and technical managers.

Prediction Q2

What was distinctive about how the Manhattan Project was organized?

A The technical manager also managed the budget and schedule

> This merges the two roles, which is exactly what the project avoided.

B It was run by a PMO

> PMOs became common in the 1990s, decades later.

C Teams self-organized with no designated managers

> This describes decentralized coordination, covered on slide 39. The Manhattan Project had designated managers.

D It had a separate project manager and technical manager

> Separating managerial and technical leadership is the structural lesson the slide highlights.

Prediction Q3

A $2 billion (1946 dollars), three-year effort: what do these numbers tell you about why modern project management emerged?

A Projects only need managing when they cost over $1 billion

> No such threshold exists, and small projects also benefit.

B **At that scale and with that deadline, informal coordination was no longer enough**

> Size, time pressure and many sites are the conditions that make formal management necessary.

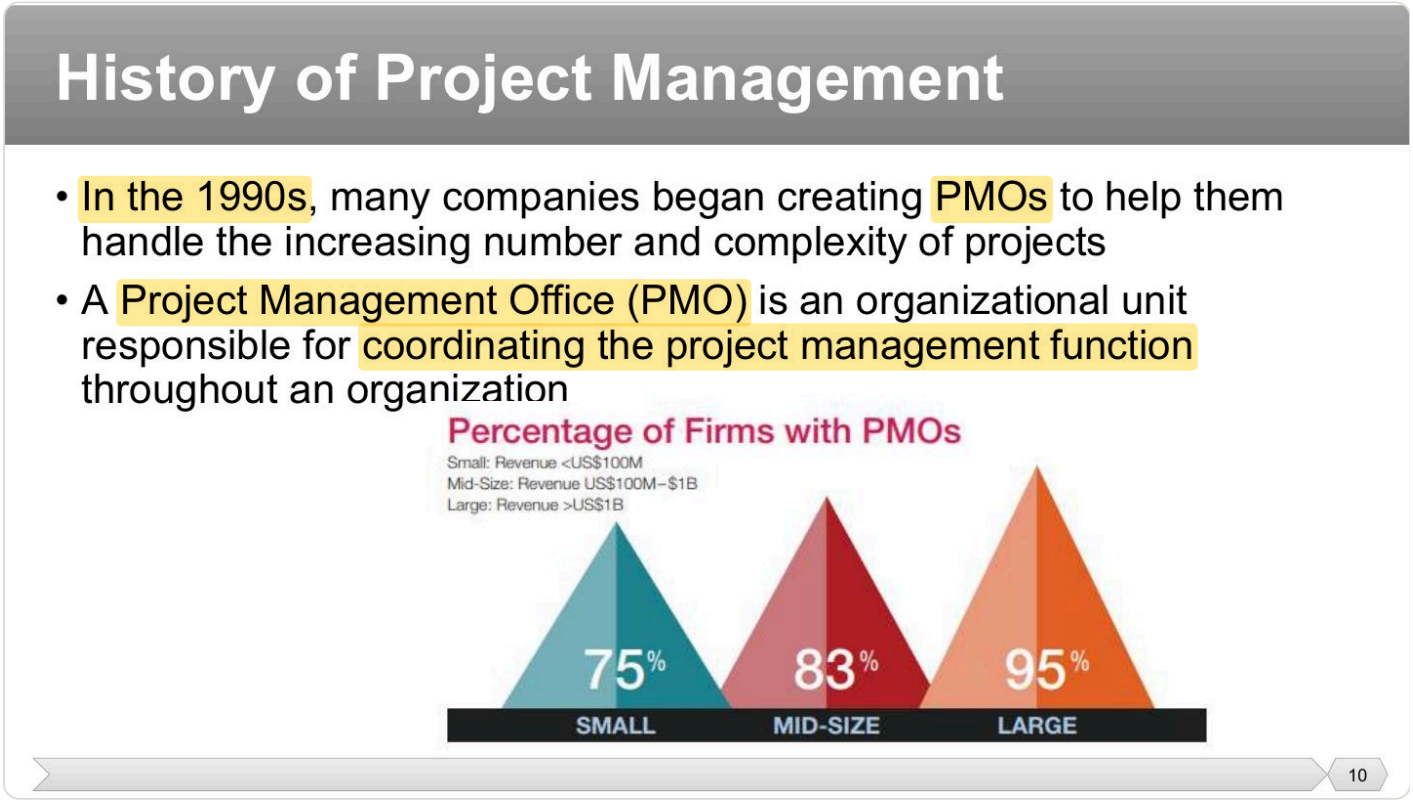
C Government projects must always have two managers

> The two-manager split was this project's choice, not a rule about government work.

D Three years is the maximum length of a project

> A project is temporary, but the definition sets no maximum length.

SLIDE 10 / 70 **History of Project Management**



NOTES

1 Companies in the 1990s suddenly had dozens of projects running at once, sharing the same people and budgets. Each PM could run their own project well and the organization could still end up with chaos, such as three projects needing the same database expert in the same week. PMOs were created to solve that.

2. Focus on the word **coordinating**. A PMO doesn't usually run each project. It gives projects a common way of working (templates, standards, training), sees across all of them, and tells senior management how they are doing. Think of a university registrar: it doesn't teach courses, but it makes all of them work together.

TIPS & TRICKS

- **PMO = air traffic control.** Pilots still fly the planes (PMs run projects), while the tower keeps everyone from colliding.

EXAM ANGLE

Past exam · Final 242 · Q1.3 — Q1

What is a Project Management Office (PMO) and its role in organizations?
Answer: A PMO is a centralized organizational unit that oversees and standardizes how projects are managed. It sets PM standards, methods and templates, trains and supports project managers, monitors and reports on project performance, and coordinates resources across projects. Its control ranges from supportive (consultative) to controlling (requires compliance) to directive (manages the projects directly).

Prediction — Q2

Why did many companies begin creating PMOs in the 1990s?

A To obtain PMP certification for the company

> PMP is a certification for individuals, not a reason for creating a PMO.

B To replace project managers with a central team

> A PMO supports and coordinates PMs. It doesn't replace them.

C To take over the ongoing operations of the company

> Operations are the organization's routine work. A PMO's focus is the project management function.

D **To handle the increasing number and complexity of projects**

> This is the reason the slide gives: too many complex projects to coordinate informally.

Prediction Q3

A PMO is best described as:

A A person assigned to lead a single project team

> That is the project manager (slide 26). A PMO works across projects.

B **An organizational unit responsible for coordinating the project management function throughout an organization**

> This is the slide's definition. Note "throughout an organization".

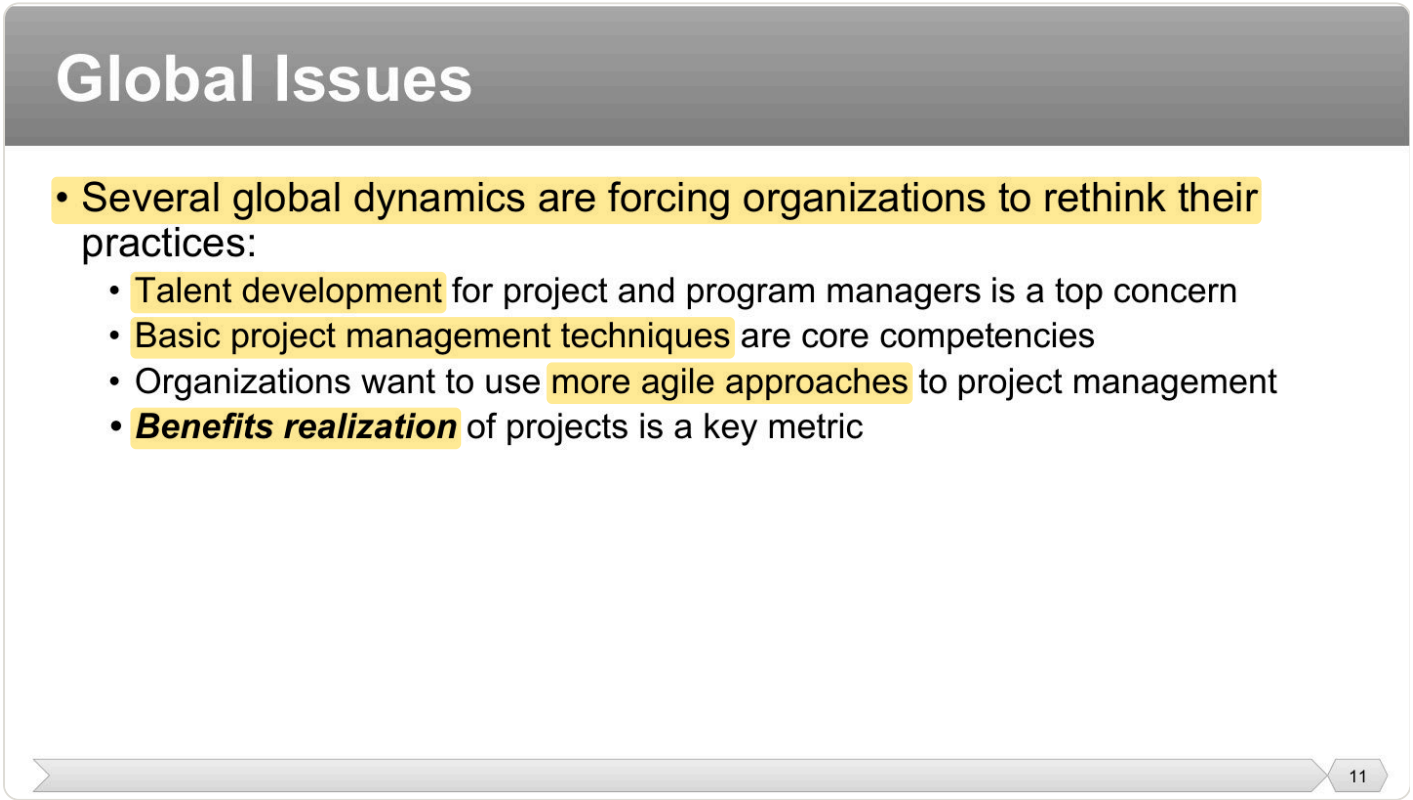
C A group of related projects managed for extra benefits

> That is a program (slide 25).

D A software tool for scheduling tasks

> A PMO is a unit of people, though it may choose and support such tools.

SLIDE 11 / 70 **Global Issues**



NOTES

1. Organizations struggle to find capable project and program managers, which matches the talent gap on slide 5. So they treat growing them as a strategic concern, through training, mentoring and career paths.
2. "Core competency" means this is now a basic expectation. A software engineer may be asked to lead a small feature with its own plan and deadline, without ever being called a PM.

3. Markets change quickly and requirements shift, and a plan made a year ago may no longer fit. So organizations want approaches that deliver in small pieces and adjust based on feedback. Chapter 4 covers this.

4. Finishing on time and on budget used to be enough to call a project successful. Now organizations ask whether the promised benefit arrived. A mobile app delivered perfectly but used by nobody has no realized benefit.

TIPS & TRICKS

- **CoBAIT**: Core competencies, Benefits, Agile, Talent. These are the four global dynamics on the slide.
- **Delivered ≠ done.** Benefits realization asks: “Did it actually help?”

EXAM ANGLE

Prediction Q1

A project finished on time and on budget, yet six months later almost nobody uses the system. Which global issue from the slide does this highlight?

A Benefits realization of projects is a key metric

Success is now judged by whether the promised benefits actually arrive, not only by delivery.

B Talent development for project managers

The problem here is the lack of results, not a shortage of skilled managers.

C Basic techniques are core competencies

This says basic PM skills are widely expected. It doesn't explain unused deliverables.

D The move to more agile approaches

Agile could help, but the issue described is measuring realized benefits.

Prediction Q2

A company adds "can plan and track a small project" to every engineer's job requirements. Which dynamic is this?

A More agile approaches

Nothing here mentions iterative delivery.

B Basic project management techniques are core competencies

Core competency means an ability expected widely, not only from people titled PM.

C Talent development for project and program managers

This concerns developing PMs specifically, whereas this requirement applies to all engineers.

D Benefits realization

This concerns measuring project results, not staff abilities.

Prediction

Q3

Struggling to find enough experienced program managers, a company launches a mentoring path for them. Which dynamic does this respond to?

A More agile approaches

> Mentoring managers doesn't make the delivery approach more agile.

B Benefits realization

> This measures the results of projects, not the supply of managers.

C Talent development for project and program managers

> The slide calls this a top concern, and a mentoring path is a direct response.

D Basic techniques as core competencies

> This is about broad basic skills, not growing specialized managers.

Prediction

Q4

The slide says organizations want to use less agile approaches to project management.

T True

> Read carefully: the slide says "more agile". Organizations want to respond faster to change, not more slowly.

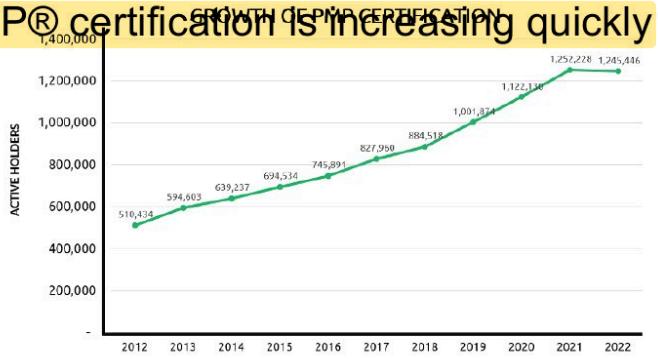
F False

> The slide says organizations want to use more agile approaches.

 Project Management Certification

Project Management Certification

- The Project Management Institute (PMI: http://www.pmi.org/) is the leading organization in advancing the project management profession
- PMI provides certification as a Project Management Professional (PMP®)
- The number of people earning PMP® certification is increasing quickly
- Students can join PMI at a reduced fee and earn the Certified Associate in Project Management (CAPM) certification(see PMI for details)



12

NOTES

1. A profession needs a body that defines good practice. PMI plays that role for project management, and it publishes the PMBOK standard this course is built on. So when these slides say “the standard says”, they mean PMI.
2. A **PMP** is the professional-level certification. It signals to employers that someone has real experience and has passed a demanding exam, like a professional engineering license does in other fields. That is why demand for it keeps rising.
3. The **CAPM** is the entry-level option, intended for students and people early in their careers who don’t yet have the project experience the PMP requires. This is the one relevant to you now.

TIPS & TRICKS

- **CAPM** starts with **C**, think “Come in”: the entry door. **PMP** = the “Professional” who has already got experience.

EXAM ANGLE

Prediction Q1

Which organization is described as the leader in advancing the project management profession?

A The Project Management Institute (PMI)

PMI also publishes the PMBOK standard and runs the certifications.

B The IEEE

IEEE is an engineering body, and it is not the one named on this slide.

C The Project Management Office (PMO)

A PMO is a unit inside a single organization, not a professional body.

D The Saudi Smart Government Strategy

This national strategy was mentioned on slide 6 as a source of demand.

Prediction Q2

A third-year student with no project experience wants a PMI certification. Which one does the slide point to?

A CAPM (Certified Associate in Project Management)

The slide says students can join PMI at a reduced fee and earn the CAPM.

B PMO (Project Management Office)

A PMO is an organizational unit, not a certification.

C PMBOK

PMBOK is the body of knowledge, not a certification.

D PMP (Project Management Professional)

The PMP suits experienced practitioners, so it isn't the entry-level option for students.

Prediction Q3

The number of people earning PMP certification is decreasing quickly.

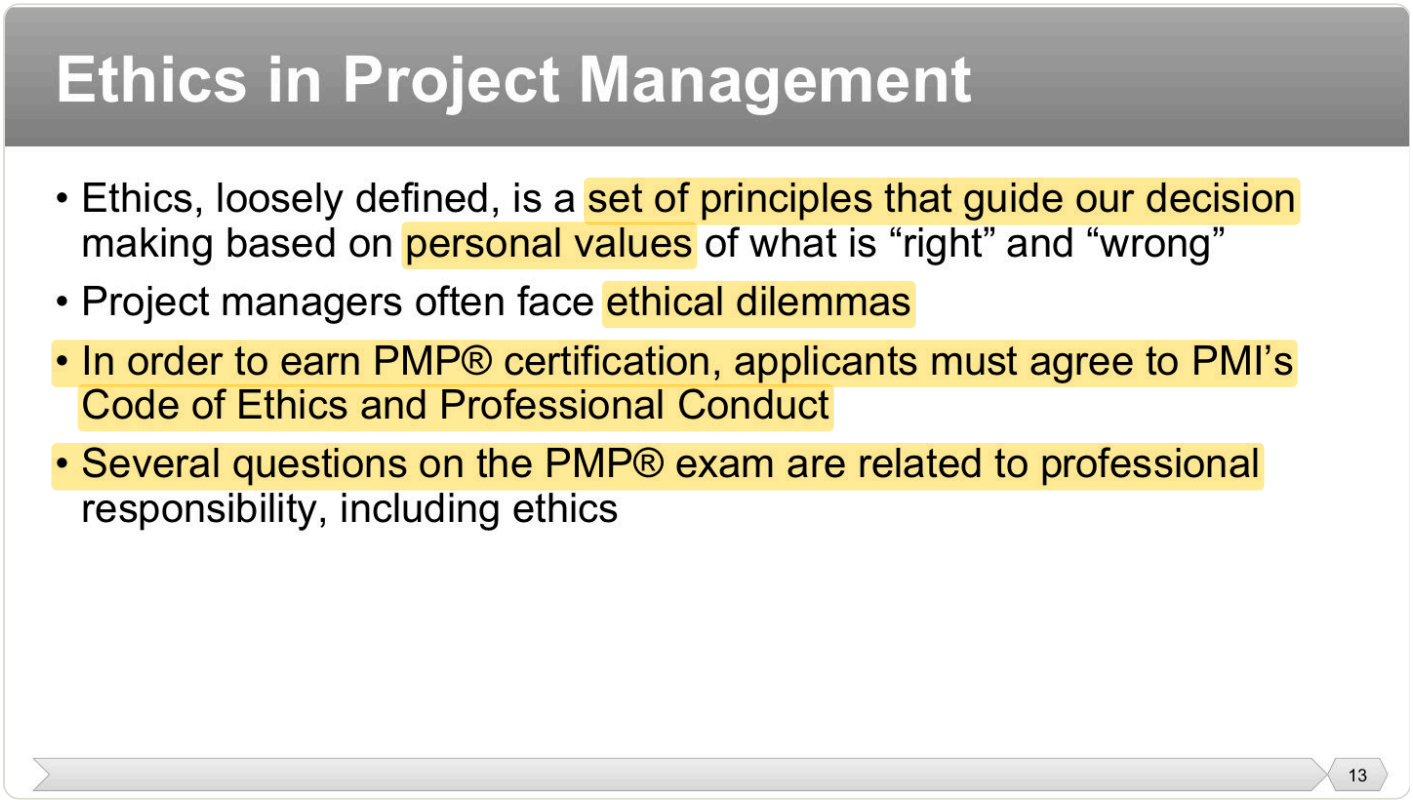
T True

> The slide says it is increasing quickly, which fits the growing demand for PM skills.

F False

> The slide says the number is increasing quickly.

SLIDE 13 / 70 **Ethics in Project Management**



NOTES

1. The key word is **personal values**: ethics deals with what you believe is right and wrong, not only with what is legal. An action can be legal and still be unethical, like quietly reporting "on track" to a client when you know the project is not.
2. A dilemma is a situation where the choices are all uncomfortable. A sponsor pressures you to hide a delay until after the funding decision. A friend's company bids for your project's contract. PMs face these often because they sit between clients, staff and executives who want different things.
3. Agreeing to the code is a requirement for earning the PMP, and the exam tests professional responsibility. So ethics isn't a side topic: the profession treats it as part of being qualified. The four values come on slide 55.

TIPS & TRICKS

- Ethics quick test: **“Would I be comfortable if the client and my manager both saw exactly what I just did?”**

EXAM ANGLE

Prediction Q1

Ethics is loosely defined as:

A The principles that make a project finish on time

> Ethics concerns right and wrong, not schedule performance.

B A set of principles that guide decision making based on personal values of right and wrong

> This is the slide's definition. The words "personal values" are key.

C The set of laws that governs a project

> Laws are external and legal. Something can be legal yet unethical.

D A list of tasks each team member must perform

> That describes a work plan, not ethics.

Prediction Q2

The sponsor asks the PM to report the project as "green" until the funding decision, although it is two months late. What is this?

A Tailoring, because the report is adapted to the audience

> Tailoring adapts methods to context. It doesn't allow false information.

B A normal risk response

> Hiding a delay does nothing to address the delay. It only deceives the people deciding on funding.

C An ethical dilemma: pressure to misreport conflicts with honesty

> PMs often face this kind of pressure, and the slide says so directly. Honesty is one of PMI's four values.

D Stakeholder engagement, because the sponsor is being kept happy

> Engagement requires honest communication, not misleading a decision-maker.

Prediction

Q3

What must applicants agree to in order to earn the PMP certification?

A The system for value delivery

> This is a concept in the standard, not an agreement applicants sign.

B Their employer’s governance framework

> Governance belongs to each organization, while PMP is a professional certification.

C PMI’s Code of Ethics and Professional Conduct

> The slide states this requirement, and adds that the exam includes questions on professional responsibility.

D The PMBOK performance domains

> These are studied for the exam, but applicants don’t sign an agreement to them.

Prediction

Q4

The PMP exam includes questions related to professional responsibility, including ethics.

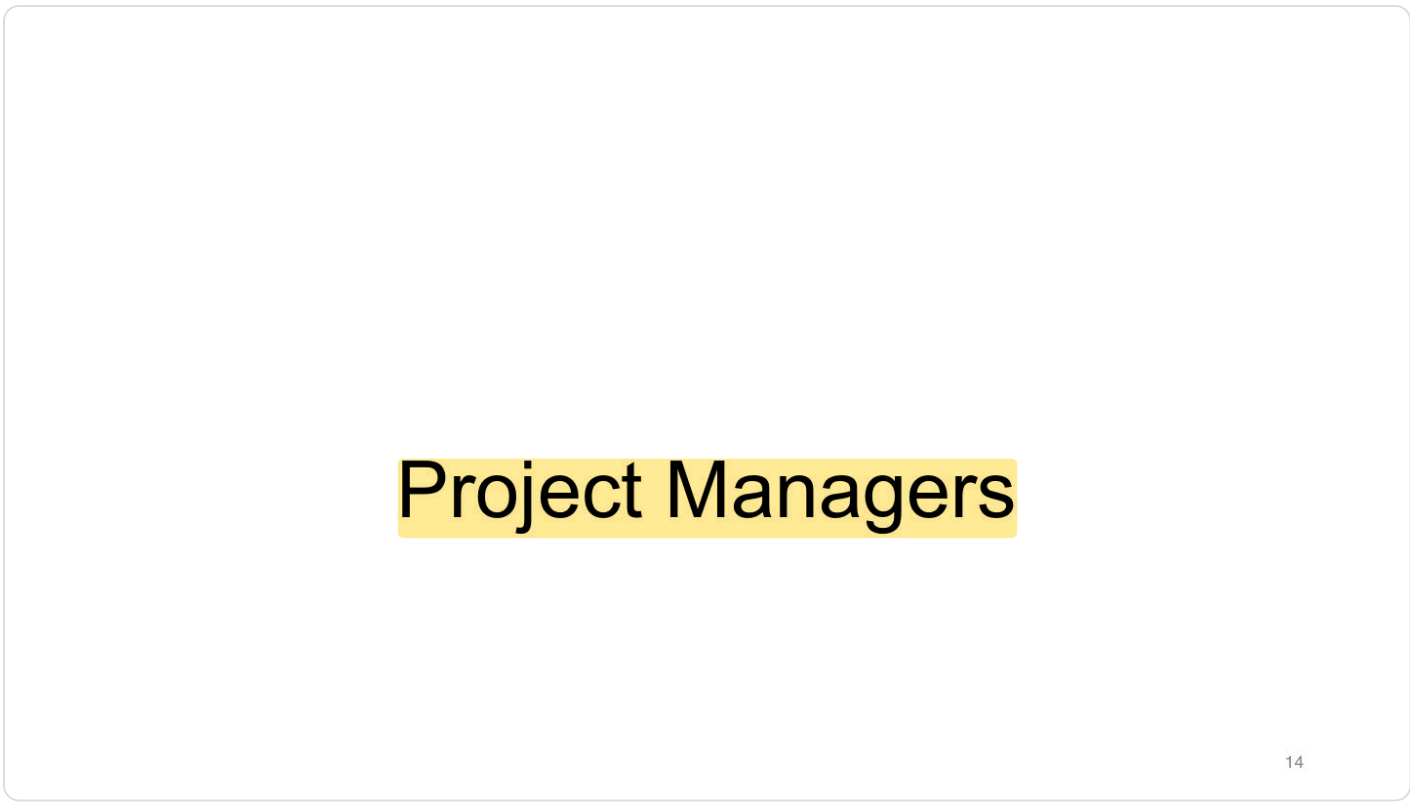
T True

> The slide says several exam questions cover this, so ethics counts as part of being qualified.

F False

> The slide says “several questions” on the PMP exam relate to professional responsibility, including ethics.

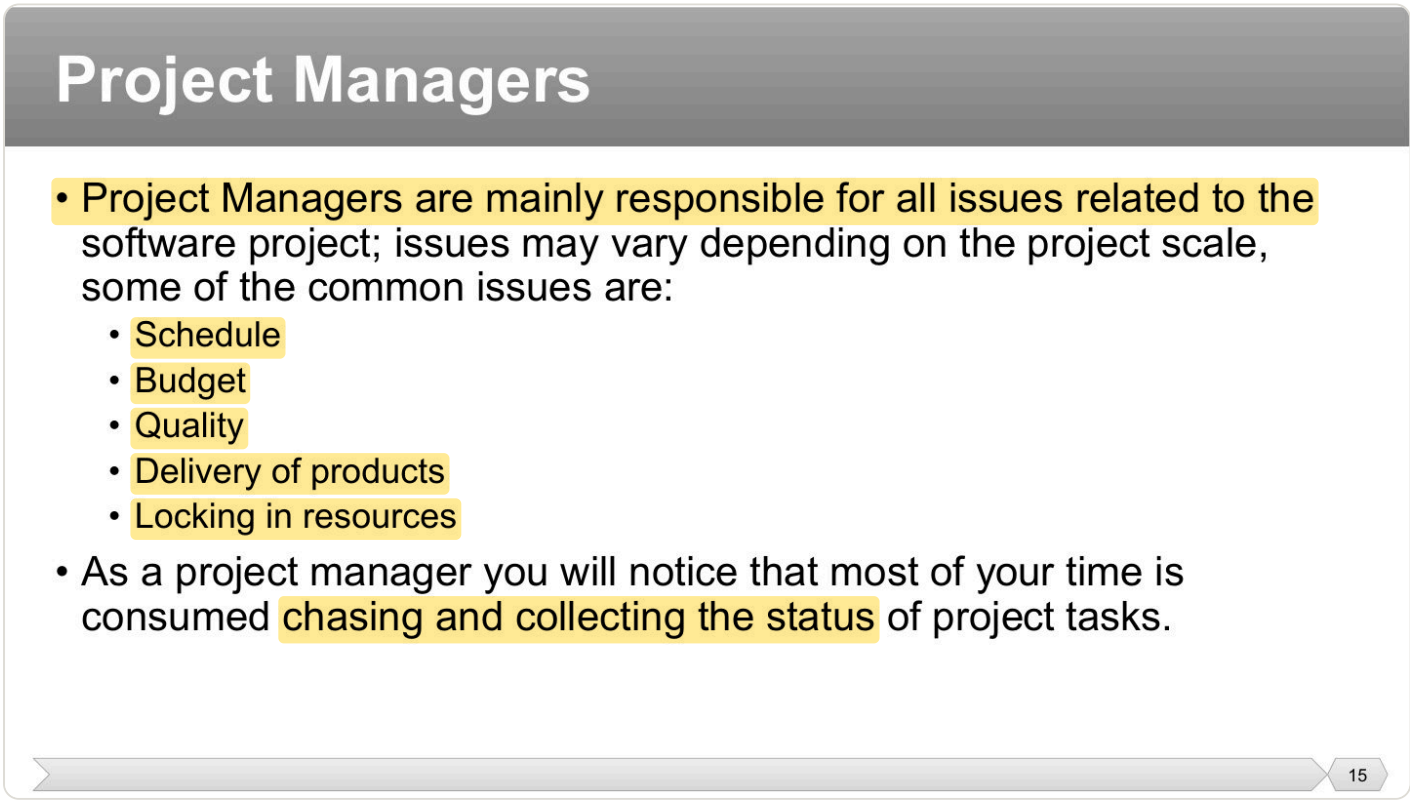
SLIDE 14 / 70 Project Managers (section)



NOTES

1 Section divider. The next slides move from the field to the person: what a project manager answers for and what makes one good.

SLIDE 15 / 70 Project Managers



NOTES

1. The PM answers for anything that threatens the project, even when someone else caused it. **Schedule, budget and quality** pull against each other: finishing sooner usually costs more money or lowers quality, and much of the job is deciding which one to protect when you can't keep all three. "Depending on the project scale" means a small project may blur these, while a large one may assign specialists to each.

2. **Delivery** means the finished product reaches the customer in a usable state: deployed, documented and accepted, not merely "code complete". **Locking in resources** means securing people and equipment early. Your best database engineer can be pulled onto another project unless you've secured them, and that can damage your schedule more than a technical bug would.

3. New PMs expect to spend their days on strategy, and instead they ask "is that done yet?" all day. Each task's status lives in someone's head, and the PM can't make decisions without it. That is why status meetings, dashboards and tracking tools exist.

TIPS & TRICKS

- **SQuaBbLeD**: Schedule, Quality, Budget, Locking in resources, Delivery.
- Triangle trick: picture **time, cost and quality** at three corners. Pull one corner, and the others move.

EXAM ANGLE

Past exam · Final 242 · Q1.1 — Q1

Define the term ‘project constraints’ and explain how they influence project planning and execution. Provide at least three examples of common constraints and discuss their interrelationship.

Answer: Project constraints are the limits a project must be delivered within. The classic three are scope, time and cost, often with quality, resources and risk. They drive planning because every schedule, budget and scope decision has to fit inside them, and during execution the PM keeps trading them off. They are interrelated (the triple constraint): cutting the schedule usually needs more cost or less scope, and adding scope needs more time or money; quality sits in the middle and suffers if they are squeezed.

Prediction — Q2

A client wants delivery a month earlier with the same features. What should the PM expect?

A Only the schedule document needs to be updated

> A new date on paper doesn’t change the amount of work that must be done.

B Nothing else changes if the team works efficiently

> Efficiency helps, but ignoring the trade-off is how projects end up over budget or full of bugs.

C Quality improves because the team is more focused

> Time pressure usually reduces quality rather than improving it.

D Cost will likely rise or quality will likely suffer, because schedule, budget and quality are linked

> These constraints trade against each other. Moving one affects the others.

Prediction

Q3

Another project is about to take the only security engineer next month. Which PM responsibility from the slide applies?

A Locking in resources

Securing people and equipment before others claim them is what this item means.

B Delivery of products

This concerns getting results to the customer, not securing staff.

C Quality

Losing the engineer may affect quality, but securing that person is a resource responsibility.

D Chasing status

Status tells you what has been done. It doesn't secure the people you'll need.

Prediction

Q4

What does the slide say consumes most of a project manager's time?

A Negotiating contracts with vendors

Negotiation is a competency on slide 17, but not what the slide says takes the most time.

B Chasing and collecting the status of project tasks

This is the slide's closing point, and it is why tracking tools matter.

C Writing code for the difficult parts

The team does that work. The PM guides it.

D Preparing the project budget

Budget is a PM responsibility, but the slide says status takes up most of the time.

Prediction Q5

The issues a project manager handles stay the same regardless of the project's scale.

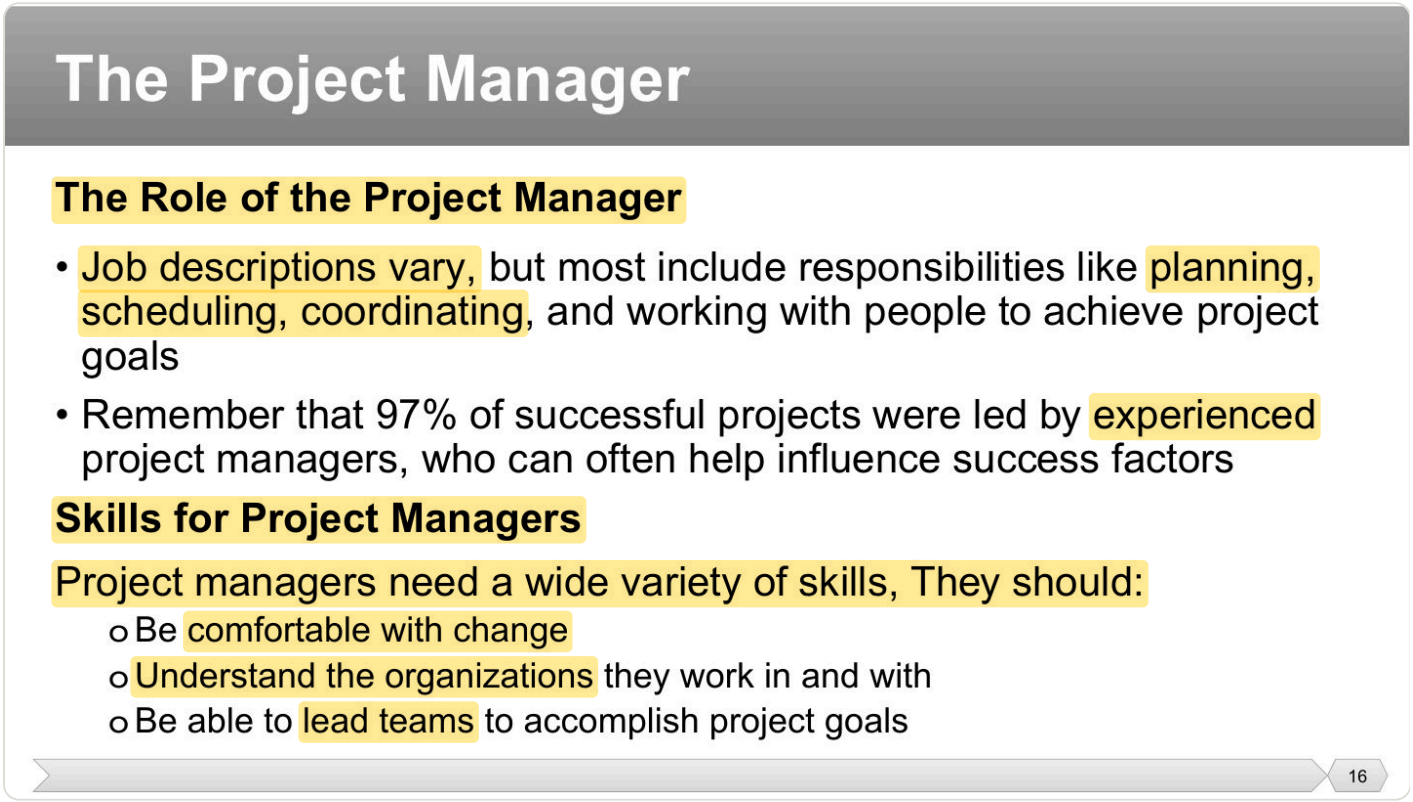
T True

> The slide says issues vary with scale. A small internal tool and a national system bring different problems.

F False

> The slide says the issues "may vary depending on the project scale".

SLIDE 16 / 70 **The Project Manager**



NOTES

1. Notice that all four responsibilities (planning, scheduling, coordinating, working with people) involve other people or their work. Job titles and descriptions vary across companies, but this core stays the same, whatever the industry.

2. The 97% statistic is about **experience**. A PM who has seen projects fail recognizes warning signs early, knows who to talk to, and can influence the conditions for success. You can't get that from a textbook alone, which is why junior PMs benefit from working under senior ones.

3. These three skills address different things. **Change**: requirements and people will shift, and a PM who is upset by that won't last. **Understanding the organization**: knowing who holds power and how decisions get made often matters more than the plan itself. **Leading teams**: you usually have no authority over the people on your project, so you get results by earning their cooperation.

TIPS & TRICKS

- **SPaCeWalk**: Scheduling, Planning, Coordinating, Working with people.
- **COoL**: Change, Organization, Lead. These are the three skills, and a PM needs to stay cool under pressure.

EXAM ANGLE

Prediction Q1

Which list matches the responsibilities most PM job descriptions include, according to the slide?

A Auditing, certifying, regulating, and enforcing

> These belong closer to governance and compliance roles.

B Planning, scheduling, coordinating, and working with people

> This is the wording on the slide. All four concern getting people's work organized.

C Hiring, firing, promoting, and paying staff

> These usually belong to functional managers or HR, not to the PM.

D Coding, testing, deploying, and maintaining

> These are engineering tasks the team performs.

Prediction Q2

What does the 97% statistic on the slide tell you?

A 97% of successful projects were led by experienced project managers

> The slide uses this to show that experience influences success.

B 97% of projects succeed when using PMBOK

> The statistic concerns who led them, not which standard they used.

C 97% of project managers are experienced

> The number describes successful projects, not the whole PM population.

D 97% of a PM's time goes to status collection

> Status is mentioned on the previous slide, with no such percentage.

Prediction

Q3

A PM is talented technically, but keeps getting surprised that a department head can quietly block decisions. Which skill from the slide is missing?

A Being comfortable with change

> The problem here isn't change. It is not knowing how the organization makes decisions.

B Leading teams

> The department head isn't on the team. The gap is about understanding the organization.

C Process and technical skills

> The PM already has these, and the situation shows they aren't enough.

D Understanding the organization they work in and with

> Knowing how power and decisions really work in the organization is this skill.

Prediction

Q4

Halfway through, the client changes direction, and the PM calmly replans instead of resisting. Which skill is this?

A Understanding the organization

> This case is about reacting to a change, not about internal politics.

B Conflict resolution

> Nobody is in conflict in this scenario.

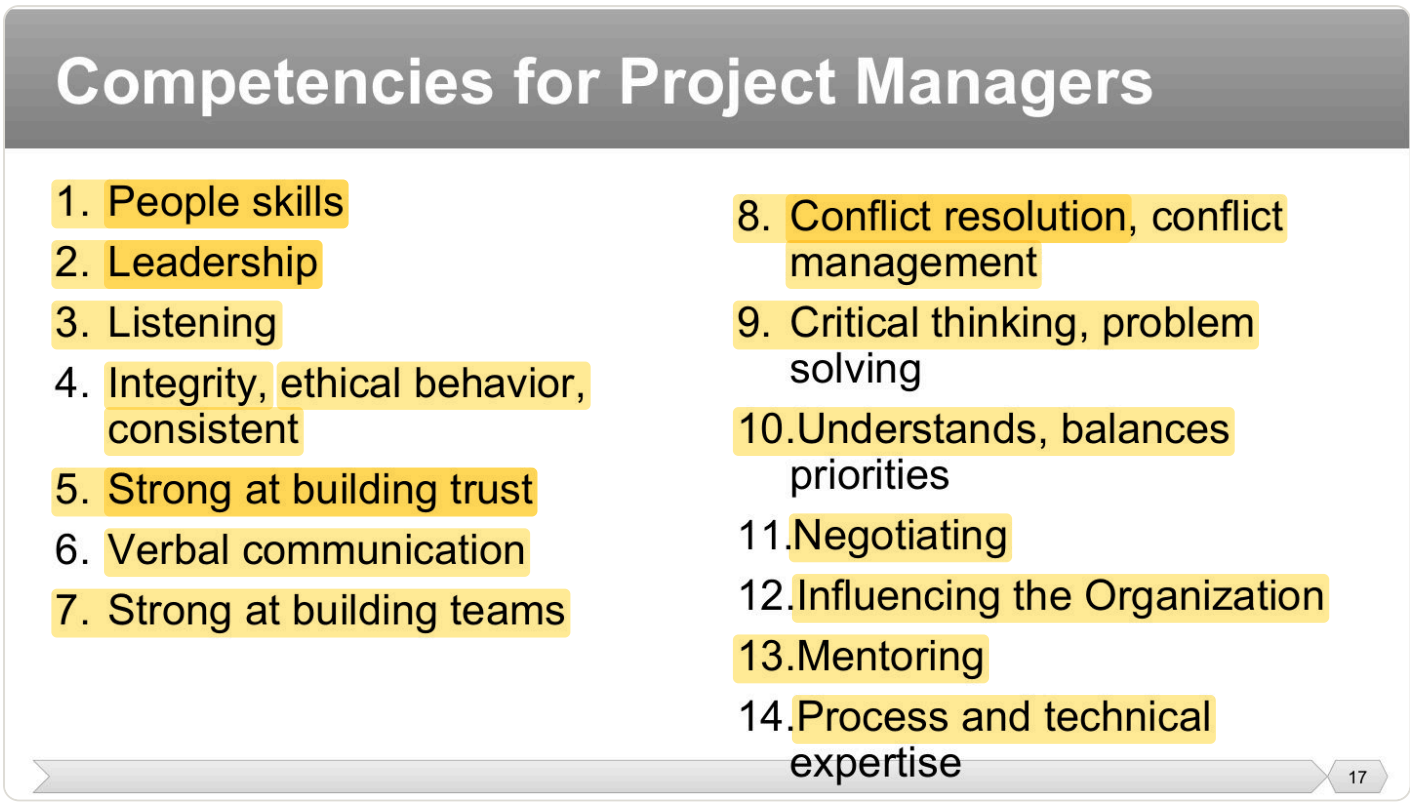
C Being comfortable with change

> Plans will change. A PM who can adjust calmly keeps the project moving.

D Locking in resources

> This secures people and equipment. It isn't about responding to a new direction.

 Competencies for Project Managers



NOTES

1. **People skills, leadership, listening and verbal communication** are at the top because a PM's only real tool is other people's work. Listening earns its own line since a PM who talks more than they listen misses the early warnings from the team.

2. Most PMs have no formal authority over their team, so people cooperate only if they believe the PM. **Trust** is what makes them do what you ask, and **integrity and consistency** are how you earn it. A PM who treats people differently from one week to the next quickly loses their trust.

3. These are for situations with competing interests. **Conflict resolution** handles disagreements inside the team. **Negotiating** gets resources from other managers. **Influencing the organization** gets decisions made above your level. **Balancing priorities and critical thinking** are how you decide what matters when everything feels urgent.

4. Only **one of the 14** is technical, and it is last on the list. A PM needs enough technical understanding to spot nonsense and earn the team's respect, not to be the best engineer. This surprises many engineers who become PMs.

TIPS & TRICKS

- Sort the 14 into three buckets rather than memorizing a list: **People** (skills, listening, verbal, teams, mentoring), **Character** (integrity, trust, leadership), **Decisions and politics** (conflict, critical thinking, priorities, negotiating, influencing). Then add **Process and technical** as the odd one out.
- Scenario trick: look at **what is going wrong**. People arguing → conflict resolution. Need budget from another manager → negotiating. Decision stuck above you → influencing.

EXAM ANGLE

Prediction Q1

Two senior developers keep arguing about the architecture in every meeting, and the rest of the team has stopped contributing. Which project manager competencies does this call for, and what should the PM do?

Answer: Conflict resolution/management, listening and building trust (plus team building). The PM should bring the disagreement into the open, keep it about the ideas rather than the people, make sure everyone is heard, and drive the group to a decision that the whole team commits to.

Prediction Q2

A PM needs a database expert who reports to another manager, and must agree on how many days she can have him. Which competency does this use?

A Mentoring

> Mentoring develops someone's abilities. It doesn't secure their time.

B **Negotiating**

> Reaching an agreement over a shared resource with someone who doesn't report to you is negotiation.

C Listening

> Listening helps, but the core activity here is bargaining for a resource.

D Process and technical

> She isn't using technical knowledge to get the expert's time.

Prediction

Q3

A PM keeps the same standards for everyone and always does what she says she will. Over time, the team tells her about problems early. Which competencies explain this?

A **Integrity, ethical and consistent behavior, and building trust**

> Consistency builds trust, and trust makes people bring bad news early.

B Process and technical

> Nothing here depends on technical ability.

C Critical thinking

> Reasoning well doesn't by itself make the team open up.

D Influencing the organization

> This concerns senior decision-makers, not how the team feels about her.

Prediction

Q4

A senior engineer spends an hour a week helping a new graduate learn how to estimate tasks. Which competency is this?

A **Mentoring**

> Developing another person's abilities over time is mentoring.

B Conflict resolution

> No disagreement is being resolved.

C Negotiating

> Nothing is being bargained over.

D Influencing the organization

> This concerns decisions at the organizational level, not coaching one person.

Prediction

Q5

A key decision has been stuck with senior management for weeks. The PM builds support among other department heads to move it forward. Which competency is this?

A Influencing the organization

> Getting things moving above and across your position without authority is influence.

B Strong at building teams

> This is about forming your own team. The people here aren't on it.

C Listening

> Listening alone won't move a stalled decision.

D Verbal communication

> Speaking is part of it, but the competency being used is influencing the organization.

Prediction

Q6

Three urgent requests arrive at the same time, and the PM decides which one matters most for the project goals. Which competency is this?

A People skills

> People skills help in relationships. This is a judgment about the work.

B Understands and balances priorities

> Deciding what matters most when several things compete is this competency.

C Mentoring

> Nobody is being developed.

D Conflict resolution

> No people are in dispute here. Only tasks are competing.

Prediction Q7

Most of the 14 competencies for project managers are technical.

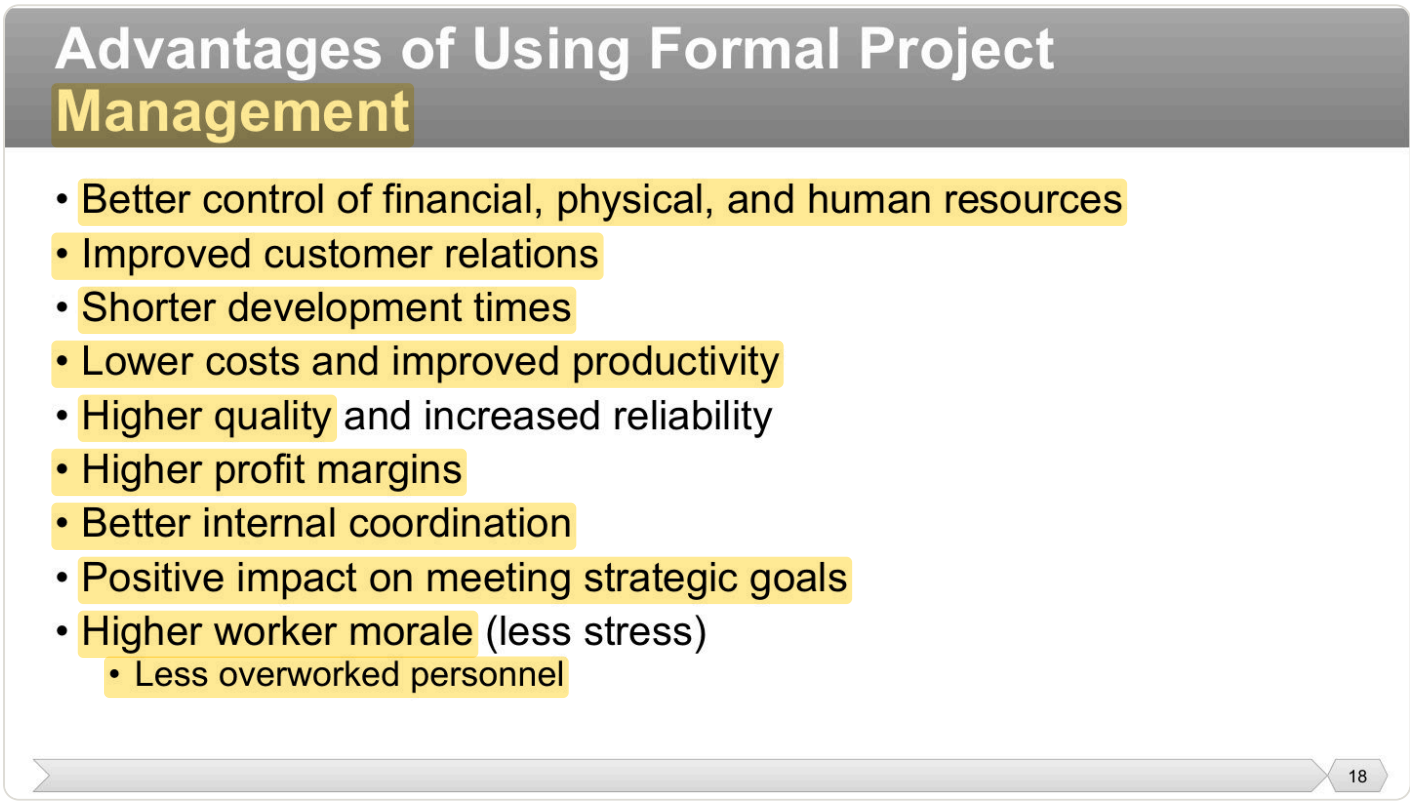
T True

> Count them: 13 of the 14 are about people, character or decisions, and only “process and technical” is technical.

F False

> Only one of the 14 (process and technical) is technical. The rest concern people, character and judgment.

SLIDE 18 / 70 **Advantages of Using Formal Project**



NOTES

1. Without formal PM, money, equipment and people get spent wherever someone shouts loudest. With it, there is a plan and a budget to compare against, so overspending shows up early instead of at the end. Productivity and profit improve because people spend less time on the wrong work and on redoing it.

2. Most delays and defects come from unclear requirements and late changes. Formal PM reduces both by agreeing on the work early and checking it regularly, which is why time and quality can improve together. Customers notice too, since they are told what is coming rather than being surprised.

3. When teams plan together, they stop stepping on each other’s work, which is “better internal coordination”. **Strategic goals** benefit because projects are how a strategy gets carried out: if projects deliver, the strategy happens.

4. People notice this benefit last, but it's very real. Poor planning leads to last-minute crunches, so staff work late and quit. Planned work spreads the effort, giving **higher morale and less stress**, which then feeds back into quality.

TIPS & TRICKS

- Group the ten into four: **Money** (control of resources, lower costs, profit), **Delivery** (time, quality, customers), **Coordination/Strategy** (internal coordination, strategic goals), **People** (morale, not overworked). Remember "**CaMPeD**": Coordination, Money, People, Delivery.

EXAM ANGLE

Past exam · Final 251 · Q1.1 — Q1

How does project management contribute to organizations in achieving their strategic objectives? Please elaborate.

Answer: Strategy is carried out through projects. Project management selects and prioritizes projects (through portfolios and programs) so they align with strategic objectives, then delivers them so the outputs create the intended outcomes, benefits and value. It uses limited resources efficiently, controls scope, time and cost, and manages risk and change. That lets the organization reach its goals and respond to its market faster than competitors.

Prediction — Q2

Which is NOT listed on the slide as an advantage of using formal project management?

A **No need for testing, since quality is planned in**

> Formal PM gives “higher quality and increased reliability”, but nothing suggests removing testing.

B Improved customer relations

> This is listed on the slide.

C Higher profit margins

> This is listed on the slide.

D Shorter development times

> This is listed on the slide.

Prediction

Q3

After adopting formal PM, a team stops doing weekend crunches before each release. Which listed advantage does this show?

A Better control of financial resources

> Fewer crunches may save money, but the scenario describes the effect on people.

B Improved customer relations

> The customer isn't mentioned in this scenario.

C Positive impact on strategic goals

> Nothing here links the change to strategy.

D Higher worker morale and less overworked personnel

> Planned work spreads out the effort, reducing stress and overwork.

Prediction

Q4

The finance team can now see what each project spends and which staff it uses. Which listed advantage is this?

A Higher worker morale

> This concerns how staff feel, not financial tracking.

B Better control of financial, physical, and human resources

> Being able to see and steer money and staff is what control of resources means.

C Higher quality and increased reliability

> This concerns the product, not visibility into spending.

D Shorter development times

> Visibility doesn't by itself shorten delivery.

Prediction

Q5

Two departments stop duplicating work because their project plans are shared. Which listed advantage is this?

A **Better internal coordination**

> Different groups working from a shared plan is coordination.

B Improved customer relations

> Both groups here are internal.

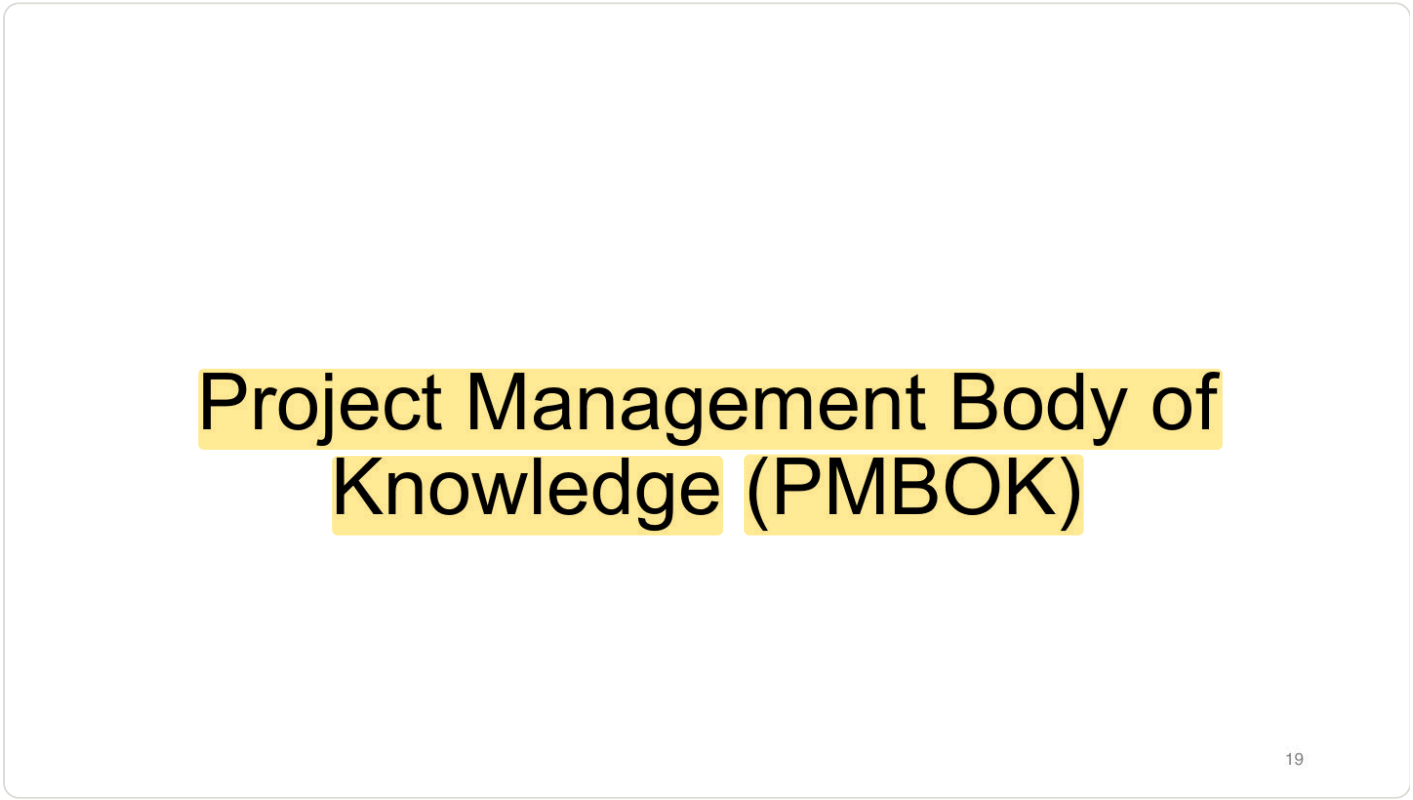
C Lower costs and improved productivity

> This may follow, but the direct advantage described is coordination.

D Higher profit margins

> This is a distant effect. The scenario directly describes coordination.

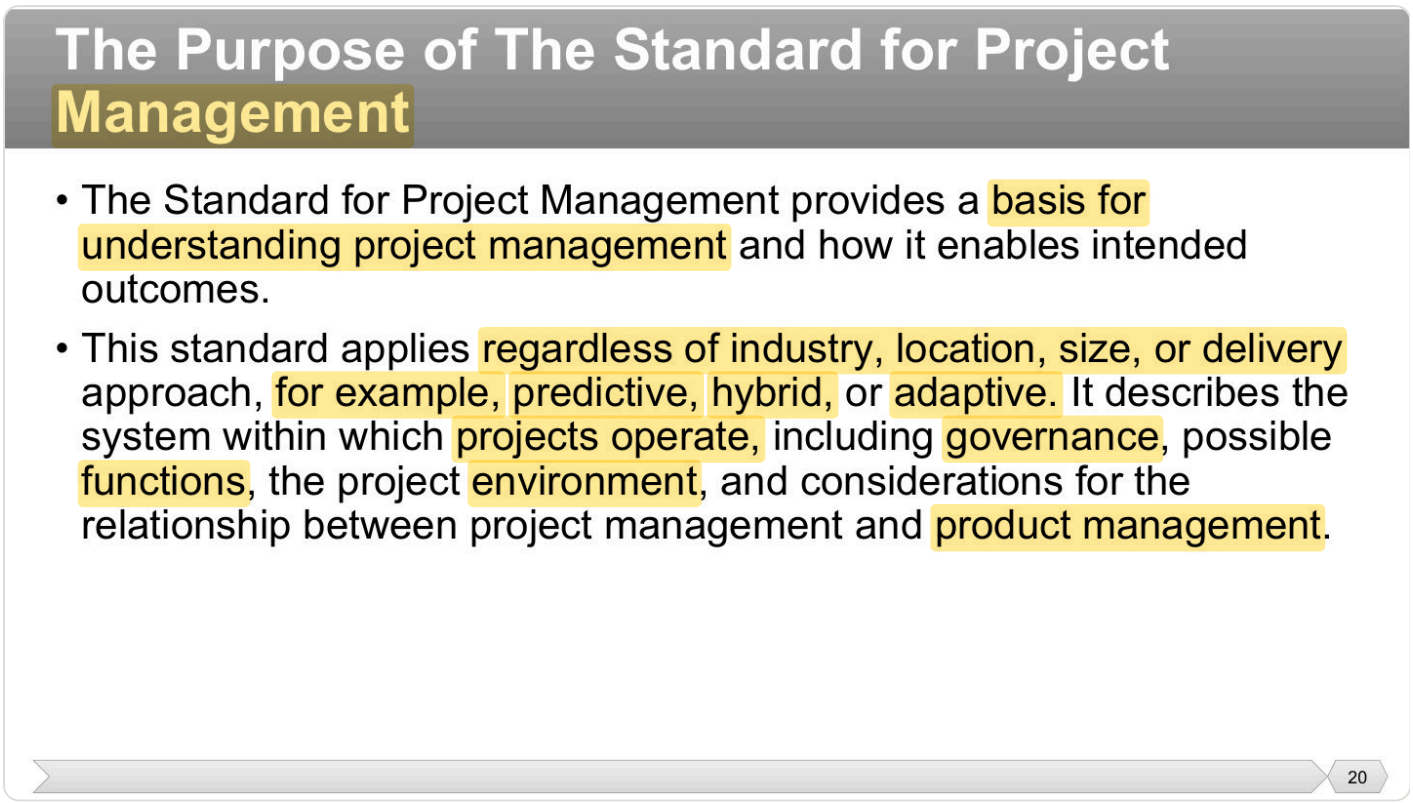
SLIDE 19 / 70 **Project Management Body of Knowledge (section)**



NOTES

1. Section divider. PMBOK (the Project Management Body of Knowledge) is PMI's reference for the profession. These slides use its 7th edition, which is organized around principles and performance domains rather than step-by-step processes.

 The Purpose of The Standard for Project



NOTES

1. "Basis for understanding" means the standard gives everyone a shared language. When a contractor from another country says "stakeholder" or "deliverable", you can both mean the same thing. It explains what project management is for rather than telling you exact steps to follow.

2. The standard applies to a bank, a hospital, a five-person startup or a national program, and to agile or waterfall teams. If it depended on one industry or method, it couldn't work as a shared language. Exam options that limit it to large, IT or waterfall projects are false.

3. The slide says the standard looks beyond the project itself: **governance** (who makes decisions), **functions** (who does what), the **environment** (what surrounds the project) and how it relates to **product management** (what happens to the product after the project ends). A project's success depends on all of these, not only on its internal plan.

TIPS & TRICKS

- **SLID**: Size, Location, Industry, Delivery approach. The standard applies regardless of these, so if an answer limits it by any of them, it's wrong.
- The four things it describes: **FiG PiE** — Functions, Governance, Product, Environment.

EXAM ANGLE

Prediction Q1

The Standard for Project Management applies only to large projects that use a predictive delivery approach.

T True

> The slide says “regardless of industry, location, size, or delivery approach”, so any statement limiting it to one kind of project is false.

F False

> It applies regardless of industry, location, size or delivery approach.

Prediction Q2

What does the Standard for Project Management provide?

A A fixed sequence of steps every project must follow

> The standard guides understanding. It is not a required sequence.

B A certification for project managers

> PMP and CAPM are certifications. The standard is a reference.

C A basis for understanding project management and how it enables intended outcomes

> This is the slide’s statement of its purpose.

D A template for project budgets

> It discusses principles and systems, not specific templates.

Prediction Q3

Besides the project itself, what does the standard describe?

A Salaries and HR policies of the organization

> These may be part of the environment, but they aren't what the slide lists.

B Only the project's schedule and budget

> Those are internal to a project, whereas the standard covers the surrounding system.

C Programming languages and technical architecture

> The standard isn't tied to any technology.

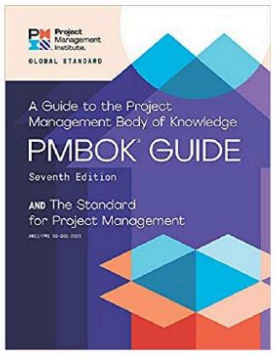
D **Governance, possible functions, the project environment, and the relationship with product management**

> The slide lists these as the system within which projects operate.

SLIDE 21 / 70 Project Management

Project Management 12 Principles
(PMBOK v7)

1. Stewardship : Act responsibly and ethically.
2. Team: Foster trust, respect, and open communication to empower team members.
3. Stakeholders: involve stakeholders
4. Value: Prioritize outcomes that deliver value
5. Systems Thinking: understand how project elements interact within broader organizational and external contexts.
6. Leadership: Lead with integrity, adaptability, and empathy
7. Tailoring: Adapt methods, tools, and approaches
8. Quality: Ensure quality is embedded from the start
9. Complexity: Embrace uncertainty and complexity
10. Risk: Identify, assess, and respond to risks
11. Adaptability and Resiliency: Be flexible and ready to pivot
12. Change: Support transformation and continuous improvement



21

NOTES

1 Principles describe **how to behave**, not what steps to take. **Stewardship** means treating the money, people and trust you've been given as if they were not yours to waste: reporting honestly, spending carefully, thinking about consequences beyond this project.

2. **Team** and **Stakeholders** are both about people, but in different directions: inward and outward. A team with trust raises problems early. Stakeholders involved from the start tell you what they need before you've built the wrong thing.

3. These three set direction. **Value** asks, "Is this worth doing?" rather than "Did we finish the list?" **Systems thinking** reminds you that a change here can break something elsewhere. **Leadership** means setting the example with integrity, and the slide's "adaptability and empathy" means adjusting to what people need.

4. These three shape how the work gets done. **Tailoring**: no method fits every project, so adapt it. **Quality**: building it in from the start is cheaper than fixing it at the end. **Complexity**: some things can't be fully predicted, so expect that and stay alert.

5. These three deal with an unpredictable future. **Risk**: find what might go wrong (or right) and act before it happens. **Adaptability and resiliency**: bend when conditions change, and recover after a hit. **Change**: help people move to the new way of working, since a delivered system nobody adopts fails.

TIPS & TRICKS

- Remember them in four groups of three: **People-with-care** (Stewardship, Team, Stakeholders), **Direction** (Value, Systems, Leadership), **How we work** (Tailoring, Quality, Complexity), **The future** (Risk, Adaptability, Change).
- Sentence trick for the order: **S**ome **T**eams **S**ee **V**alue, **S**ystems, **L**eaders; **T**hey **Q**uickly **C**onquer **R**isk **A**nd **C**hange.
- **12 principles = how to behave. 8 domains = what to focus on.** The bigger number is behaviour.

EXAM ANGLE

Past exam · Midterm 251 · V1 · MCQ 5 Q1

Which of the following best reflects the principle of “Stewardship” in project management?

A Delegating all responsibility for ethical practices to external auditors

> Stewardship is personal, so you can’t hand it off to auditors.

B Taking personal responsibility for the careful use of resources, upholding values, and acting with integrity

> Stewardship means acting with integrity, care, trustworthiness and compliance, inside and outside the organization. (Also Midterm 251 V2 MCQ 4.)

C Focusing only on delivering project outputs, regardless of long-term impacts.

> Stewardship looks beyond outputs to financial, social, technical and environmental impacts.

D Ensuring accountability is limited to the project sponsor alone.

> Everyone on a project is accountable for stewardship, not just the sponsor.

Past exam · Midterm 261 · MCQ Q2

A project team has limited resources and must choose the feature that will provide the greatest benefit to users. Which principle applies?

A Focus on Value

> Value is the ultimate indicator of project success; prioritizing the most beneficial feature is focusing on value.

B Navigate Complexity

> Navigating complexity deals with uncertainty and interacting factors. Here the decision is simply about which feature is worth most.

C Embrace Adaptability and Resiliency

> This is about responding to change and setbacks. Nothing has changed or gone wrong here.

D Tailor Based on Context

> Tailoring adapts the methods used. This decision is about what to build.

Prediction

Q3

Developers feel safe admitting mistakes in meetings, and they openly raise concerns. Which principle is being applied?

A Leadership

> Leadership might foster this, but the scenario describes the team's climate.

B **Team**

> The slide describes Team as fostering trust, respect and open communication to empower members.

C Stakeholders

> Stakeholders are usually outside the team. This scenario concerns how the team members treat one another.

D Quality

> Open communication may improve quality, but the behavior described is about the team.

Prediction

Q4

A PM brings end users into requirements sessions from the very first week. Which principle is this?

A Team

> Users aren't team members.

B Tailoring

> Nothing about the method is being adapted here.

C **Stakeholders**

> Involving the people affected by the project is what this principle asks.

D Change

> This principle supports the move to the new way of working. The scenario is early engagement.

Prediction

Q5

A small startup drops most of the heavy documentation its parent company requires, keeping only what is needed for a two-person project. Which principle is this?

A Tailoring

Tailoring means adapting methods, tools and approaches to the situation.

B Stewardship

Stewardship concerns responsible and ethical behavior, not adapting process.

C Quality

Quality concerns building it in. Here the point is fitting the process to the project.

D Complexity

Complexity concerns uncertainty and interactions. Nothing here is complex.

Prediction

Q6

The team adds automated tests and code reviews from the first sprint instead of testing at the end. Which principle is this?

A Value

Value is about which outcomes are worth pursuing.

B Team

The focus here isn't on trust or communication.

C Quality

The slide says to ensure quality is embedded from the start.

D Risk

Testing reduces risk, but "embedded from the start" is the slide's wording for Quality.

Prediction

Q7

Before starting, the team lists what could go wrong and prepares a backup supplier. Which principle is this?

A Risk

Identifying, assessing and responding to risks is this principle.

B Complexity

Complexity concerns uncertainty and interactions, while listing specific threats is risk work.

C Adaptability and Resiliency

This is about reacting flexibly once things change. Here the team is preparing in advance.

D Change

This supports people through transformation, not planning for problems.

Prediction

Q8

When a vendor suddenly goes out of business, the team quickly switches to another and keeps going. Which principle is this?

A Adaptability and Resiliency

Being flexible and ready to pivot when conditions change is this principle.

B Tailoring

Tailoring adapts methods to the context. This is about recovering from a setback.

C Stewardship

Nothing here is about ethics or care of resources.

D Risk

Risk is about preparing beforehand. The scenario shows the response to an event that already happened.

Prediction

Q9

The PM helps staff learn the new system and move away from the old process over several months. Which principle is this?

A Team

The staff here are users of the new system rather than the project team.

B Change

Supporting transformation and continuous improvement is this principle.

C Leadership

Leadership helps, but the activity described is enabling the change.

D Value

Value concerns what is worth delivering. Here the focus is on people adopting it.

Prediction

Q10

A leader adjusts how she treats team members, patient with one who is struggling and direct with another who prefers it. Which principle is this?

A Tailoring

Tailoring adapts project methods. Adapting personal style to people is leadership.

B Team

Team is about the shared climate of trust. Here the emphasis is on the leader's behavior.

C Leadership

The slide says to lead with integrity, adaptability and empathy.

D Stakeholders

These are team members, and the focus isn't on engaging outside parties.

Prediction

Q11

Nobody can predict how three new technologies and two departments will interact, so the team reviews the situation often and stays alert. Which principle is this?

A Complexity

The slide says to embrace uncertainty and complexity.

B Value

The team isn't deciding what is most worthwhile.

C Quality

Quality isn't the subject of this scenario.

D Risk

Risk works on specific identified threats. Here the unpredictability comes from many interacting factors.

Prediction

Q12

The PMBOK v7 principles are a sequence of steps to be carried out in order.

T True

Principles guide how people behave. Nothing about them is a sequence, and the numbering is only a list.

F False

They are guiding behaviors that apply throughout a project, with no required order.

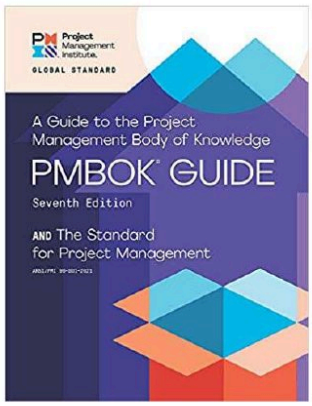
 Project Management

Project Management

8 Project Performance Domains (PMBOK v7)

-> key areas of focus that must be managed effectively to achieve successful project outcomes

1. Stakeholders
2. Team
3. Development Approach and Life Cycle
4. Planning
5. Project Work
6. Delivery
7. Measurement
8. Uncertainty



22

NOTES

1. A **domain** is something you must keep paying attention to. Think of driving: steering, speed and mirrors aren't steps you do in order, you handle them all at once throughout the journey. Domains work the same way, and they influence each other. That is why "phases", "steps" and "in order" are wrong answers.

2. Each one asks its own question. **Stakeholders**: who cares about this? **Team**: are the people working well? **Development approach and life cycle**: how will we build it? **Planning**: what's the plan? **Project work**: how's the day-to-day? **Delivery**: are we producing what's needed? **Measurement**: how are we doing? **Uncertainty**: what might surprise us? Chapter 1.2 covers each in depth.

TIPS & TRICKS

- Sentence for the eight: **S**ome **T**eams **D**on't **P**lan **P**roperly, **D**elaying **M**any **U**pdates (Stakeholders, Team, Development, Planning, Project work, Delivery, Measurement, Uncertainty).
- **Domains = driving**: you do them all at once, not in sequence.

EXAM ANGLE

Past exam · Midterm 251 · V1 · MCQ 3 Q1

Which of the following best explains the nature of project performance domains?

A **They represent distinct areas of focus that guide effective project management.**

> Performance domains are areas of focus that run concurrently; they are not sequential processes or deliverables. (Also Midterm 251 V2 MCQ 1.)

B They are rigid processes that must be followed in order, from initiation to closure.

> Domains run at the same time and interact. They aren't an ordered process.

C They are optional tools that project managers may use only in large projects.

> They apply to every project, whatever its size.

D They are specific deliverables required at the end of each project phase.

> Deliverables are what a project produces. Domains are areas you keep paying attention to.

Prediction Q2

Which of these is NOT one of the 8 performance domains?

A **Procurement**

> Procurement was a knowledge area in older PMBOK editions, and it is not one of the eight.

B Measurement

> This is domain 7.

C Uncertainty

> This is domain 8.

D Project Work

> This is domain 5.

Prediction

Q3

How many project performance domains does PMBOK v7 define?

A 5

> Five is the number of process groups in older PMBOK editions.

B 10

> Ten was the number of knowledge areas in older editions.

C 12

> That is the number of principles.

D **8**

> There are 8 domains and 12 principles. Don’t swap them.

Prediction

Q4

A team is deciding whether to work in sprints or plan everything first. Which domain does this fall under?

A Planning

> Planning organizes the work once the approach is chosen. The choice itself belongs to this domain.

B Delivery

> Delivery concerns producing what’s required, not selecting the method.

C **Development Approach and Life Cycle**

> Choosing how the work will be built and phased is this domain.

D Uncertainty

> Uncertainty may influence the choice, but the decision belongs to the development approach.

Prediction

Q5

A PM tracks progress against targets and reports trends to the sponsor. Which domain is this?

A Stakeholders

> The sponsor is a stakeholder, but the activity described is measuring performance.

B Planning

> Planning sets targets. Tracking against them is measurement.

C Project Work

> This covers doing the daily work, not assessing how it is going.

D Measurement

> Assessing performance and acting on it falls under Measurement.

Prediction

Q6

Performance domains are carried out one at a time: when the Planning domain ends, the Project Work domain begins.

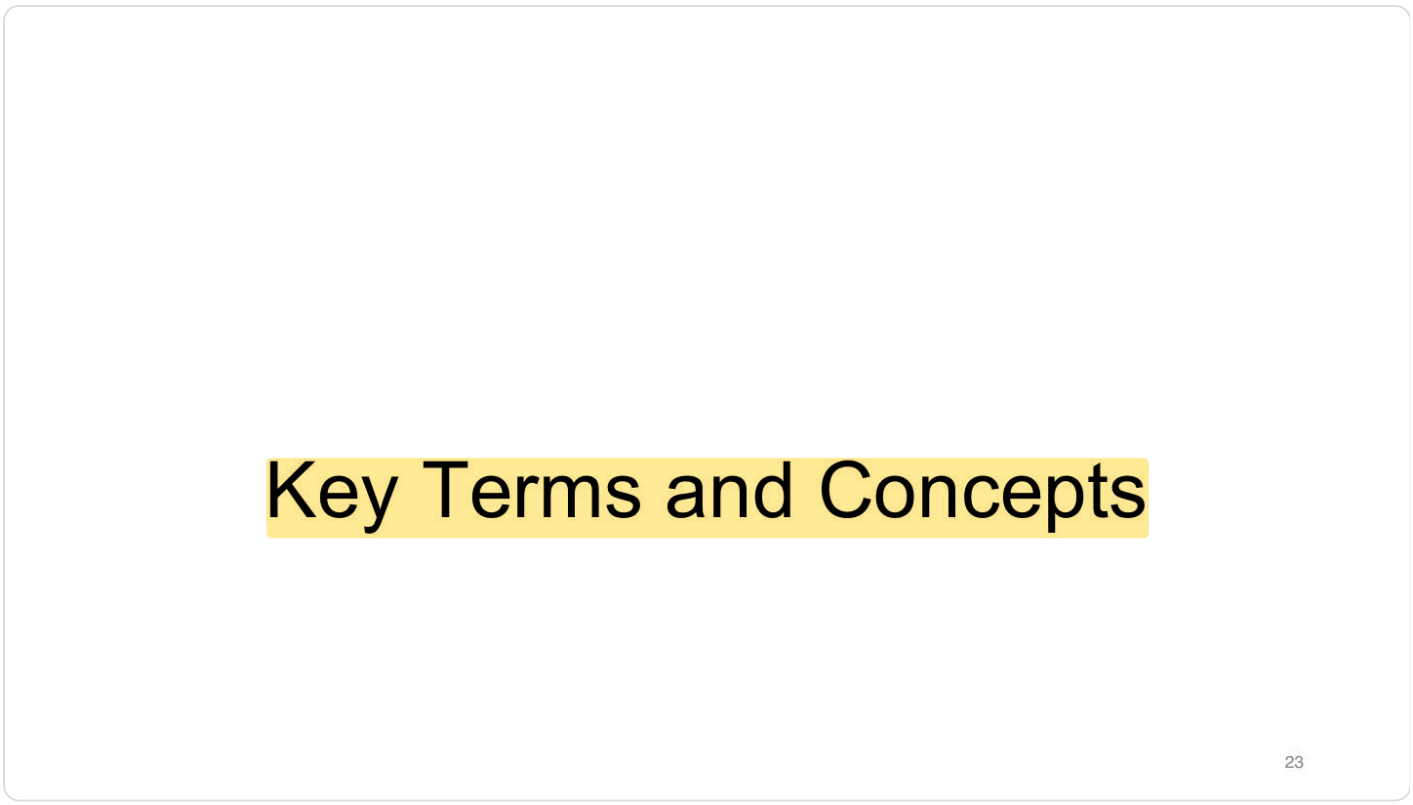
T True

> That’s the classic trap. Domains aren’t phases, so planning continues while work is being done.

F False

> Domains run at the same time throughout the project and affect each other.

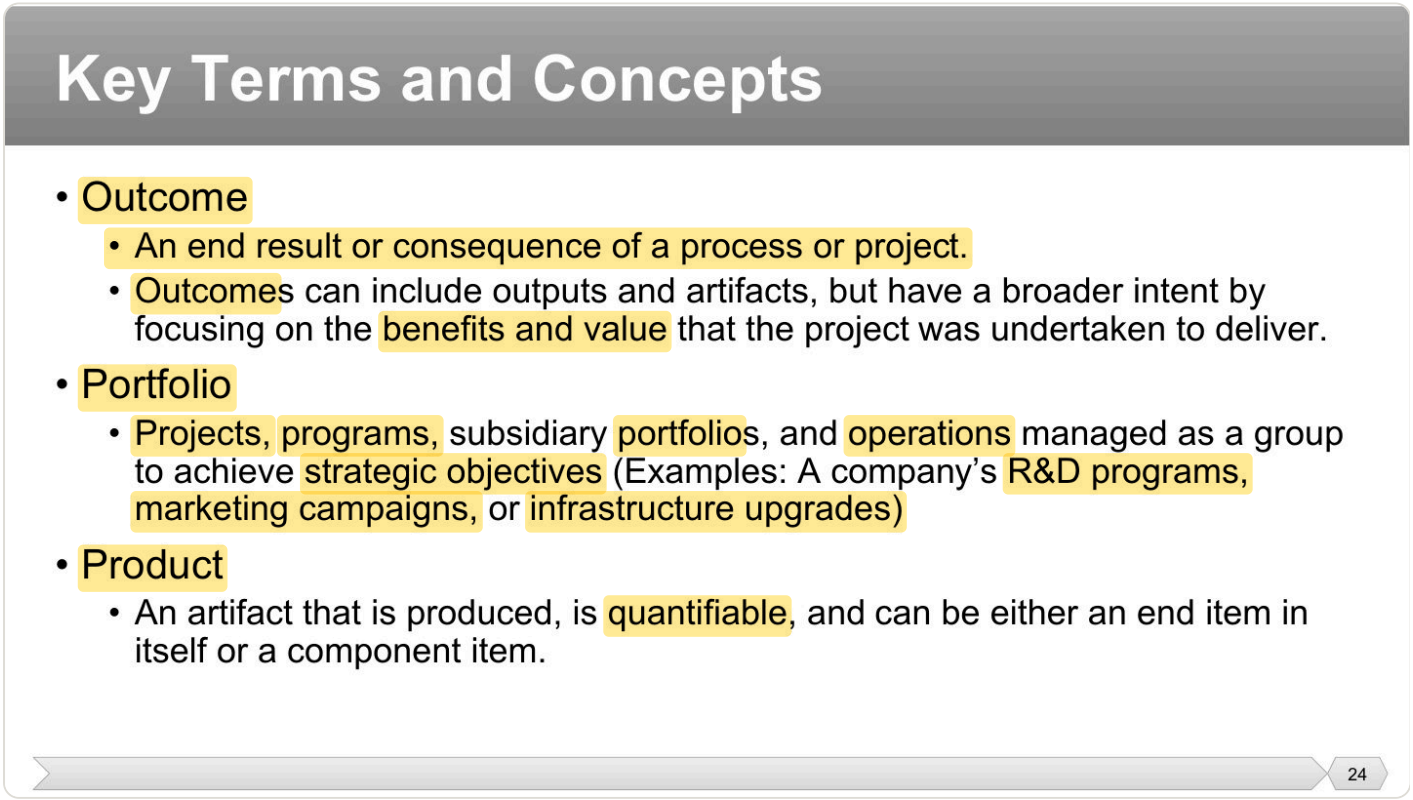
SLIDE 23 / 70 Key Terms and Concepts (section)



NOTES

1 Section divider. The next five slides define the terms the exams test most. Similar-sounding pairs like program and portfolio, or project and product, are used on purpose, so learn what separates them.

SLIDE 24 / 70 Key Terms and Concepts



NOTES

1. An **outcome** is the difference something makes, while an output is the thing itself. A hospital's new appointment app is an output. Fewer missed appointments is the outcome, and that outcome is why anyone paid for the app. If the app ships but missed appointments stay the same, you have an output with no useful outcome.

2. A **portfolio** is how leadership looks at everything the organization is investing in, grouped by strategy. The items don't have to relate to each other, like a new R&D program, a marketing campaign and a data center upgrade. It is also the only grouping here that includes ongoing **operations**. The question it answers: "Is this the right mix of work for our strategy?"

3. A **product** is something real you can count. "Quantifiable" means you can point at it and measure it: one mobile app, 500 units. "End item or component" means a login module counts as a product just like the whole app does.

TIPS & TRICKS

- **Output = the thing. Outcome = the difference it makes.**
- Portfolio = **your investment portfolio**: stocks, bonds and property that have nothing to do with each other, chosen together for one goal.

EXAM ANGLE

Prediction Q1

"Projects, programs, subsidiary portfolios, and operations managed as a group to achieve strategic objectives" defines a:

A Program

> A program groups related work for coordinated benefits, and doesn't include operations in its definition.

B Product

> A product is a quantifiable artifact, not a group of work.

C Value stream

> This term isn't defined on the slide, and it isn't a grouping for strategic objectives.

D Portfolio

> It is the only grouping that includes operations and is defined by strategic objectives.

Prediction Q2

A team ships a new online ordering system, and average customer wait time falls by 30%. Which is the outcome?

A The online ordering system

> That is an output (the artifact). The outcome is what it changes.

B The project plan

> A plan is a working document, not a result of the project.

C The team that built it

> The team produces the result. It isn't the result.

D The 30% reduction in wait time

> An outcome is the result or consequence, focused on the benefit the project was undertaken to deliver.

Prediction

Q3

A company groups an R&D program, a marketing campaign and an infrastructure upgrade together for strategic oversight, though they are unrelated. What is this?

A A program

> A program's items must be related and coordinated for extra benefits. These are unrelated.

B A project

> A project is a single temporary effort, not a group of different efforts.

C A portfolio

> A portfolio's items can be unrelated. What unites them is the strategic objectives.

D Operations

> Operations are ongoing business functions. They can belong to a portfolio but aren't the grouping itself.

Prediction

Q4

Which of these fits the definition of a product?

A A weekly team meeting

> A meeting is an activity and produces no artifact in itself.

B The company's five-year strategy

> Strategy isn't a quantifiable produced artifact.

C A 20% rise in customer satisfaction

> This is an outcome rather than an artifact.

D A payment module that is one component of a larger app

> A product is produced and quantifiable, and it can be a component item.

Prediction Q5

Outcomes can include outputs and artifacts, but they focus more broadly on the benefits and value the project was undertaken to deliver.

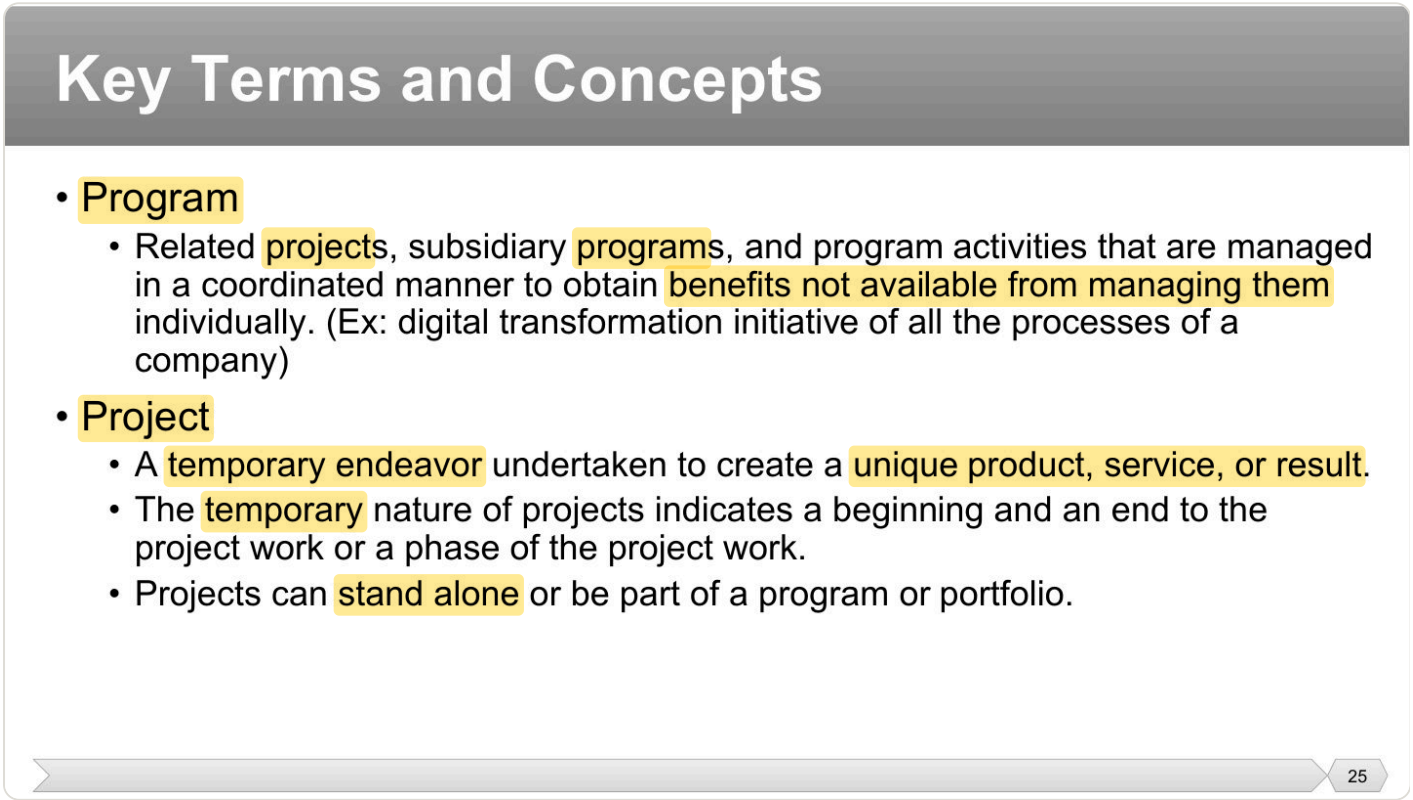
T **True**

> This is the slide's wording: outcomes include outputs, with broader intent.

F False

> The statement is correct: outputs can be part of an outcome, but outcomes focus on benefits and value.

SLIDE 25 / 70 **Key Terms and Concepts**



NOTES

1. A **program** exists because the pieces are worth more together. A bank might run mobile, branch and call-center upgrades as separate projects, but coordinated together, customers get one consistent experience, which none of the projects could achieve alone. That extra is "benefits not available from managing them individually". No extra benefit means there's no reason for a program.

2. A **project** has two defining features. **Temporary** means it has a start and an end, not that it is short: a five-year metro construction is still temporary. **Unique** means the result has not been produced in exactly this way before. Monthly payroll is neither, so it is an operation. "Or a phase of the project work" means phases have their own beginning and end too.

3. A project doesn't have to belong to anything. A small company might run one website redesign without any program or portfolio around it. An exam option saying projects "must" be part of a program is false.

TIPS & TRICKS

- **Portfolio = strategy (may be unrelated). Program = related + extra benefits. Project = temporary + unique.**
- Program test: remove the coordination. Does anything get lost? If yes, it’s a program.
- Project test: **does it end? Is it one of a kind?** Two yeses means it’s a project.

EXAM ANGLE

Past exam · Midterm 251 · V1 · MCQ 2 Q1

A group of related projects managed in a coordinated manner to obtain benefits not available from managing them individually is called a:

A Program

A program is related projects managed together for benefits; a portfolio groups projects, programs and operations for strategic objectives and they can be unrelated. (Also Midterm 251 V2 MCQ 3, options shuffled.)

B Portfolio

A portfolio can hold unrelated work and is defined by strategic objectives, not by coordinated benefits.

C Project

A project is a single temporary effort, not a coordinated group.

D Value stream

This term isn't defined in this deck, and it doesn't describe a group of coordinated projects.

Prediction Q2

A company runs monthly payroll using the same process every time. Is this a project?

A Yes, because it involves several people

The number of people doesn't define a project.

B Yes, because each month's payroll has a start and an end

Each cycle ends, but the work repeats the same way indefinitely, so it isn't unique.

C No. It is ongoing and repeated, so it is an operation

A project must be temporary and create a unique result. Payroll is neither.

D It is a program, because it repeats

A program is a coordinated group of related projects, not repeated routine work.

Prediction Q3

A project lasting four years cannot be considered “temporary”.

T True

This is a common trap: temporary concerns having a defined start and end, regardless of the length.

F False

Temporary means it has a beginning and an end, not that it is short.

Prediction Q4

Every project must be part of a program or portfolio.

T True

The slide says projects “can stand alone”. Belonging to a program or portfolio is possible but not required.

F False

Projects can stand alone or be part of a program or portfolio.

Prediction Q5

A company’s digital transformation combines several related projects so that their results work together in ways no single project could achieve. This is best called a:

A Product

A product is an artifact, not a set of coordinated projects.

B Portfolio

A portfolio doesn’t require its items to be related. Here the relatedness is the point.

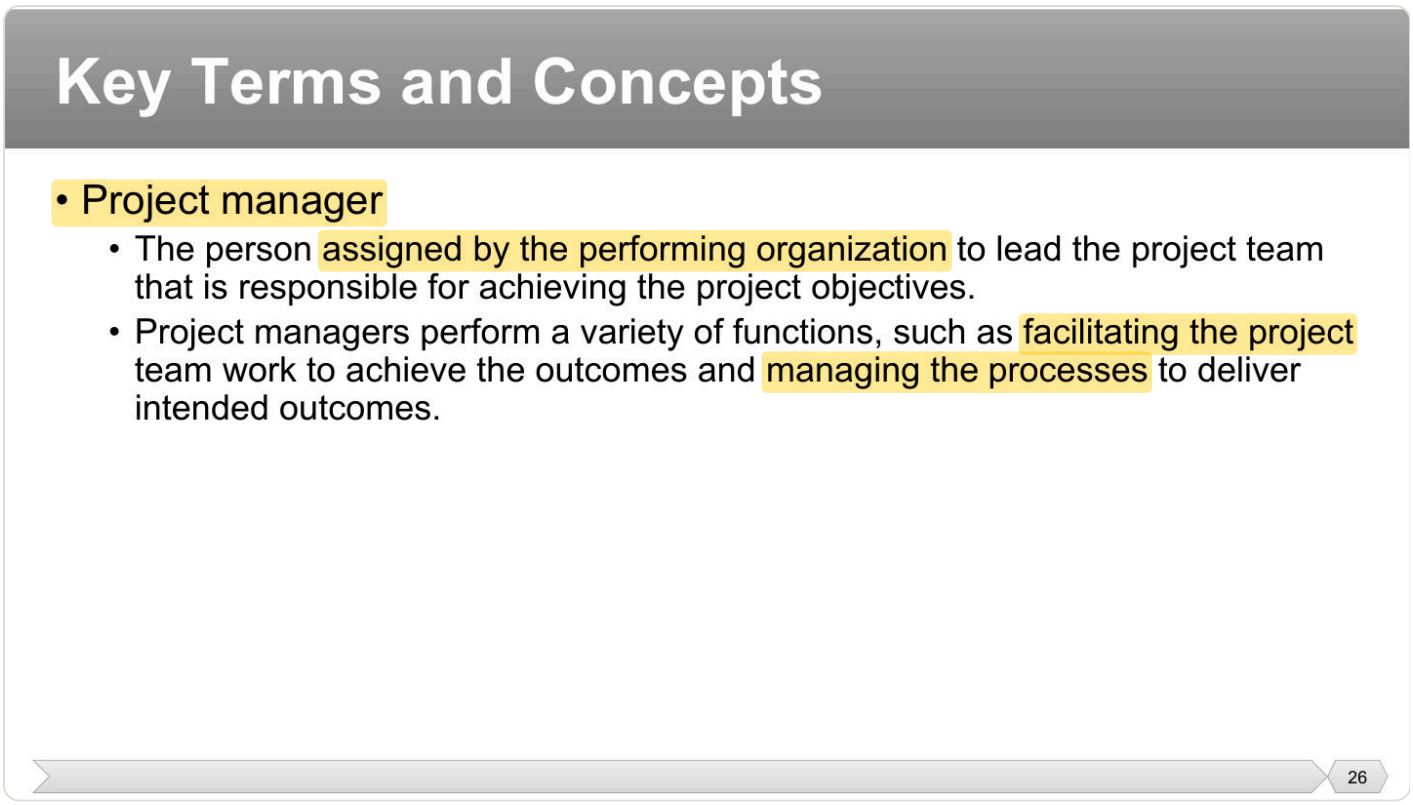
C Program

The slide uses digital transformation as its example of a program.

D Subsidiary portfolio

This is a portfolio inside a portfolio, which doesn’t describe coordinated, related projects.

 Key Terms and Concepts



NOTES

1. "Assigned by the performing organization" tells you where the PM's authority comes from: the organization doing the work appoints them. The team doesn't vote them in, and the client doesn't pick them. They are accountable for the project's objectives on the organization's behalf.

2. The two functions are different in character. **Facilitating** is about people: clearing obstacles, connecting those who need to talk, keeping the team moving. **Managing processes** is about the system: planning, tracking, controlling. A PM strong in only one has a team that either likes them but misses deadlines, or follows the plan but burns out.

TIPS & TRICKS

- Two hats: **F**acilitator (people) and **M**anager of processes (system). Remember **FM**, like the radio.

EXAM ANGLE

Prediction Q1

Who assigns the project manager, according to the definition?

A The PMI

> PMI certifies people. It doesn't assign them to projects.

B The customer

> The customer sets the need but doesn't generally appoint the PM.

C The performing organization

> The organization doing the work assigns the person who leads the team.

D The project team

> A team doesn't elect its PM.

Prediction Q2

A PM sets up a meeting between the design and backend teams to clear a blocker so that they can keep moving. Which function is this?

A Providing resources

> Allocating budget or people is a different function, usually the sponsor's.

B Facilitating the project team's work

> Helping the team do its work toward the outcomes is facilitating.

C Applying technical expertise

> She isn't giving technical advice. She's connecting the people who have it.

D Managing the processes

> Processes are the plans, tracking and controls. Here she is helping people work together.

Prediction Q3

A PM updates the schedule, tracks progress and enforces the change process. Which function is this?

A Facilitating the project team's work

> Facilitating is about supporting the people, not the mechanics of tracking.

B Governance

> Governance sets the authority and rules. The PM runs the process within them.

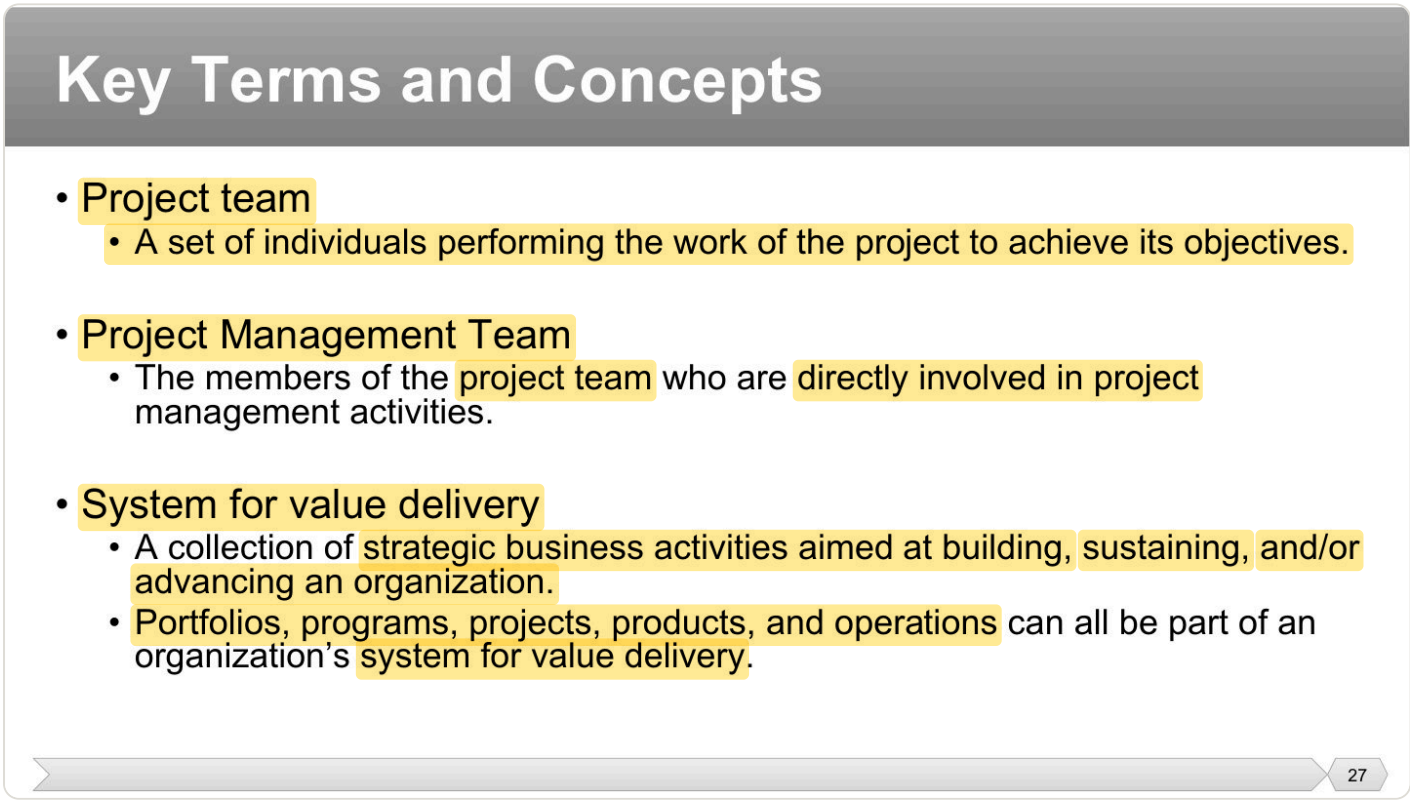
C **Managing the processes to deliver the intended outcomes**

> Planning, tracking and controlling make up process management.

D Performing the project work

> The team performs the work and produces deliverables.

SLIDE 27 / 70 **Key Terms and Concepts**



NOTES

1. The **project team** is everyone doing the project's work: developers, testers, designers, the PM too. The test is simple: are you working on it?
2. The **project management team** is the subset managing the work, like the PM, a scheduler or a team lead who plans. All of the management team is on the project team, but not the other way round. The names are so similar that this is a natural exam trap, so focus on the word "management".

3 The **system for value delivery** is the big picture. An organization doesn't create value from one project. It comes from everything working together, including projects, products and the operations that run them day to day. "Building, sustaining and/or advancing" means the system both keeps the business going and moves it forward.

TIPS & TRICKS

- **Project team ⊃ project management team**: a big circle (everyone working) with a small circle inside it (those managing).
- System for value delivery contains **5 things: four Ps and an O** — Portfolios, Programs, Projects, Products, Operations.

EXAM ANGLE

Past exam · Midterm 251 · V1 · MCQ 9 Q1

In the context of the "system for value delivery," which of the following is the most accurate statement?

A Only portfolios and programs contribute to value delivery in an organization, while projects and products have no significant role.

> All five components can contribute, including projects and products.

B A system for value delivery includes portfolios, programs, projects, products, and operations, all working together to build, sustain, or advance an organization.

> The value delivery system is the whole set of portfolios, programs, projects, products and operations working together. (Also Midterm 251 V2 MCQ 10.)

C Value delivery systems are only relevant to large organizations and do not apply to smaller projects.

> Nothing limits it to large organizations.

D Products are the sole contributor to value delivery, with programs and projects playing a supporting role only.

> No single component is the sole contributor. They work together.

Prediction Q2

A tester on a software project does no planning or tracking. Which group is she in?

A The project team, but not the project management team

> She performs the project's work, but isn't directly involved in managing it.

B Both, since all members manage the project

> Only those directly involved in management activities belong to the management team.

C The project management team only

> Management team members manage the work. She doesn't.

D Neither, since she only tests

> Testing is project work, so she is part of the project team.

Prediction

Q3

The “project management team” is best defined as:

A The senior executives overseeing the portfolio

> These people provide governance and direction, but they aren’t this team.

B The customers who approve deliverables

> Customers are stakeholders, not project team members.

C **The members of the project team who are directly involved in project management activities**

> This is the slide’s definition. It is a subset of the project team.

D All individuals performing the work of the project

> That defines the project team.

Prediction

Q4

Portfolios, programs, projects, products, and operations can all be part of an organization’s system for value delivery.

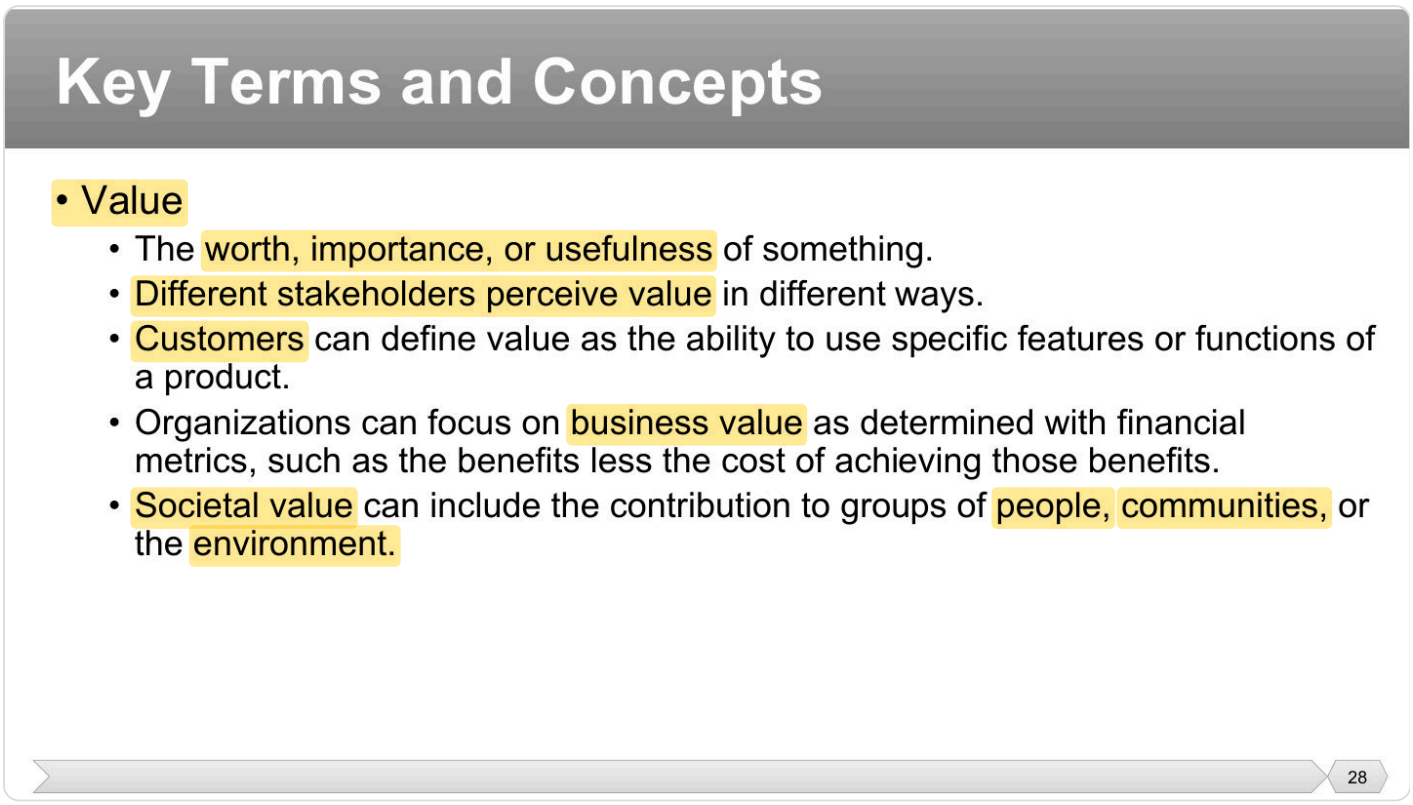
T **True**

> The slide lists all five as possible parts.

F False

> The slide says exactly this: all five can be part of the system.

 Key Terms and Concepts



NOTES

1. The key idea is that **value depends on who is asking**. A faster checkout is valuable to a customer, while a compliance feature nobody sees is valuable to the company because it avoids fines. A project can fail for one group and succeed for another, so "who needs this and why?" is an essential question.

2. **Customers** judge value directly: can I do what I need with it? They care about the feature working, not what it cost to build.

3. **Business value** is what the organization gains after paying for it: a project bringing $5 million in savings at a cost of $2 million has $3 million in value. That calculation is what "benefits less the cost" means.

4. **Societal value** counts effects on people outside the deal. A public health portal might never make a profit but helps a whole community. This shows that value doesn't have to be financial.

TIPS & TRICKS

- **CuBS**: Customer (features), Business (money), Society (community and environment).
- Business value formula: **benefits – cost**.

EXAM ANGLE

Prediction Q1

An organization measures a project's "benefits less the cost of achieving those benefits". Which type of value is this?

A Business value

> Business value is determined with financial metrics like this one.

B Customer value

> Customers value the use of specific features, not the organization's finances.

C Societal value

> Societal value concerns contribution to communities or the environment.

D Technical value

> The slide doesn't define this type.

Prediction Q2

A project saves $5M per year and cost $2M to deliver. Using the slide's definition, what is the first-year business value?

A $7M

> This adds the cost, which should be subtracted.

B $2M

> This is the cost, not the value.

C $5M

> This counts the benefits but ignores the cost.

D $3M

> Benefits ($5M) less the cost of achieving them ($2M).

Prediction

Q3

Users praise a new app because it lets them pay bills with a single tap. What kind of value do they see?

A Business value

> Business value is measured by the organization using financial metrics.

B Customer value: the ability to use a specific feature

> Customers can define value as the ability to use specific features or functions.

C Societal value

> This concerns benefits to communities, not one user's convenience.

D Governance value

> The slide doesn't include this type.

Prediction

Q4

A free flood-warning system protects villages but makes no profit. What value does it provide?

A Business value

> It makes no profit, so it provides little financial benefit to the organization.

B Societal value

> Contribution to groups of people, communities or the environment is societal value.

C Customer value

> Those affected may not even be customers. The value is to the community as a whole.

D No value, since it makes no profit

> Value isn't only financial. That is the point of this slide.

Prediction

Q5

All stakeholders perceive a project's value in the same way.

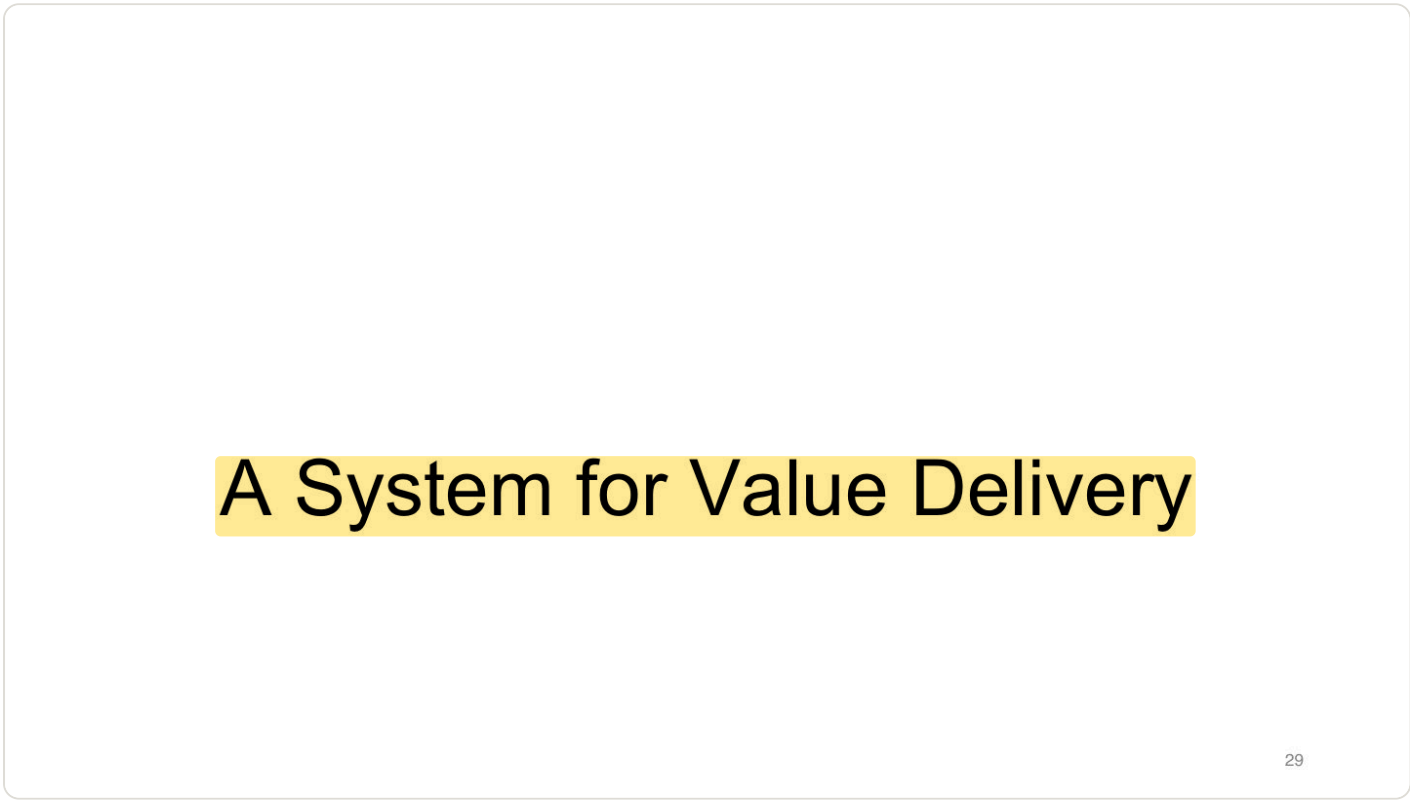
T True

> The slide says the opposite: customers, organizations and society each judge value differently.

F False

> The slide says different stakeholders perceive value in different ways.

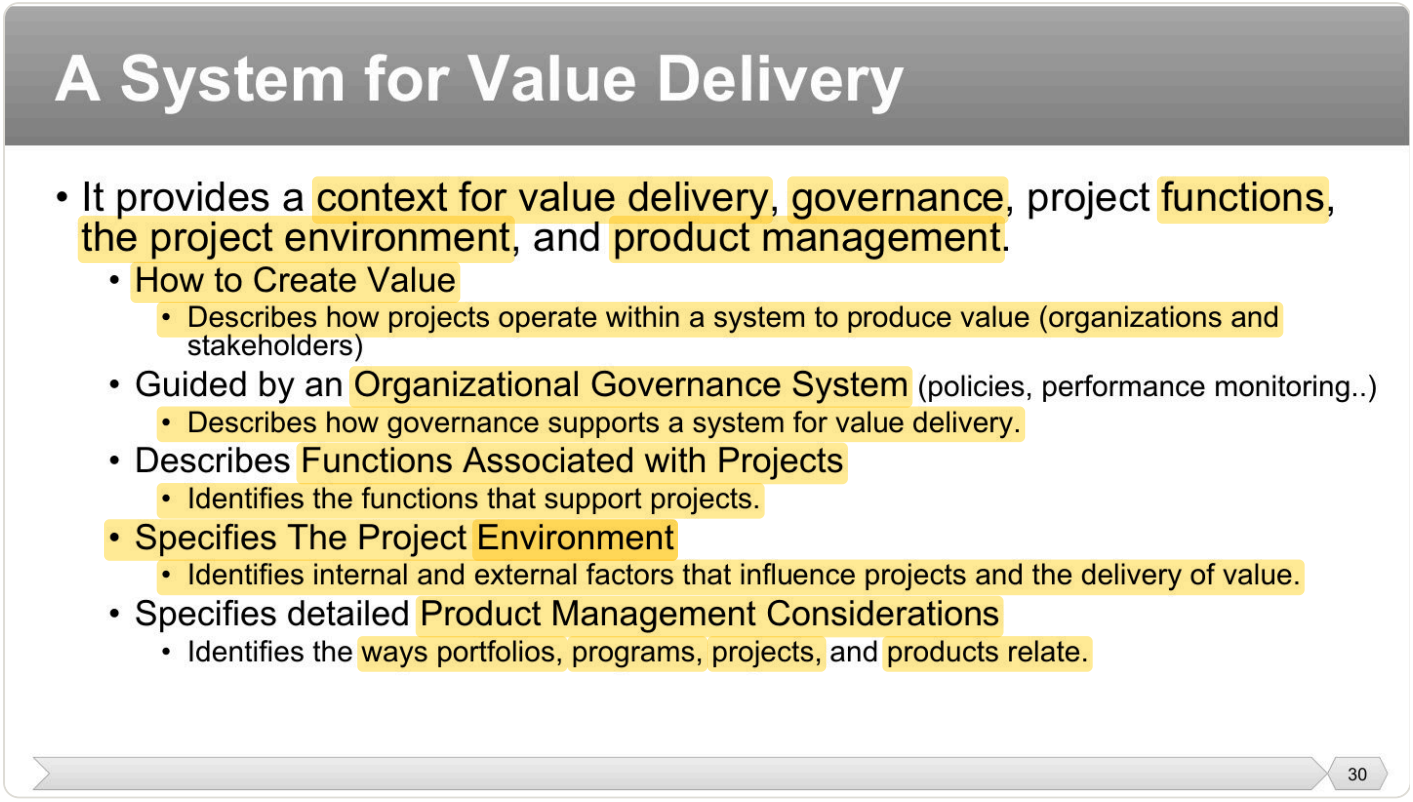
SLIDE 29 / 70 **A System for Value Delivery (section)**



NOTES

1. Section divider. So far the terms were separate. This section shows how they fit together into one system that produces value.

 A System for Value Delivery



NOTES

1. "Context" means this is the map of what surrounds a project. A project isn't an isolated bubble: it has rules, supporting roles and outside pressures, and it hands its result to someone. The five items below are the sections of this part of the deck.
2. **How to create value**: what a project is for. The rest of the system exists to serve this.
3. **Governance**: who decides, and by what rules. Policies and performance monitoring keep work aligned with the organization.
4. **Functions**: the jobs that need doing. Notice it says functions, not job titles, since one person might do several.
5. **Environment**: what you can't fully control. Internal factors include staff skills, and external ones include laws and the market.
6. **Product management**: what happens beyond the project. Projects end, but the product they create continues.

TIPS & TRICKS

- Slide 20's **FiG PiE** plus **V**alue: a fig pie of great value. Functions, Governance, Product, Environment, Value.

EXAM ANGLE

Prediction

Q1

Which element of the system identifies internal and external factors that influence projects?

A Functions associated with projects

> These identify who supports the project.

B **The project environment**

> The slide says it identifies the internal and external factors that influence projects and value delivery.

C Product management considerations

> These show how portfolios, programs, projects and products relate.

D The organizational governance system

> Governance provides policies and monitoring. It doesn't identify outside influences.

Prediction

Q2

Policies and performance monitoring that guide project work belong to which part of the system?

A Functions associated with projects

> Functions are the roles supporting a project.

B How to create value

> This explains how projects produce value, not the rules guiding them.

C **The organizational governance system**

> The slide names policies and performance monitoring as examples of governance.

D The project environment

> The environment covers influencing factors, whereas governance actively sets the rules.

Prediction

Q3

Which part of the system describes how portfolios, programs, projects and products relate?

A How to create value

> This part is about how projects produce value.

B Functions associated with projects

> This part is about the roles that support projects.

C The project environment

> This part is about the factors influencing projects.

D Product management considerations

> This is what the slide says that part identifies.

Prediction

Q4

Which part of the system identifies the functions that support projects?

A Product management considerations

> This concerns how the disciplines relate.

B Functions associated with projects

> As the name says, it identifies the functions that support projects.

C The project environment

> This concerns surrounding factors, not who does what.

D Organizational governance system

> Governance provides oversight. It doesn't list project functions.

Prediction Q5

Which part of the system describes how projects operate within a system to produce value for organizations and stakeholders?

A The project environment

> This covers influences on projects, not how they produce value.

B How to create value

> This is the slide's description of that first element.

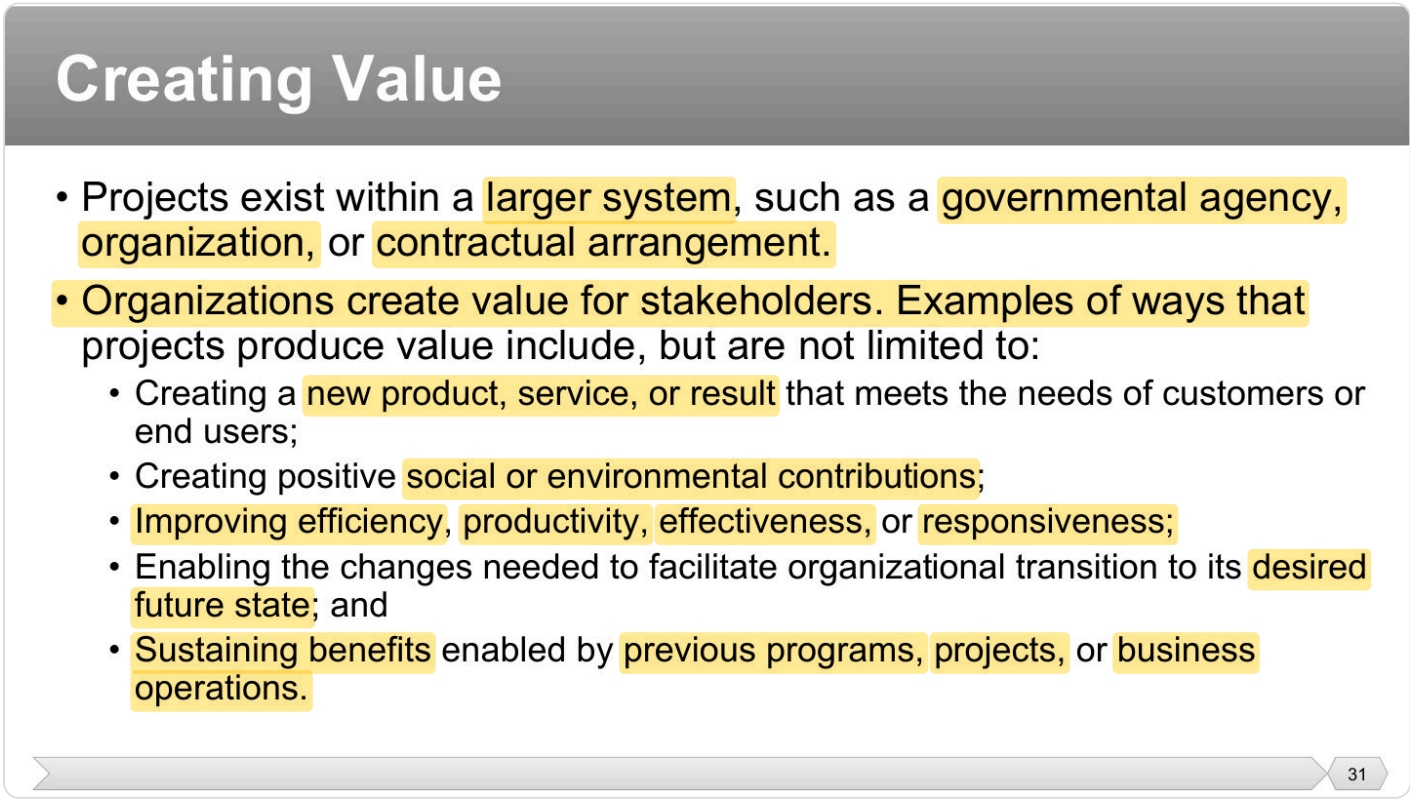
C Functions associated with projects

> These are the supporting roles.

D Product management considerations

> This covers how the disciplines relate.

SLIDE 31 / 70 **Creating Value**



NOTES

1 A project is never done for its own sake. "Larger system" means someone outside it, like a ministry, a company or a client under contract, wants the result. So when you're judging a project, always ask what the larger system needed from it.

2. These five answers to “why do this project?” are easy to confuse, so look at what actually changes in each case:

> **New product, service or result**
> Something exists that didn’t before, such as a new banking app.

> **Social or environmental contribution**
> People or the planet benefit, and profit isn’t the point: a public-health portal.

> **Efficiency or responsiveness**
> The same work gets done better or faster: tablets replacing nurses’ paper forms.

> **Enabling change**
> The organization becomes something new. A paper-based ministry moves to digital services.

> **Sustaining benefits**
> Nothing new is gained, but existing value is protected: upgrading an aging system customers rely on.

TIPS & TRICKS

- Five ways, **SCENeS**: **S**ocial, **C**hange, **E**fficiency, **N**ew, **S**ustain.
- “Efficiency” improves today’s way of working. “Enabling change” moves to a different way of working.

EXAM ANGLE

Prediction Q1

A hospital project replaces paper forms with tablets so nurses spend less time on administration. Which way of creating value does it show?

A Creating positive social or environmental contributions

> The main gain is staff efficiency, not a wider social benefit.

B Improving efficiency, productivity, effectiveness, or responsiveness

> The work stays the same, but it gets done faster and better.

C Creating a new product for customers

> The tablets serve internal staff, and no new customer product is created.

D Sustaining benefits from previous programs

> This protects existing value, whereas here the process gets better.

Prediction Q2

A company launches a new mobile banking app for its customers. Which way of creating value is this?

A Creating a new product, service, or result that meets customers' needs

> Something new now exists that meets customers' needs.

B Improving efficiency

> Efficiency would improve existing work. Here the main thing is the new product.

C Enabling organizational change

> The app doesn't by itself transform the organization.

D Sustaining benefits

> Sustaining keeps existing value going. This is a new offering.

Prediction

Q3

A charity builds a solar-powered water system for remote villages. Which way of creating value is this?

A Sustaining benefits

> This is a new contribution, not protection of an old benefit.

B Improving efficiency

> Improving efficiency concerns how existing work gets done.

C **Creating positive social or environmental contributions**

> The value is to people and the environment.

D Enabling organizational change

> The charity isn't changing how it operates.

Prediction

Q4

A ministry's project moves its whole operation from paper to digital so that it can work in a new way. Which way of creating value is this?

A Creating a product for end users

> The focus is the organization's transition.

B **Enabling the changes needed for transition to a desired future state**

> The organization is moving to a future state, not just improving a task.

C Improving efficiency

> It may become more efficient, but the main goal described is transforming how it operates.

D Sustaining benefits

> Sustaining keeps things as they are, whereas this project changes them.

Prediction

Q5

A company upgrades an aging billing system so that it can continue serving customers as it has for ten years. Which way of creating value is this?

A Creating a new product

> Customers receive nothing new.

B Social contribution

> This is a commercial upgrade with no wider social aim.

C Sustaining benefits enabled by previous programs, projects, or operations

> Nothing new is added. The upgrade protects existing value.

D Enabling change

> The goal is continuity rather than a new future state.

Prediction

Q6

Projects exist as stand-alone efforts, outside any larger system.

T True

> Don’t confuse this with slide 25: a project can stand alone from a program or portfolio, but it still sits inside a larger system.

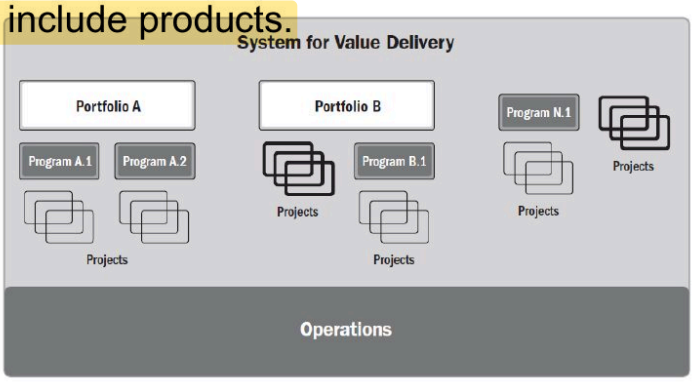
F False

> The slide says projects exist within a larger system, such as a governmental agency, organization or contractual arrangement.

 Value Delivery Components

Value Delivery Components

- There are various components, such as portfolios, programs, projects, products, and operations, that can be used individually and collectively to create value.
- Working together, these components compose a system for delivering value that is aligned with the organization's strategy.
- Any of the projects or programs could include products.
- Operations can directly support and influence portfolios, programs, and projects, as well as other business functions, such as payroll, supply chain management, finance and budgeting, HR, customer service, etc.
- Portfolios, programs, and projects influence each other as well as operations.



32

NOTES

1. Value can come from one project on its own, or from many pieces working together. A portfolio of average projects that support each other can be worth more than one excellent project in isolation.
2. "Aligned with strategy" means the pieces aren't a random set of work, they all point toward what the organization has decided to become. If a project doesn't help with the strategy, it may be good work that shouldn't be done.
3. **Operations** are the routine, ongoing functions: payroll, supply chain, finance, HR, customer service. They support projects (HR hires for them, finance pays for them) and influence them (customer service reports what users actually complain about). Remember that when a project ends, operations often inherit what it built.
4. The influence goes in all directions. A portfolio's budget cut can cancel a project. A project's new system changes how operations work. A failing project can damage a program's benefits. That is why the slide's picture shows connected boxes rather than a chain.

TIPS & TRICKS

- Think of a **family business**: projects are the new shop being opened, operations keep the existing shops running, and each affects the other.

EXAM ANGLE

Prediction Q1

Which of these is an example of operations, as the slide uses the term?

A Payroll and HR

The slide lists payroll, supply chain, finance and budgeting, HR and customer service.

B The strategic grouping of all work

That is a portfolio.

C Building a new company website

That is a temporary effort with a unique result, so it is a project.

D A group of related upgrade projects

That is a program.

Prediction Q2

Portfolios, programs, and projects influence each other as well as operations.

T True

The slide says so directly. Influence runs in every direction.

F False

The statement is correct. It is taken directly from the slide.

Prediction Q3

Value can only be created by the components working together, never individually.

T True

The slide says “individually and collectively”. A single project can create value on its own.

F False

The slide says components can be used individually and collectively.

Prediction

Q4

Why does it matter that the components are “aligned with the organization’s strategy”?

A So that all components report to one manager

> Alignment concerns direction, not reporting lines.

B So that every project uses the same method

> Tailoring means methods can differ. Alignment concerns purpose.

C So that operations can be replaced by projects

> Operations remain necessary. They aren’t replaced.

D So that the system’s work supports where the organization has decided to go

> Alignment is what turns separate pieces of work into one system with a purpose.

Prediction

Q5

Any of the projects or programs in the system could include products.

T True

> The slide says this, since projects and programs often exist to create products.

F False

> The slide states this directly: any of the projects or programs could include products.

Prediction Q6

Customer service tells a project team that users keep failing at one step, and the team changes the design. What does this show?

A Operations can directly support and influence projects

> Customer service is an operational function, and here it influences a project.

B The project is out of scope

> Nothing here suggests the change exceeds what the project agreed to do.

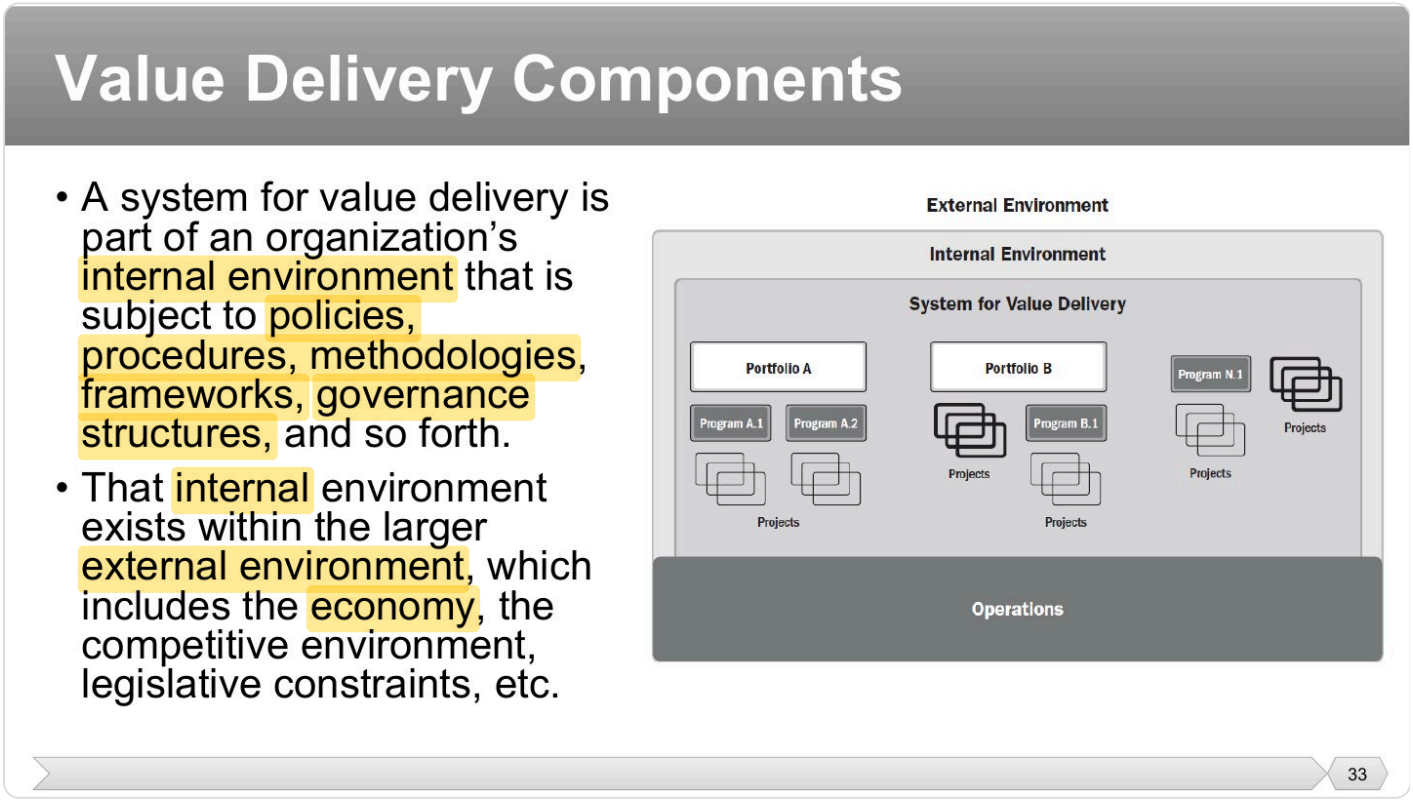
C The portfolio controls the design

> The information came from operations, not the portfolio.

D Customer service has become part of the project team

> It supplied information but did not join the team.

SLIDE 33 / 70 **Value Delivery Components**



NOTES

1 Picture the system sitting inside the organization's rules. **Internal** means things the organization itself sets and can change: its policies, procedures, methodologies and governance structures. A PM can't ignore them, but the organization could change them if it wished.

2 That whole organization sits inside a wider world it doesn't control. The economy can shrink, a competitor can launch first, a new law can force a redesign. The nesting matters because anything in the outer box can affect all the inner boxes, and you have to respond because you can't change it.

TIPS & TRICKS

- **Russian dolls**: system inside internal environment inside external environment.
- Test: **can the organization change it by its own decision?** Yes means internal. No means external.

EXAM ANGLE

Prediction Q1

Which of these belongs to the external environment?

A Internal procedures for approving spending

> These are the organization’s own procedures.

B A competitor launching a similar product

> Competitors are outside the organization’s control.

C The company’s project methodology

> The company sets this itself, so it is internal.

D The organization’s governance structure

> This is listed as part of the internal environment.

Prediction Q2

Which of these belongs to the internal environment?

A The state of the economy

> The economy is external.

B Legislative constraints

> Laws come from outside the organization.

C The organization’s policies and procedures

> The slide says the internal environment is subject to policies, procedures, methodologies, frameworks and governance structures.

D The competitive environment

> Competitors are external.

Prediction Q3

Which statement correctly describes how these fit together?

A **The value delivery system sits within the internal environment, which sits within the external environment**

> This is the nesting the slide's diagram shows.

B The external environment sits within the internal environment

> This is backwards, since the world outside contains the organization.

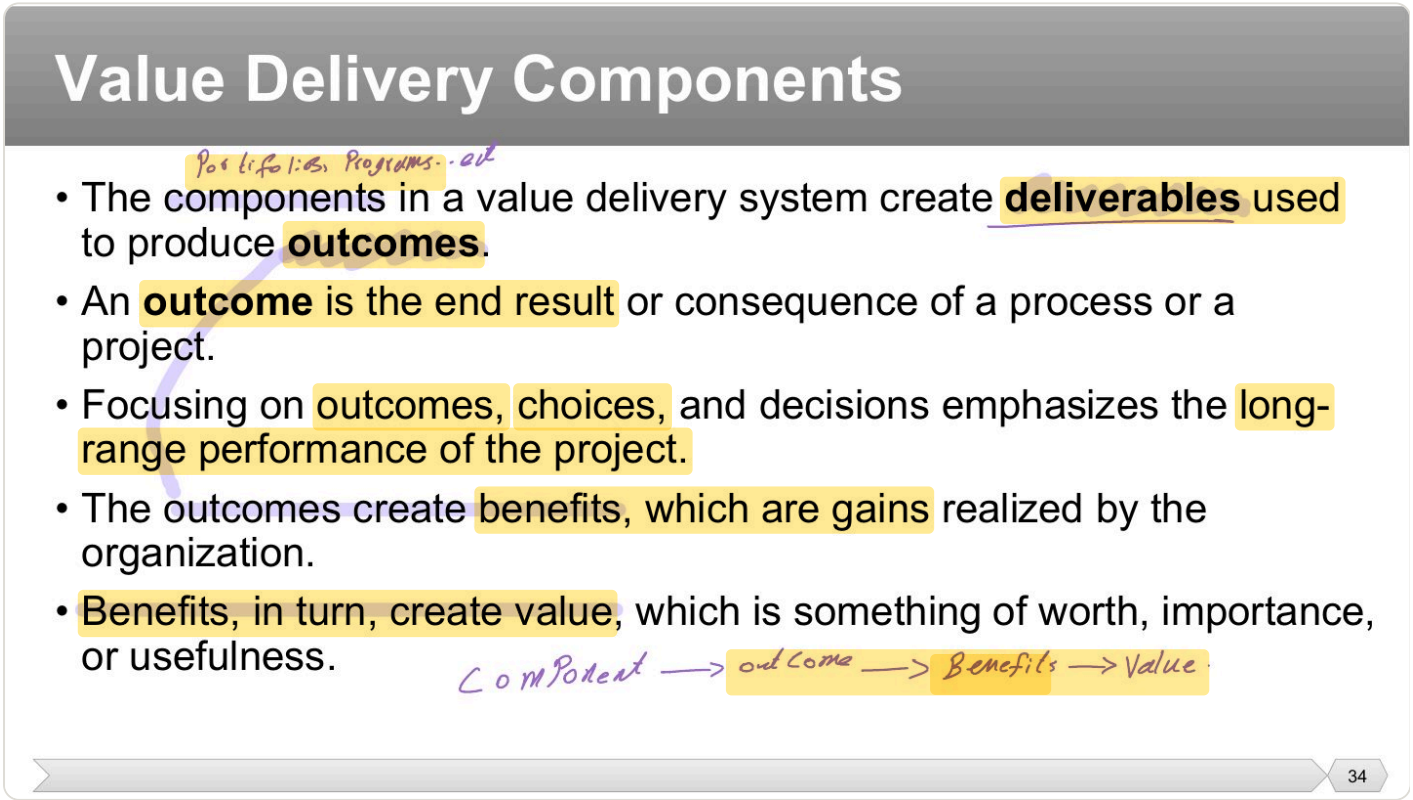
C The system and the environments are separate and don't affect each other

> They are nested, and outer ones influence inner ones.

D The internal environment sits within the value delivery system

> The system is inside the internal environment, not the reverse.

SLIDE 34 / 70 **Value Delivery Components**



NOTES

1. A **deliverable** is what gets handed over: code, a report, a trained team. The point is that it is "used to produce outcomes". A deliverable nobody uses has done nothing yet.
2. **Outcomes** come after delivery. Deciding by outcome forces a longer view: "Will this help in two years?" instead of "Can we tick this off by Friday?" A team focused only on deliverables might skip documentation to hit a date, even though the outcome suffers later.

3. A **benefit** is the gain realized by the organization, once the outcome has happened. Example: the outcome is that customers now serve themselves online, and the benefit is lower call-center costs.

4. **Value** is the final judgment of worth, once benefits are weighed. Follow the example through: components build a portal (deliverable) → customers serve themselves (outcome) → costs drop (benefit) → the company can invest in other things and customers are happier (value).

TIPS & TRICKS

- **DOuBle V**, in this order: Deliverables → Outcomes → Benefits → Value.
- Follow one example from start to finish: **app → people use it → costs drop → worth it.**

EXAM ANGLE

Prediction

Q1

Which sequence matches the value delivery chain?

A **Deliverables → outcomes → benefits → value**

> Deliverables produce outcomes, outcomes create benefits, and benefits create value.

B Outcomes → deliverables → value → benefits

> Deliverables must come before outcomes, and benefits before value.

C Benefits → outcomes → deliverables → value

> Benefits come after outcomes, which come after deliverables.

D Value → benefits → outcomes → deliverables

> This is the reverse. Value is the end of the chain.

Prediction

Q2

According to the slide, what are benefits?

A **Gains realized by the organization**

> The slide says outcomes create benefits, “which are gains realized by the organization”.

B Something of worth, importance or usefulness

> That defines value.

C Artifacts handed over to the customer

> That describes deliverables.

D The end result or consequence of a project

> That defines an outcome.

Prediction

Q3

Why does the slide recommend focusing on outcomes, choices, and decisions?

A **It emphasizes the long-range performance of the project**

The slide's wording is "long-range performance".

B It means less stakeholder involvement

Nothing suggests this, and outcomes usually need more involvement.

C It shortens the schedule

It may take longer in the short term, and nothing here is about speed.

D It removes the need for deliverables

Deliverables are still needed, since they produce the outcomes.

Prediction

Q4

An online portal is launched. Customers begin to use it, and call-center costs fall by 25%. Which is the benefit?

A **The 25% fall in call-center costs**

The organization gains by paying less. That is a benefit.

B The project team that built it

A team produces the deliverable, so it isn't a benefit.

C The online portal

This is the deliverable.

D Customers using the portal

This is the outcome that creates the benefit.

Prediction Q5

Value is defined on the slide as something of worth, importance, or usefulness.

T **True**

> This is the slide's definition, matching slide 28.

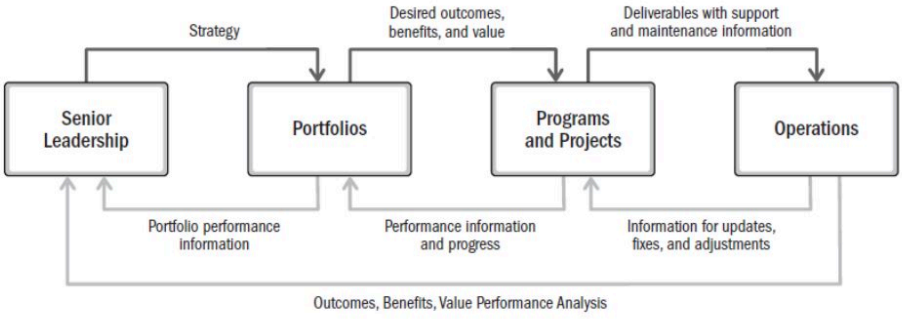
F False

> The statement is correct: those are the slide's exact words for value.

SLIDE 35 / 70 **Information Flow**

Information Flow

- A value delivery system works most effectively when **information** and **feedback** are shared consistently among all components, keeping the system aligned with strategy and in harmony with the environment.
- Senior leadership shares strategic information with portfolios.
- Portfolios share the desired outcomes, benefits, and value with programs and project
- Deliverables from programs and projects are passed on to operations along with information on support and maintenance for the deliverables.



35

NOTES

1. This is the system's circulation. If leadership changes strategy but doesn't tell the portfolio, projects keep working toward an old goal. The word **consistently** matters: occasional updates aren't enough, since strategy and the environment keep moving.
2. Top of the chain: senior leaders decide where the organization is going, and they pass **strategic information** to whoever manages the portfolio. They say why, not how.
3. Portfolios turn strategy into something a project can act on, the **desired outcomes, benefits and value**. A project told only "be more customer-focused" is stuck, but one told "cut response time by half" can act.
4. Deliverables don't just get thrown over the wall. Operations also need **information on support and maintenance**, like documentation and training, since they will be running this long after the project has closed.

TIPS & TRICKS

- Downward flow is **“here’s what we want”**: Strategy → Outcomes → Deliverables. Next slide’s upward flow is **“here’s how it’s going”**.

EXAM ANGLE

Prediction Q1

What do portfolios share with programs and projects?

A The desired outcomes, benefits, and value

This is on the slide. Portfolios translate strategy into what the work must achieve.

B Performance information

That flows up from programs and projects to portfolios.

C Strategic information only

That is what senior leadership shares with portfolios.

D Deliverables and maintenance information

That passes from programs and projects to operations.

Prediction Q2

What does senior leadership share with portfolios?

A Strategic information

The flow starts here, at the top.

B Support and maintenance information

This goes from programs and projects to operations.

C Bug reports and fixes

These come from operations, going up.

D Deliverables

Deliverables flow to operations.

Prediction

Q3

A project hands its system to the IT operations team. What should go with it?

A Nothing, because operations must work it out for themselves

> Without the information, operations can’t support what they receive.

B The portfolio’s strategic objectives

> These flow from leadership to portfolios, not with the deliverables.

C Performance evaluations of the portfolio

> These go up to senior leadership.

D Information on support and maintenance for the deliverables

> The slide says deliverables pass to operations along with this information.

Prediction

Q4

When does a value delivery system work most effectively?

A When components work independently to avoid interference

> Independence breaks the alignment the system depends on.

B When only senior leadership receives information

> Information has to flow among all components.

C When information and feedback are shared consistently among all components

> This keeps the system aligned with strategy and in harmony with the environment.

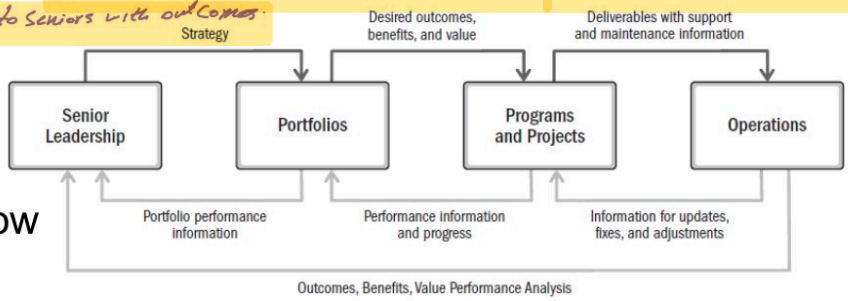
D When information is shared only at the end of each project

> Feedback has to be consistent, not only at the end.

 Information Flow

Information Flow

- Information from operations to programs and projects suggests adjustments, fixes, and updates to deliverables.
- Programs and projects provide performance information and progress on achieving the desired outcomes, benefits, and value to portfolios.
- Portfolios provide evaluations on portfolio performance with senior leadership.
- Additionally, operations provide information on how well the organization's strategy is advancing.



36

NOTES

1. Operations see how the delivered thing behaves in real use, which nobody on the project team could see. So they send back **suggested adjustments, fixes and updates**. A support team noticing the same complaint every day has information the developers can't get any other way.
2. Programs and projects report **performance information** upward: are we on track, and are we achieving the outcomes we were asked for? This lets the portfolio manager decide whether to continue, adjust or stop a project.
3. Portfolios then report their overall **performance evaluations** to senior leadership, summarizing how the whole mix of work is doing rather than the details of each project.
4. Operations also report how well **the strategy is advancing**, because operations see the real numbers: sales, complaints, costs. This is how leaders learn whether their strategy is working, so the loop closes.

TIPS & TRICKS

- Upward: **Ops → fixes → Projects → progress → Portfolio → evaluations → Leaders.** Each level reports up in the terms the next level needs.
- Draw the loop once on paper: down on one side (slide 35), up on the other.

EXAM ANGLE

Prediction Q1

Information flowing from operations back to programs and projects mainly suggests:

A Adjustments, fixes, and updates to deliverables

Operations use what was delivered, so they spot what needs fixing.

B Portfolio performance evaluations

These go from portfolios to senior leadership.

C New strategic objectives

Strategic direction comes from senior leadership.

D The project budget

Operations don't set the project's budget.

Prediction Q2

What do programs and projects provide to portfolios?

A Suggested fixes to deliverables

Operations provide these to programs and projects.

B Strategic information

This flows downward from senior leadership.

C Performance information and progress on the desired outcomes, benefits, and value

This is how portfolios know whether the work is achieving what they asked for.

D Evaluations of portfolio performance

Portfolios provide these to senior leadership.

Prediction

Q3

What do portfolios provide to senior leadership?

A Support and maintenance information

This goes to operations with deliverables.

B Deliverables

These go to operations.

C Desired outcomes

This flows downward, from portfolios to programs and projects.

D Evaluations on portfolio performance

This is the top step of the upward flow.

Prediction

Q4

What additional information do operations provide, according to the slide?

A How well the organization's strategy is advancing

Operations see the real results, so they show whether the strategy is working.

B Which project managers to hire

Hiring decisions aren't part of this information flow.

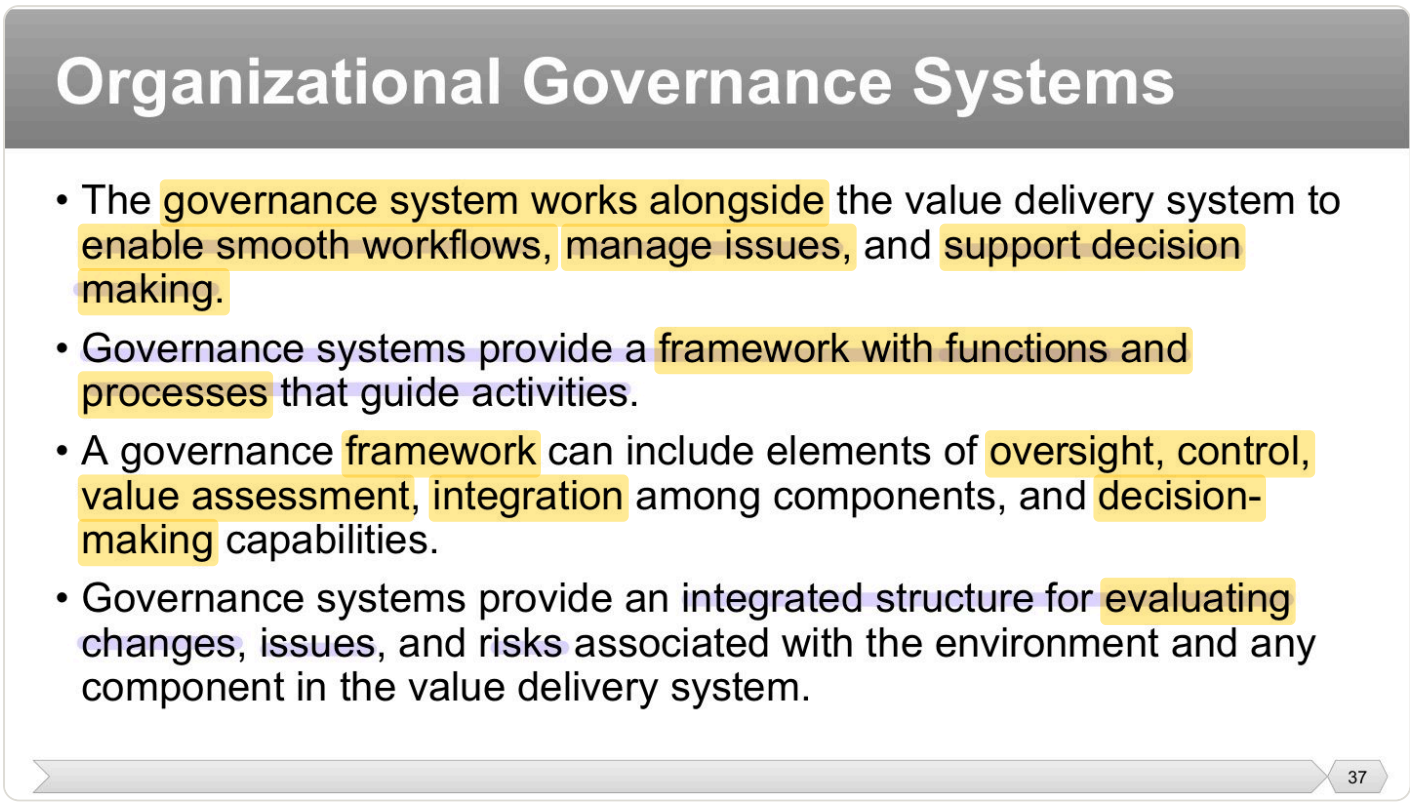
C The list of principles to follow

Principles come from the standard.

D How to write the project charter

This isn't something operations supply.

 Organizational Governance Systems



NOTES

1. Governance is what stops every decision from turning into a fight. “Works alongside” matters: it doesn’t replace delivery, it runs beside it, so that when a problem arises, people already know who decides and how. Without it, work stops while everyone argues about who is in charge.

2. A **framework** with functions and processes means agreed roles and steps, such as a monthly review board, or a rule that spending above a limit needs a director’s signature.

3. Each of these does a different job. **Oversight**: someone is watching. **Control**: someone can stop or correct things. **Value assessment**: is this still worth doing? **Integration**: do the components fit together? **Decision-making**: who gets to choose?

4. “Integrated structure” means changes, issues and risks get handled by the same system rather than case by case. A new law, a project overrun and a vendor failure all go through one known route, so they can be weighed against each other.

TIPS & TRICKS

- Governance is **traffic rules** for the organization. They don’t drive your car, but everyone knows who has right of way.
- Elements: **COVID** — Control, Oversight, Value assessment, Integration, Decision-making.

EXAM ANGLE

Prediction Q1

What does the governance system work alongside?

A Only the project management team

It covers more than one team: the whole value delivery system.

B The external environment

Governance helps evaluate external factors, but it works alongside the delivery system.

C The value delivery system

It runs beside the value delivery system, enabling smooth workflows, managing issues and supporting decisions.

D The customer's internal processes

Governance belongs to the organization, not the customer.

Prediction Q2

Which of these is NOT listed as an element of a governance framework?

A Value assessment

Listed on the slide.

B Decision-making capabilities

Listed on the slide.

C Oversight

Listed on the slide.

D Writing the source code

Coding is project work. Governance guides work, but doesn't do it.

Prediction

Q3

A new regulation appears, and a project reports a major risk. Both are reviewed through the same board. What does this show?

A Decentralized coordination

> This concerns team self-organization, not an organizational review board.

B The board is doing the project's work

> The board evaluates and decides. The project team still does the work.

C **Governance gives an integrated structure for evaluating changes, issues and risks**

> One structure handles them, whatever their source.

D The project has lost its scope

> Having a review doesn't mean scope has been lost.

Prediction

Q4

Governance systems provide a framework with functions and processes that guide activities.

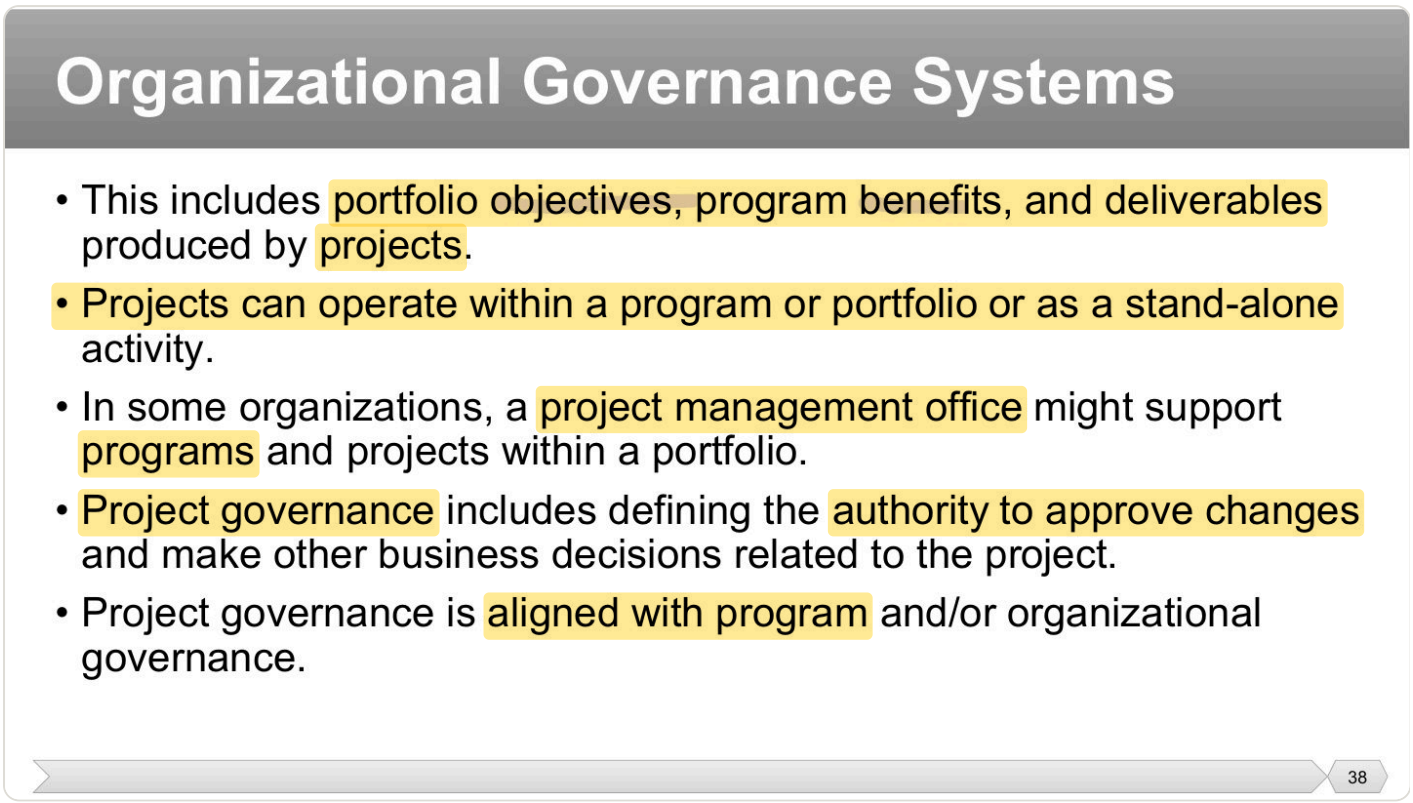
T **True**

> This is the slide's wording.

F False

> The statement is correct: it is the second point on the slide.

 Organizational Governance Systems



NOTES

1. Governance works at every level, and each level looks after something different: **portfolios** check objectives, **programs** check benefits, **projects** check deliverables. The bigger the unit, the more strategic the question.

2. A PMO often supports governance here, but only "in some organizations", since not every company has one. A project can exist without a program or portfolio, which is why "can operate as a stand-alone activity" is on the slide again.

3. Say the client wants a new feature. Who can say yes? Without an answer, the PM may be pressured into agreeing, and the project slowly grows out of control. **Project governance** answers the question before it's asked: changes under a set amount go to the PM, larger ones to the sponsor.

4. "Aligned" means a project can't make its own rules that conflict with the organization's. If the company requires security sign-off for all systems, a project can't decide it's unnecessary just because that would be faster.

TIPS & TRICKS

- Levels: **Portfolio → objectives, Program → benefits, Project → deliverables.** Remember **OBeyeD** going down.
- Project governance's key question is **"who can say yes?"**

EXAM ANGLE

Prediction Q1

Defining who has the authority to approve changes on a project is part of:

A Product management

> This concerns a product's whole life cycle.

B **Project governance**

> The slide says it includes defining authority to approve changes and make related decisions.

C Benefits realization

> This measures results and doesn't assign decision rights.

D The project environment

> The environment covers influencing factors, not assigned authority.

Prediction Q2

At which level does governance look at "benefits"?

A Portfolio

> Portfolio governance looks at objectives.

B **Program**

> The slide pairs portfolio objectives, program benefits and project deliverables.

C Operations

> The slide doesn't pair operations with benefits.

D Project

> Project governance looks at deliverables.

Prediction

Q3

A project management office must always exist to support projects in a portfolio.

T True

> The wording “in some organizations” and “might” tells you a PMO is not required.

F False

> The slide says “in some organizations” a PMO might support them, so it is optional.

Prediction

Q4

Project governance is aligned with program and/or organizational governance.

T True

> A project’s rules must fit the rules above it.

F False

> The statement is correct, and it’s the last point on the slide. A project can’t set rules that contradict the organization’s.

Prediction

Q5

A project can operate:

A Within a program or portfolio, or as a stand-alone activity

> The slide lists all three possibilities.

B Only within a portfolio

> Portfolios are one option, not a requirement.

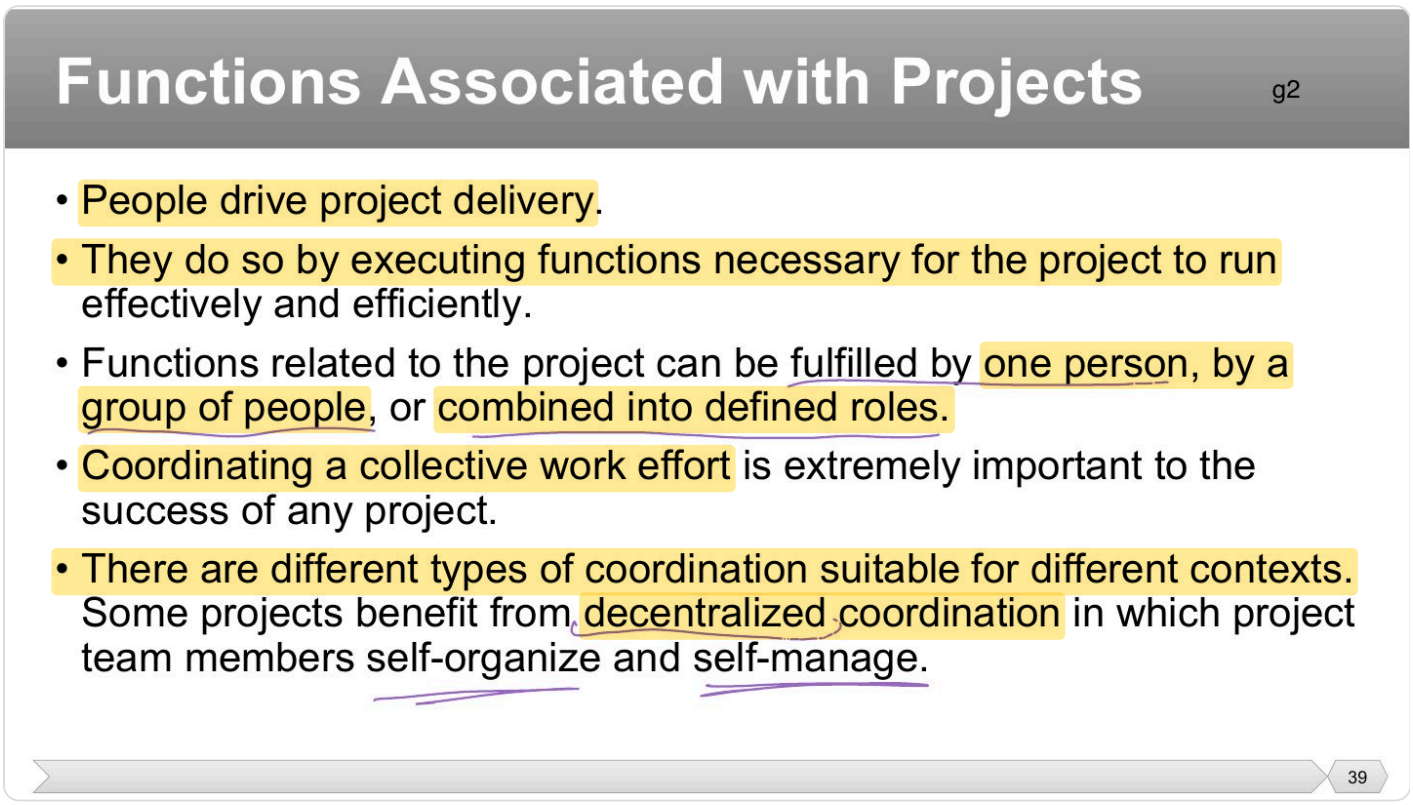
C Only within a program

> Programs are one option, not a requirement.

D Only under a PMO

> A PMO exists only in some organizations.

 Functions Associated with Projects



NOTES

1. Methods and tools don't deliver anything by themselves. People do, and that is why this section is about functions. If a project is failing, look first at whether someone is actually doing each necessary job.

2. A **function** is a job to be done, not a job title. In a two-person startup, one person may handle oversight, testing and customer contact. In a large company, a whole department might handle just one of those. What matters is that the function gets done, not how the org chart describes it.

3. The work of many people only adds up if it is coordinated: otherwise two developers build the same feature while nobody builds another. This is why the slide calls coordination "extremely important", and why it says different contexts need different types.

4. In **decentralized coordination**, the team decides how to organize itself. Nobody assigns tasks from above, so authority and accountability are shared. It works when people are skilled and motivated, and when requirements change often, as on a Scrum team. It works poorly when strict compliance or central accountability is required.

TIPS & TRICKS

- **De-centralized = de-centered**: no single person at the center. Decisions are spread across the team.
- Function ≠ job title. **One person can have many functions, and one function can need many people.**

EXAM ANGLE

Past exam · Midterm 251 · V1 · MCQ 1 Q1

In decentralized project management, decision-making authority is primarily:

A Distributed among team members to encourage shared accountability.

Decentralized management spreads decisions across the team; centralized puts them with one person such as the PM. (Also Midterm 251 V2 MCQ 2.)

B Concentrated in the hands of a single project manager.

This describes centralized coordination, covered on the next slide.

C Transferred to external auditors for oversight.

Auditors check compliance. They don't make the project's decisions.

D Reserved exclusively for senior executives in the organization.

This would be even more centralized, the opposite of what decentralized means.

Prediction Q2

Each project function must be performed by exactly one dedicated person.

T True

The slide explicitly lists all three options, so no one-person-per-function rule exists.

F False

Functions can be fulfilled by one person, a group, or combined into defined roles.

Prediction

Q3

What actually drives project delivery, according to the slide?

A The governance board

Governance guides and decides. It doesn't deliver.

B People, by executing the functions the project needs

The slide's first point is "People drive project delivery".

C Tools and software

Tools help, but it is people who use them to deliver.

D The project plan

A plan guides, but only people carry it out.

Prediction

Q4

What does the slide say about coordinating a collective work effort?

A It is extremely important, and different types suit different contexts

Both points come directly from the slide.

B It is optional if the team is skilled

Even skilled people need to coordinate their work.

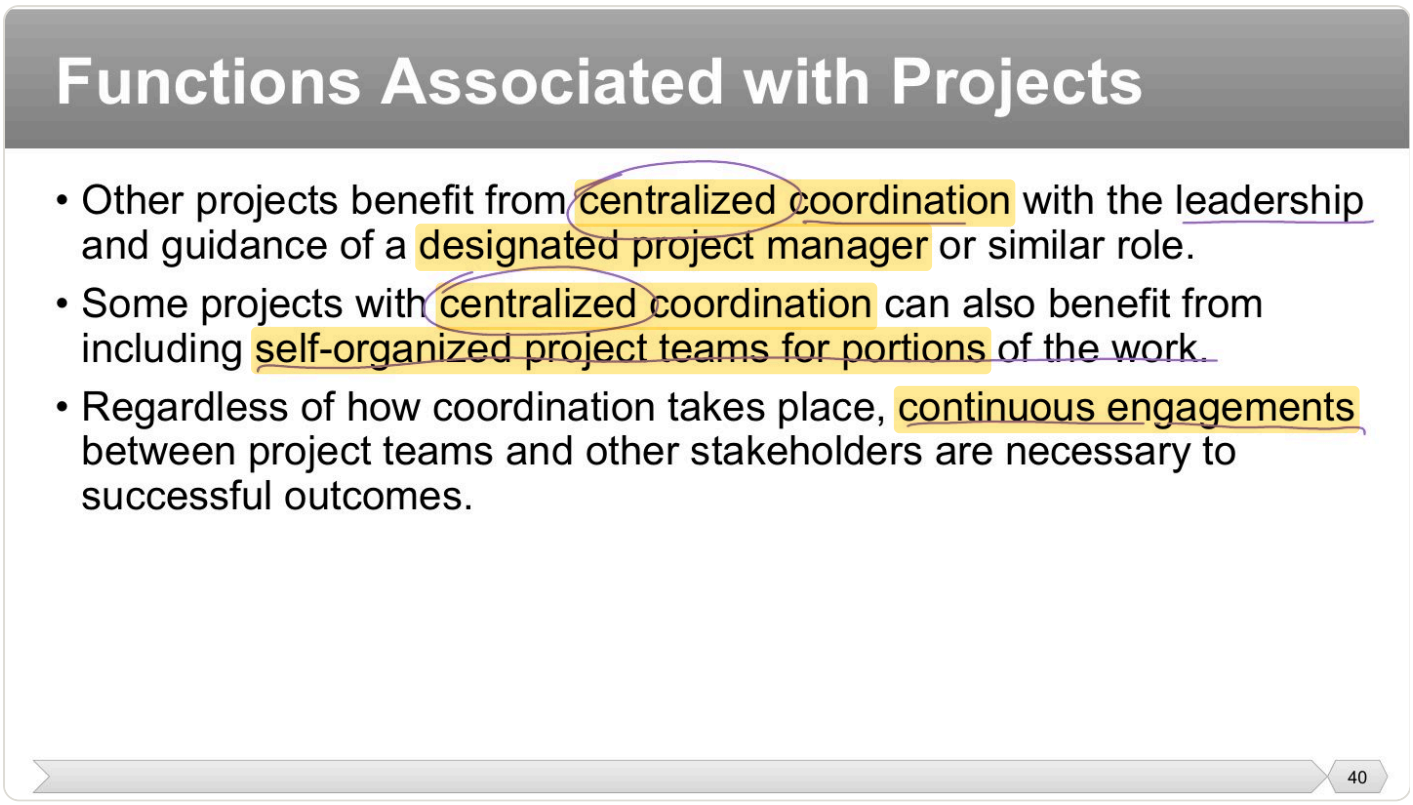
C Only large projects need it

The slide says "any project".

D Only one type works for all projects

The slide says there are different types for different contexts.

 Functions Associated with Projects



NOTES

1. In **centralized coordination**, one named person leads and guides. It works well when someone must clearly answer for results, as with strict deadlines, regulation or inexperienced teams. It can go wrong when one person becomes a bottleneck for every decision.

2. This isn't an either/or choice. A PM can run a government system centrally while the UI team plans its own two-week sprints. Each part of the work uses what suits it. Exam options saying a project must be "entirely" one or the other are false.

3. Whatever the structure, stakeholders stay involved **continuously**. A self-organized team that disappears for six months can build the wrong thing, just as a centralized one can. It's the one thing that doesn't change with the coordination style.

TIPS & TRICKS

- **Centralized = conductor with an orchestra. Decentralized = jazz band.** Both make music, and both listen to the audience.

EXAM ANGLE

Prediction Q1

A government system has a strict compliance deadline and a designated PM, but the UI team works in two-week sprints and plans its own tasks. Which coordination style is this?

A Centralized coordination that includes a self-organized team for part of the work

A designated PM leads, and one part self-organizes. The slide says this combination can be beneficial.

B It isn't possible to combine these

The slide explicitly says some centrally coordinated projects include self-organized teams.

C Purely decentralized coordination

A designated PM leads this project, which rules out purely decentralized.

D Purely centralized coordination

The UI team plans its own tasks, so this isn't purely centralized.

Prediction Q2

A designated project manager assigns tasks, guides the team and answers for results. What type of coordination is this?

A Centralized

Leadership and guidance come from a designated PM or similar role.

B Hybrid delivery

Hybrid describes a delivery approach, not a coordination style.

C Decentralized

Decentralized teams self-organize, with no single person assigning tasks.

D Governance

Governance sets authority and rules. The daily coordination described is centralized.

Prediction Q3

Continuous engagement between the project team and other stakeholders is only necessary under decentralized coordination.

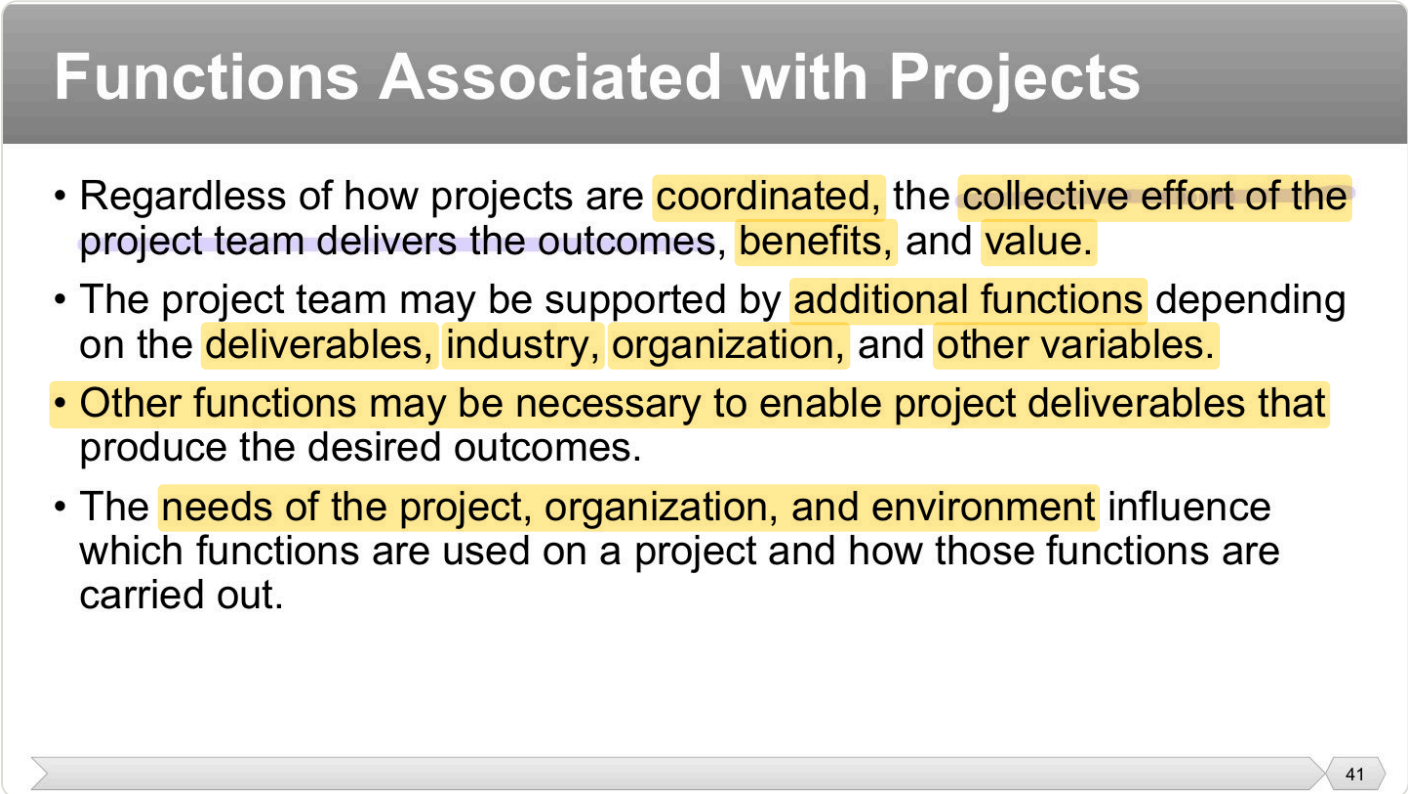
T True

> The word “regardless” on the slide means this applies to all coordination styles.

F False

> The slide says “regardless of how coordination takes place”, continuous engagement is necessary.

SLIDE 41 / 70 **Functions Associated with Projects**



NOTES

1. Notice the credit goes to the **collective effort**: a good PM doesn’t deliver alone, and neither does a star developer. Value comes from all the team’s work adding up.
2. “Additional functions” appear because the work demands them. A banking project may need legal review, a medical one needs clinical safety checks, and a game may need neither.
3. There’s no fixed list of functions. Think about why: an internal tool in a five-person startup and a national payment system have completely different needs. So you should ask what this project needs, not what a template says. This is tailoring applied to who does what.

TIPS & TRICKS

- Ask: **“What does this project need that a default team doesn’t have?”** That’s your list of additional functions.

EXAM ANGLE

Prediction Q1

What delivers the outcomes, benefits, and value, regardless of how a project is coordinated?

A The collective effort of the project team

> This is the slide's first point.

B The sponsor

> The sponsor provides resources and direction rather than delivering.

C The project manager alone

> A PM contributes, but the slide credits the collective effort.

D The governance board

> Governance guides and decides, but doesn't deliver.

Prediction Q2

A medical software project adds a clinical safety reviewer, while a game project doesn't need one. What does this show?

A Functions are fixed for every project

> The slide says the opposite.

B The needs of the project, organization and environment influence which functions are used

> The slide says functions depend on deliverables, industry, organization and other variables.

C The game project has no governance

> Having no clinical reviewer says nothing about its governance.

D One of the projects is doing it wrong

> Both can be right, since each suits its own context.

Prediction Q3

The project team may be supported by additional functions depending on the deliverables, industry, and organization.

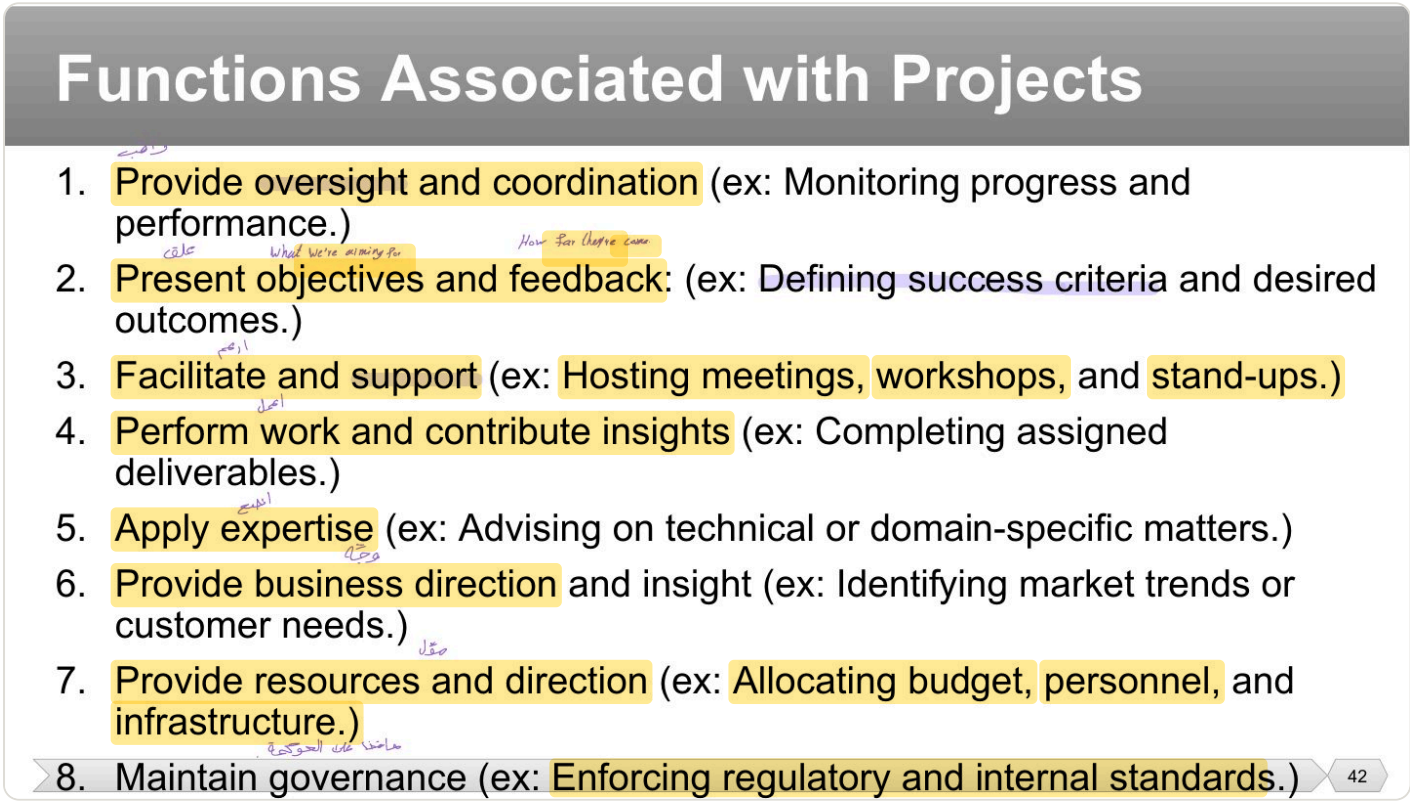
T True

> This is what the slide says: the list of functions isn't fixed.

F False

> The statement is correct: the slide lists deliverables, industry, organization and other variables as what decides this.

SLIDE 42 / 70 **IHow**



NOTES

1. **Oversight and coordination** is about seeing the whole: are we on track, and does everyone's work fit together? A PM usually fills this function, or the team collectively in decentralized settings.
2. **Objectives and feedback** tells you where you're heading and how close you are. The handwriting on the slide says it well: "what we're aiming for" and "how far they've come". Customers and product owners usually do this.
3. **Facilitate and support** makes the work easier for others, by hosting meetings, clearing obstacles and encouraging people. Think of a Scrum master. They add no features, but the team would be slower without them.

4. **Apply expertise** means giving specialist advice when needed. A security expert who reviews the design for an afternoon is doing this without being a full-time member. Compare it with **perform work and contribute insights**, the full-time doing of the job.
5. **Business direction and insight** tells the team what the market and customers want. A product owner saying “competitors now offer this” is doing this function.
6. **Resources and direction** means allocating budget, people and infrastructure, usually a sponsor. It answers “what do we have to work with?”
7. **Maintain governance** is enforcing regulatory and internal standards, so the project doesn’t break rules. A PMO or governance board often handles this.

TIPS & TRICKS

- Ask **“what is this person actually doing right now?”** rather than “what is their title?” Questions are written so that the title misleads.
- Paired look-alikes: **Business direction** = what the market wants; **Resources and direction** = money and people. **Apply expertise** = advice; **Perform work** = doing it.

EXAM ANGLE

Prediction Q1

A sponsor approves the budget and assigns two extra engineers to the project. Which project function is this?

A Apply expertise

> No specialist advice is being given.

B Perform work and contribute insights

> The sponsor isn't producing deliverables.

C Provide resources and direction

> Allocating budget, personnel and infrastructure is this function's example on the slide.

D Present objectives and feedback

> This defines success and progress, not resources.

Prediction Q2

A product owner tells the team that customers in a new market now expect Arabic support. Which project function is this?

A Maintain governance

> Governance enforces standards, not market insight.

B Provide business direction and insight

> Identifying market trends and customer needs is this function's example.

C Provide oversight and coordination

> This monitors progress. It doesn't identify customer needs.

D Facilitate and support

> Facilitating helps the team work. It doesn't bring market information.

Prediction

Q3

A PM reviews the dashboard every morning and checks whether the work is on track. Which function is this?

A Maintain governance

> Governance enforces standards rather than watching day-to-day progress.

B Perform work and contribute insights

> She isn't completing a deliverable.

C Provide oversight and coordination

> Monitoring progress and performance is this function's example.

D Present objectives and feedback

> This sets where the team should go. She's checking progress.

Prediction

Q4

A client defines what "success" will mean and reviews each demo to say how close the team is. Which function is this?

A Facilitate and support

> The client isn't helping the team's process.

B Apply expertise

> The client isn't offering technical advice.

C Present objectives and feedback

> Where we're going and how far we've come are exactly what this function provides.

D Provide business direction and insight

> This concerns market trends. Here the client is defining success and reviewing progress.

Prediction

Q5

A Scrum master runs stand-ups and workshops and removes obstacles. Which function is this?

A Provide oversight and coordination

> Oversight watches progress. Here the focus is enabling the team.

B Provide resources and direction

> They don't allocate budget or people.

C Perform work and contribute insights

> They aren't producing deliverables.

D Facilitate and support

> Hosting meetings, workshops and stand-ups is this function's example.

Prediction

Q6

A developer finishes the features assigned to her in this sprint. Which function is this?

A Perform work and contribute insights

> Completing assigned deliverables is this function's example.

B Maintain governance

> She isn't enforcing standards.

C Apply expertise

> Expertise means advising. She's doing the work itself.

D Facilitate and support

> She isn't supporting others' work here.

Prediction

Q7

A cloud architect spends two hours advising the team on a data-storage decision, then returns to her own department. Which function is this?

A Provide oversight and coordination

> She isn't monitoring the project's progress.

B Apply expertise

> Advising on technical or domain-specific matters is this function.

C Perform work and contribute insights

> She isn't completing deliverables, only advising.

D Provide business direction

> Her advice is technical, not about the market.

Prediction

Q8

A quality board checks that a project meets national regulations and internal standards. Which function is this?

A Apply expertise

> Expertise advises. This board enforces.

B Provide resources and direction

> The board isn't allocating budget or people.

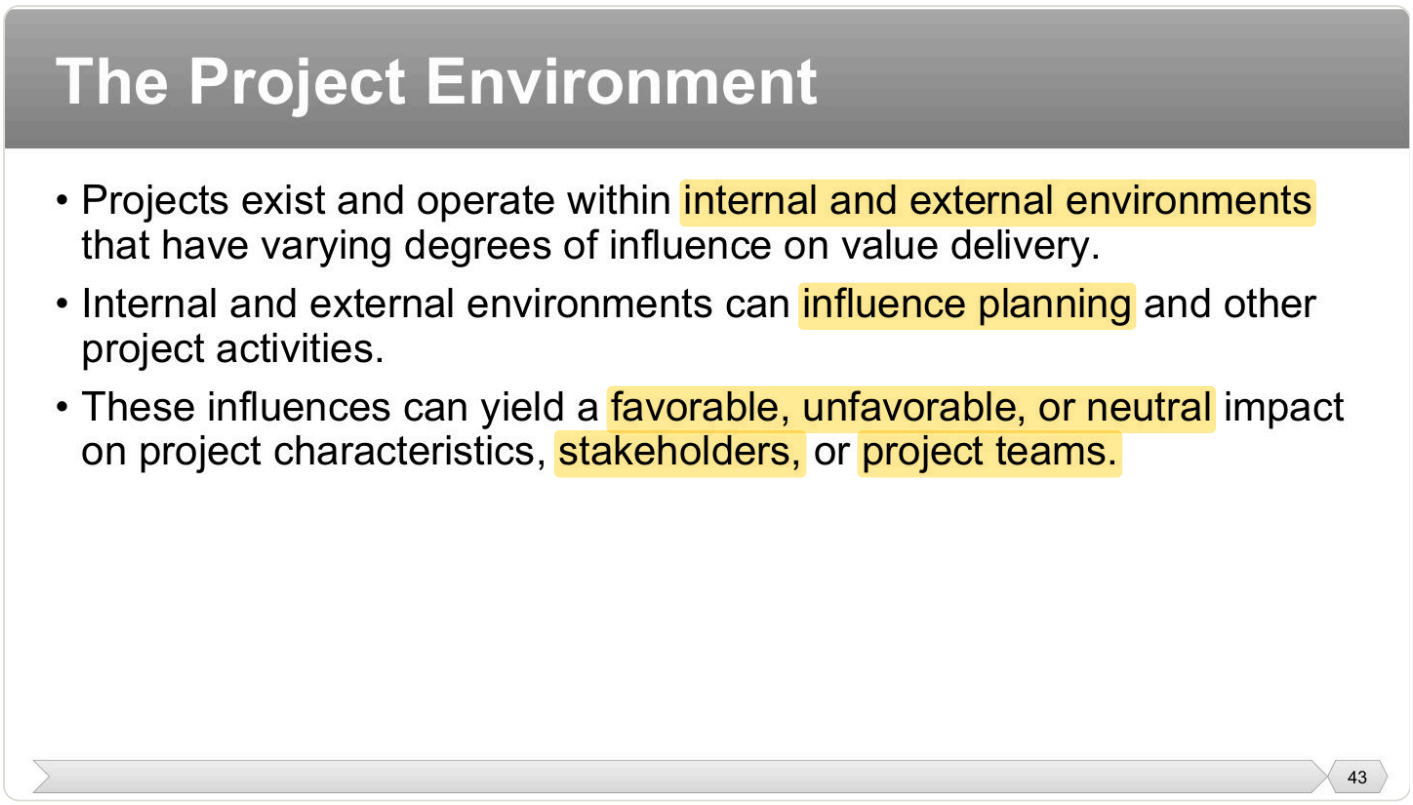
C Maintain governance

> Enforcing regulatory and internal standards is this function.

D Present objectives and feedback

> This concerns goals and progress, not compliance.

 The Project Environment



NOTES

1. Projects don't happen in a controlled lab. "Varying degrees" is important: some factors barely matter, while others can kill a project. A PM needs to tell which is which, rather than treating all factors alike.

2. Influences arrive before and during the work. A strict data law shapes your **planning** from day one, while a market shift might force a change in the middle of the project. So you check the environment throughout the project, not just at the start.

3. Don't assume "environment" means "problem". A strong local talent pool is **favorable**. A new tax that doesn't affect your project is **neutral**. Only some factors are **unfavorable**, and spotting favorable ones lets you make use of them.

TIPS & TRICKS

- Environment isn't always bad: **F-U-N** — Favorable, Unfavorable, Neutral.

EXAM ANGLE

Prediction Q1

Environmental influences on a project can be:

A Only neutral, as they stay outside the project

> They can influence planning and other project activities.

B Only unfavorable

> A skilled team or a growing market would be favorable.

C **Favorable, unfavorable, or neutral**

> The slide lists all three, so a factor isn't automatically a problem.

D Only internal

> Environments are both internal and external.

Prediction Q2

A strong local talent pool makes hiring easier for a project. How would you classify this influence?

A Neutral

> It has a real positive effect, so it isn't neutral.

B **Favorable**

> It helps the project, so it's a favorable influence.

C Not an environmental factor

> The labor market is part of the environment.

D Unfavorable

> It makes the project easier, not harder.

Prediction Q3

Internal and external environments can influence planning and other project activities.

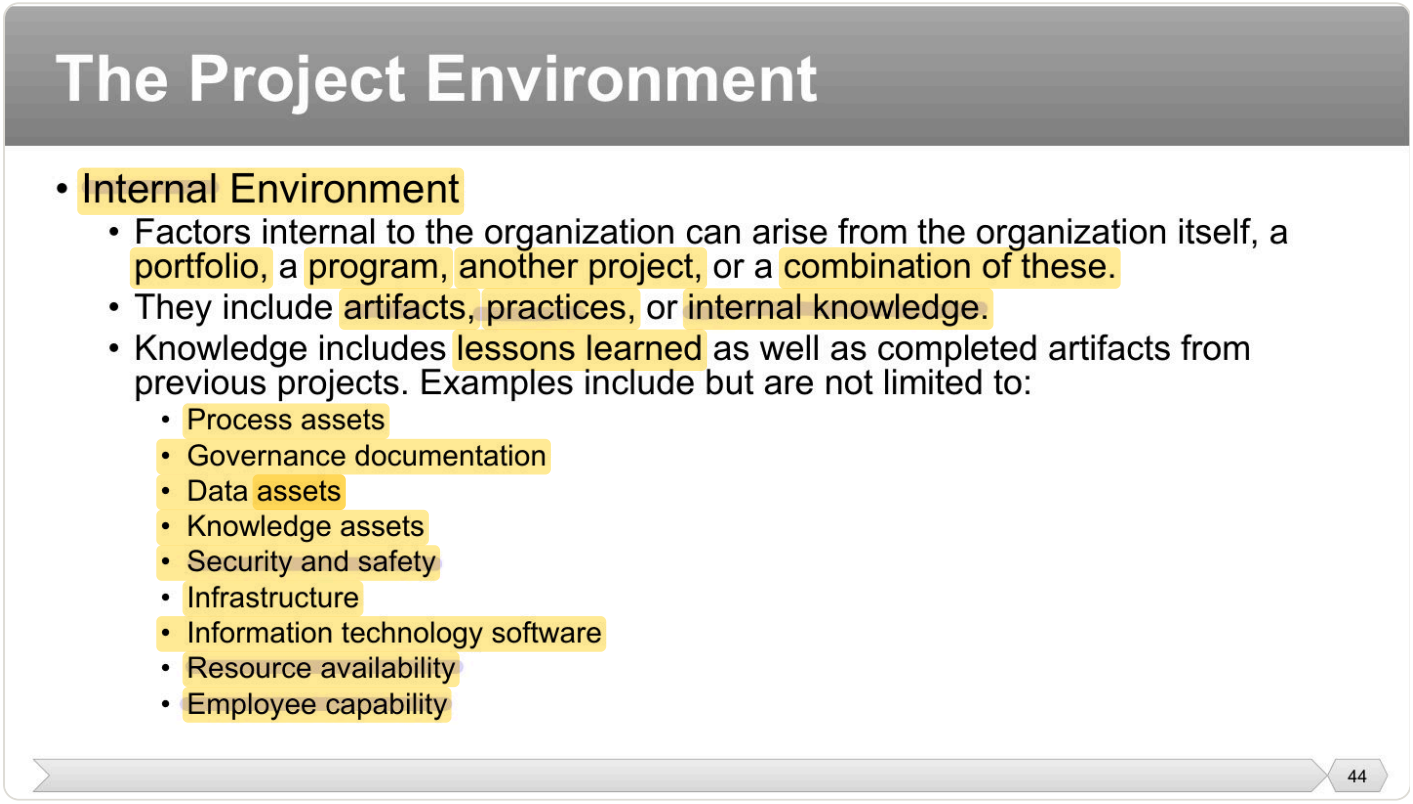
T True

This is the slide's second point.

F False

The statement is correct: the slide says these environments influence planning and other activities.

SLIDE 44 / 70 **The Project Environment**



NOTES

1. "Internal" includes sources you might not think of: another project within your organization competing for the same staff is internal, even though it's not your project. The test: does this come from inside the organization?
2. **Lessons learned** and old artifacts are knowledge your organization already owns. A team that looks up how the last migration went can avoid its mistakes, while one that doesn't may repeat them. It costs almost nothing, yet teams often skip it.
3. A useful way to group the list: **assets** (process, governance documents, data, knowledge), **infrastructure** (security and safety, facilities, IT software), and **people** (who is available, and what they can do). The "people" items catch students out: a skills gap feels like an outside problem, but it's internal.

TIPS & TRICKS

- Group the nine with **TAP**: **Technical setup** (security and safety, infrastructure, IT software) + **Assets** (process, governance, data, knowledge) + **People** (availability, capability).
- Internal test: **“Could our own organization fix this by its own decision?”**

EXAM ANGLE

Prediction Q1

Half of the developers have never used the cloud platform the project depends on. What kind of factor is this?

A External: marketplace conditions

> The market isn't the issue. The skills gap is within the organization.

B Internal: employee capability

> Staff skills belong to the organization, so this is internal.

C Internal: governance documentation

> This is about skills, not governing documents.

D External: academic research

> Research is an outside source of knowledge, unrelated to staff skills.

Prediction Q2

A team reuses templates and lessons learned from a previous project. These are examples of:

A External commercial databases

> These come from outside the organization.

B Regulatory environment

> Regulations are external.

C Industry standards

> Standards are external and come from the industry.

D Internal process and knowledge assets

> Knowledge includes lessons learned and completed artifacts from previous projects.

Prediction

Q3

Your best engineer is reassigned to another project in the same company. How would you classify this?

A **Internal: resource availability, arising from another project**

> The slide says internal factors can come from another project.

B External: marketplace conditions

> This happened inside the company, not in the market.

C Not an environmental factor at all

> It clearly influences the project, so it is one.

D External: because it's outside your project

> External means outside the organization, not outside your project.

Prediction

Q4

Which of these is NOT an internal environment factor?

A Security and safety

> Listed as internal on the slide.

B **A new government data-privacy law**

> A law comes from outside the organization.

C Information technology software

> Listed as internal on the slide.

D Infrastructure

> Listed as internal on the slide.

Prediction Q5

Factors internal to the organization can arise only from the project itself.

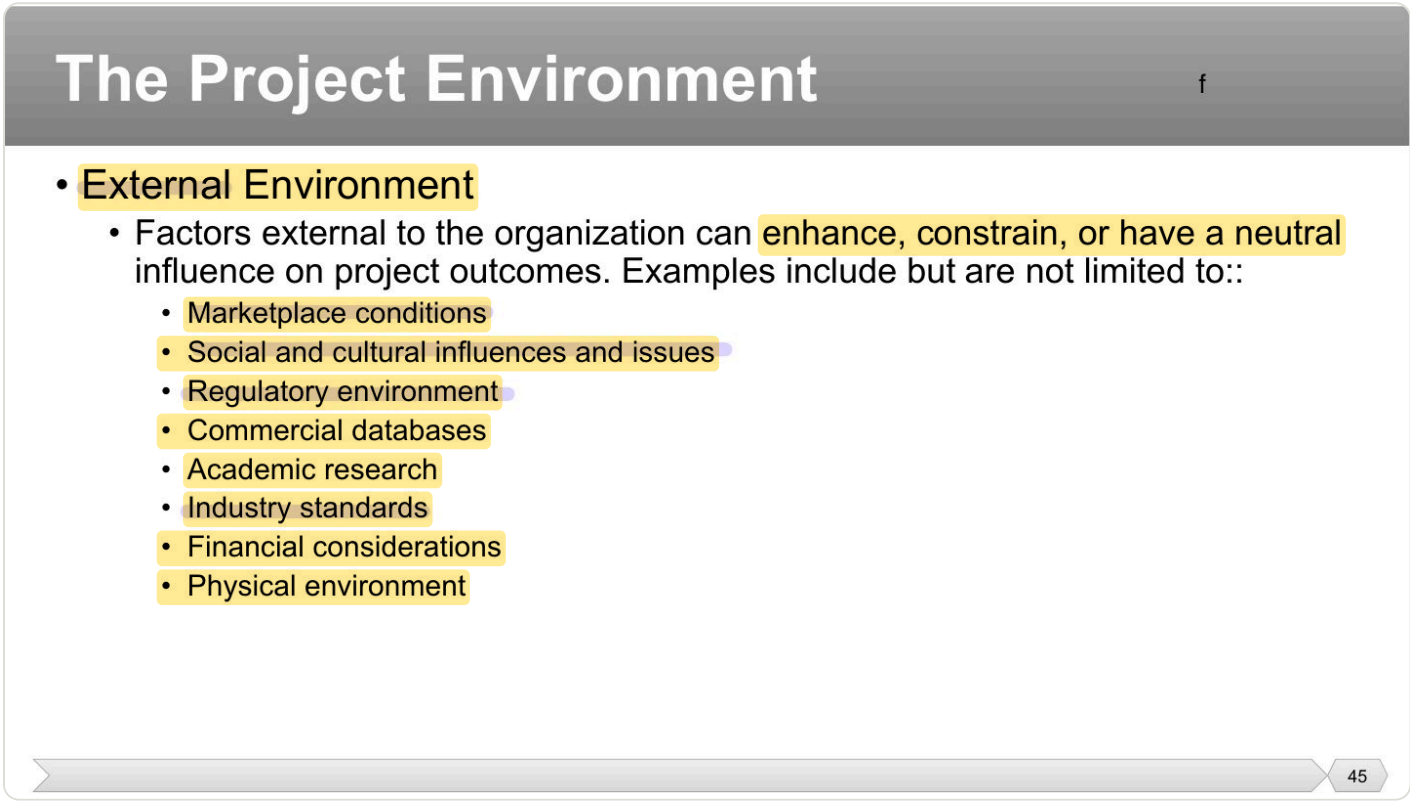
T True

> The slide lists several sources, including other projects, so “only the project itself” is wrong.

F False

> They can arise from the organization itself, a portfolio, a program, another project, or a combination.

SLIDE 45 / 70 **The Project Environment**



NOTES

1. The key words are **enhance, constrain or neutral**. External factors can help too: a new open-source library can save you months. And notice the contrast with slide 43’s words: the idea is the same, but the external factors aren’t yours to change, only to respond to.
2. **Marketplace, social and cultural, regulatory, financial and physical**: all conditions a project must work within, and none of them are under the organization’s control. A law like Saudi data-privacy rules, a currency shift or a culture’s preferences must be accommodated. You can’t decide them away.
3. The tricky ones are **commercial databases, academic research and industry standards**. The team actively uses them, so they feel internal, but they’re produced outside the organization. Ask where something comes from, not who uses it.

TIPS & TRICKS

- External test: **“Who produces it?”** If it comes from outside the organization, it’s external, even if your team uses it every day.
- Group the eight: **World** (market, social/cultural, regulatory, financial, physical) + **Published knowledge** (databases, research, standards).

EXAM ANGLE

Prediction Q1

A new national data-privacy law forces the team to redesign its storage layer. This is which kind of factor?

A External: academic research

It's external, but research isn't a law.

B External: regulatory environment

A law comes from outside the organization.

C Internal: process assets

Process assets are the organization's own methods.

D Internal: governance documentation

Governance documents are the organization's own. This law isn't.

Prediction Q2

A team bases its design on a published academic study and an international industry standard. How are these classified?

A Internal knowledge assets

Knowledge assets are the organization's own, such as lessons learned.

B External factors

Both are produced outside the organization, even though the team uses them.

C Neither, since they're only documents

The slide lists both as external factors.

D Internal process assets

These are the organization's own methods.

Prediction

Q3

A competitor's price drop forces a company to rethink its project's business case. Which external factor is this?

A Marketplace conditions

Competitors and prices are part of the market.

B Regulatory environment

No law or regulator is involved.

C Physical environment

This means physical conditions such as location or weather.

D Social and cultural influences

A price drop isn't a social or cultural matter.

Prediction

Q4

A construction site's extreme summer heat limits working hours. Which factor is this?

A External: physical environment

Weather and location are physical conditions that the organization doesn't control.

B Internal: infrastructure

Infrastructure is what the organization owns, not the weather.

C External: financial considerations

Heat isn't a financial condition, even if it affects cost.

D Internal: security and safety

Safety rules may be internal, but the heat itself is external.

Prediction

Q5

A currency’s value falls, raising the cost of imported hardware. Which external factor is this?

A Marketplace conditions

It’s close, but a currency movement is financial and not about demand or competitors.

B Industry standards

These are technical or professional norms.

C Commercial databases

These are data sources.

D Financial considerations

Exchange rates and financing costs are financial considerations.

Prediction

Q6

A team buys access to a commercial database of market data. How is this classified?

A Internal: data assets

Data assets are the organization’s own data.

B External: commercial databases

The data is produced outside the organization, even though the team pays to use it.

C Internal: IT software

It’s a data source from an outside provider.

D External: regulatory environment

No law or regulator is involved.

Prediction

Q7

Local customs mean users in a target region expect Arabic-first interfaces. Which external factor is this?

A Industry standards

> These are technical norms, not local customs.

B Social and cultural influences

> Cultural expectations are outside the organization’s control.

C Regulatory environment

> This is an expectation rather than a law.

D Employee capability

> This concerns staff skills, which are internal.

Prediction

Q8

External factors can only constrain project outcomes.

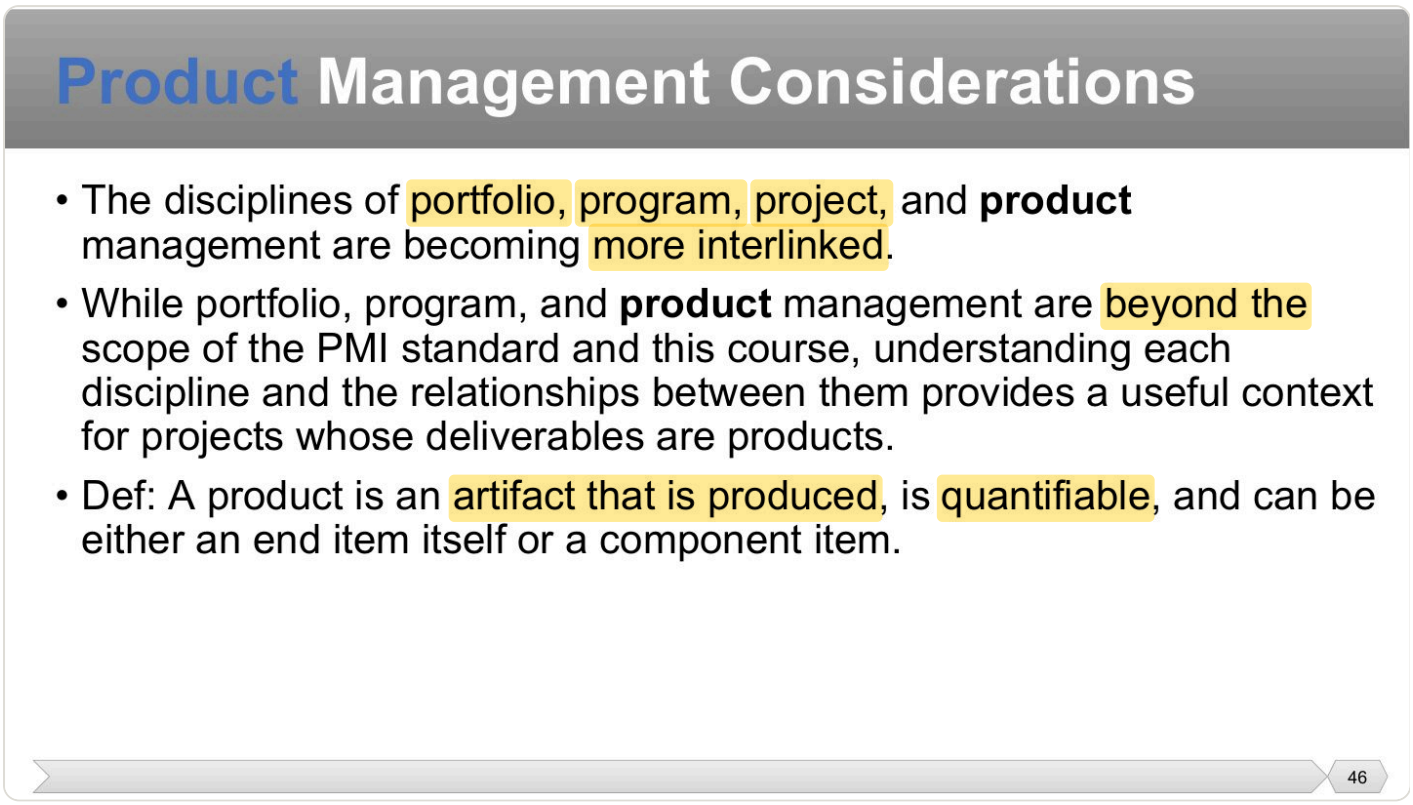
T True

> The slide lists three possibilities. A new open-source tool, for example, can enhance a project.

F False

> They can enhance, constrain or have a neutral influence.

 Product Management Considerations



NOTES

1. These four disciplines used to be taught as separate worlds. They are converging because value usually comes from a product that lives for years, while projects come and go around it. A PM who ignores what happens after handover will make poor decisions.

2. The slide narrows the scope: the course doesn't teach portfolio, program or product management in depth. It wants you to know how they relate to your project, particularly **when your project's result is a product someone will keep running**.

3. A product is **produced** (it results from work), **quantifiable** (it can be counted and measured) and either **end item or component** (a whole car, or just its engine). So a login module is a product, and a good customer experience isn't.

TIPS & TRICKS

- Product definition: **EQuiP** — **E**nd item or component, **Q**uantifiable, **P**roduced.

EXAM ANGLE

Prediction Q1

According to the slide, the disciplines of portfolio, program, project, and product management are:

A Becoming more interlinked

> The slide's first point is that they are becoming more interlinked.

B All the same discipline

> They are linked, but they remain different disciplines.

C Becoming more separate

> This is the opposite of what the slide says.

D All fully covered by the PMI standard

> The slide says portfolio, program and product management are beyond its scope.

Prediction Q2

Portfolio, program, and product management are beyond the scope of the PMI standard and this course.

T True

> The slide says so, adding that understanding how they relate is still useful for projects that deliver products.

F False

> The slide states this directly. You need to know how they relate, not study them in depth.

Prediction

Q3

A product can be:

A **Either an end item itself or a component item**

> Both are in the definition, so a component counts as a product.

B Only software

> Nothing in the definition limits it to software.

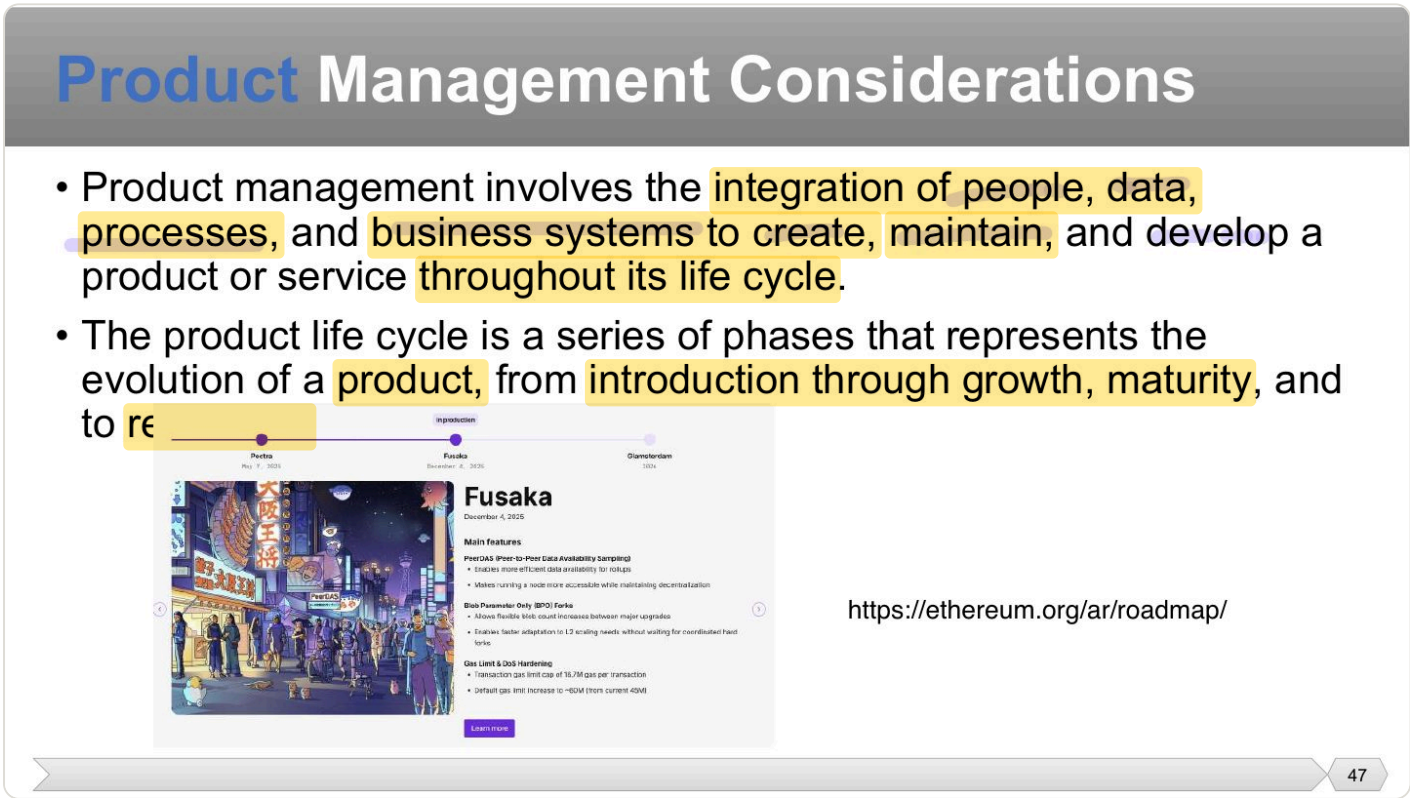
C Only a finished end item sold to customers

> A component item also counts.

D Any benefit the organization gains

> A benefit is a gain, and a product is an artifact.

SLIDE 47 / 70 **Product Management Considerations**



NOTES

1 Compare **lifespans**. A project team builds version one and disbands. Product management stays with it for years, deciding what to improve and eventually when to retire it. That's why it combines **people, data, processes and business systems**, and not only development: it must watch sales data, support tickets and costs too.

2 The life cycle works like a living thing. **Introduction**: new and few users. **Growth**: users and revenue climb. **Maturity**: growth levels off, and you defend the position. **Retirement**: replaced or no longer worthwhile. Each stage calls for different work, which is why different projects appear at each.

TIPS & TRICKS

- **Project ends. Product lives on.** A project is one episode, and the product is the whole series.
- Life cycle: **I-G-M-R** — "**I G**ot **M**y **R**eward."
- Read the question carefully: the instructor uses **project** and **product** on purpose.

EXAM ANGLE

Past exam · Midterm 261 · Short answer — Q1

Explain the difference between project management and product management. (Careful: product, not project.)

Answer: Project management is the application of knowledge, skills, tools and techniques to project activities to meet project requirements; a project is temporary, with a start and an end, and creates a unique result. **Product management** integrates people, data, processes and business systems to create, maintain and develop a product throughout its whole life cycle (introduction, growth, maturity, retirement). Product management lasts as long as the product does and can start projects or programs at any point in that life cycle to create or improve the product. The instructor's own question; she uses near-identical terms on purpose, so read "product" carefully.

Prediction — Q2

Product management integrates which things to create, maintain and develop a product?

A Scope, time, and cost

> These are project constraints.

B Knowledge, skills, tools, and techniques

> These four belong to the definition of project management (slide 4).

C Portfolios, programs, and projects

> Product management can start these, but they aren't what it integrates.

D People, data, processes, and business systems

> This is the slide's list, carried out across the whole life cycle.

Prediction

Q3

What is the correct order of the product life cycle?

A Introduction → maturity → growth → retirement

> Growth comes before maturity.

B Planning → execution → monitoring → closing

> These are project phases from older PMBOK, not product stages.

C Growth → introduction → maturity → retirement

> A product must be introduced before it can grow.

D Introduction → growth → maturity → retirement

> This is the order on the slide, and it's how a product develops over time.

Prediction

Q4

Sales of a five-year-old app have stopped growing, but it remains profitable and stable. Which stage is it in?

A Growth

> Sales have stopped growing.

B Retirement

> It's still profitable and stable, so it isn't being retired.

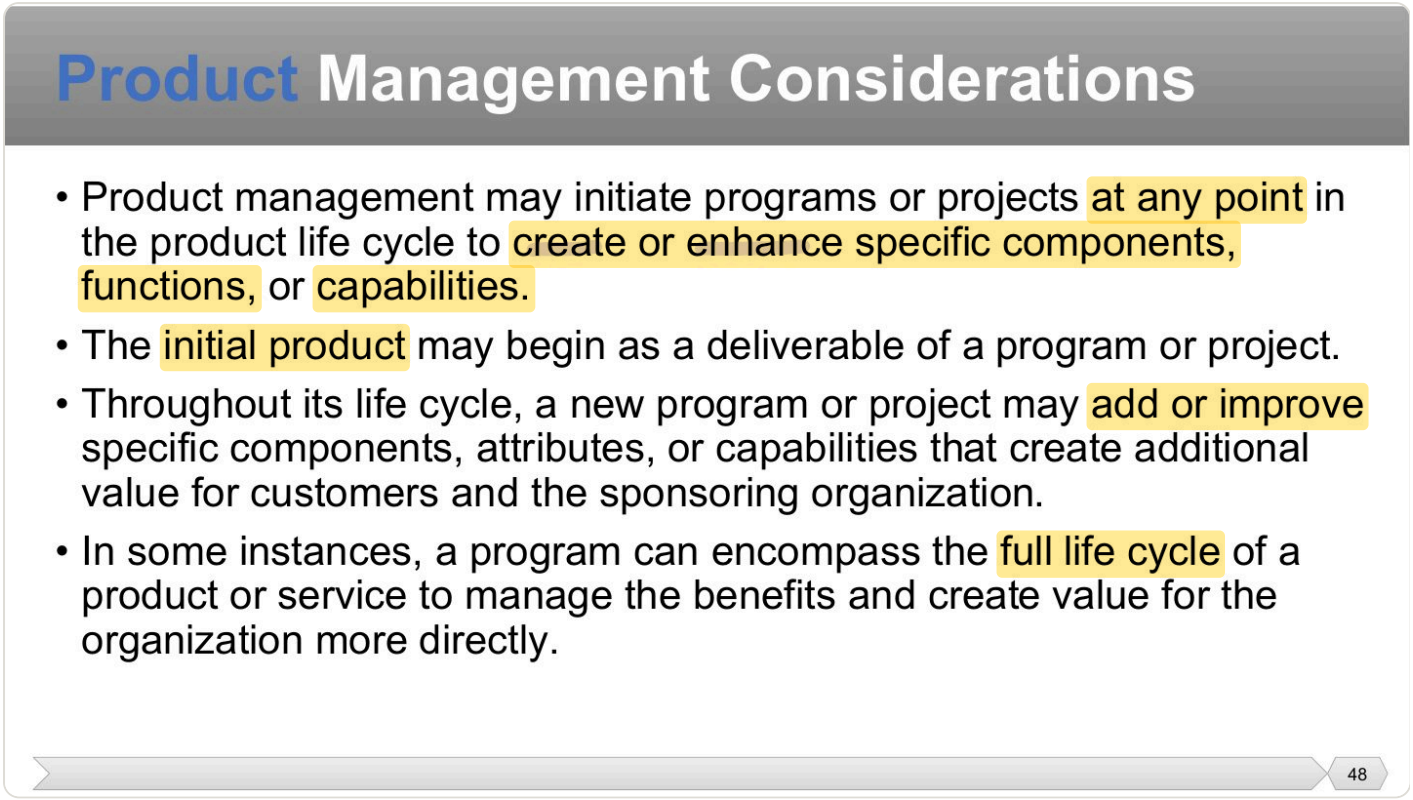
C Introduction

> Introduction is for new products. This one is five years old.

D Maturity

> Growth has leveled off, but the product is still doing well.

 Product Management Considerations



NOTES

1. "At any point" is the key phrase. Product management doesn't run one big project. It starts new ones when needed: a project to add a feature in year two, another to modernize in year five. Projects are the product's tools for change.
2. A product usually begins as a project's deliverable. The first version comes from a temporary effort, and then the permanent product life starts when that project closes.
3. Each later project has a reason, which is to **add or improve** something that gives customers and the organization more value. If a proposed project wouldn't do that, there's no reason to fund it.
4. Occasionally a product and its program are the same length. Then one program can **cover the full life cycle**, which keeps managing benefits close to the product. Think of a defense system whose program runs from development through to decommissioning.

TIPS & TRICKS

- Think of a **house** (the product) over decades: built by one project, then a kitchen renovation project, then a new roof project. The house remains, and each project ends.

EXAM ANGLE

Prediction Q1

When may product management initiate programs or projects?

A Only after retirement

> After retirement there's no product to improve.

B At any point in the product life cycle

> The slide's wording is "at any point", to create or enhance components, functions or capabilities.

C Only during the introduction stage

> Later stages also start projects, such as modernizing a mature product.

D Only once, at the start

> New projects can be started throughout the life cycle.

Prediction Q2

The initial product may begin as a deliverable of a program or project.

T True

> The slide says exactly this: the first version often comes from a temporary effort.

F False

> The statement is correct. It's the second point on the slide.

Prediction

Q3

Three years after launch, a project adds a new payment feature to an app. Why does this fit the slide?

A **A new project may add or improve capabilities that create additional value**

The product continues, and this project adds value within its life cycle.

B Products can’t change after launch

The slide says they can, throughout the life cycle.

C Only the original project team may add features

The slide doesn’t set this limit.

D This must be handled as an operation, not a project

It’s a temporary effort with a unique result, so it’s a project.

Prediction

Q4

A single program runs a product from its first development to its final retirement. What does the slide say about this?

A This turns the program into a portfolio

A portfolio is a group for strategic objectives, not one product’s program.

B It’s not allowed, since programs must be temporary and short

Programs may last as long as the product in such cases.

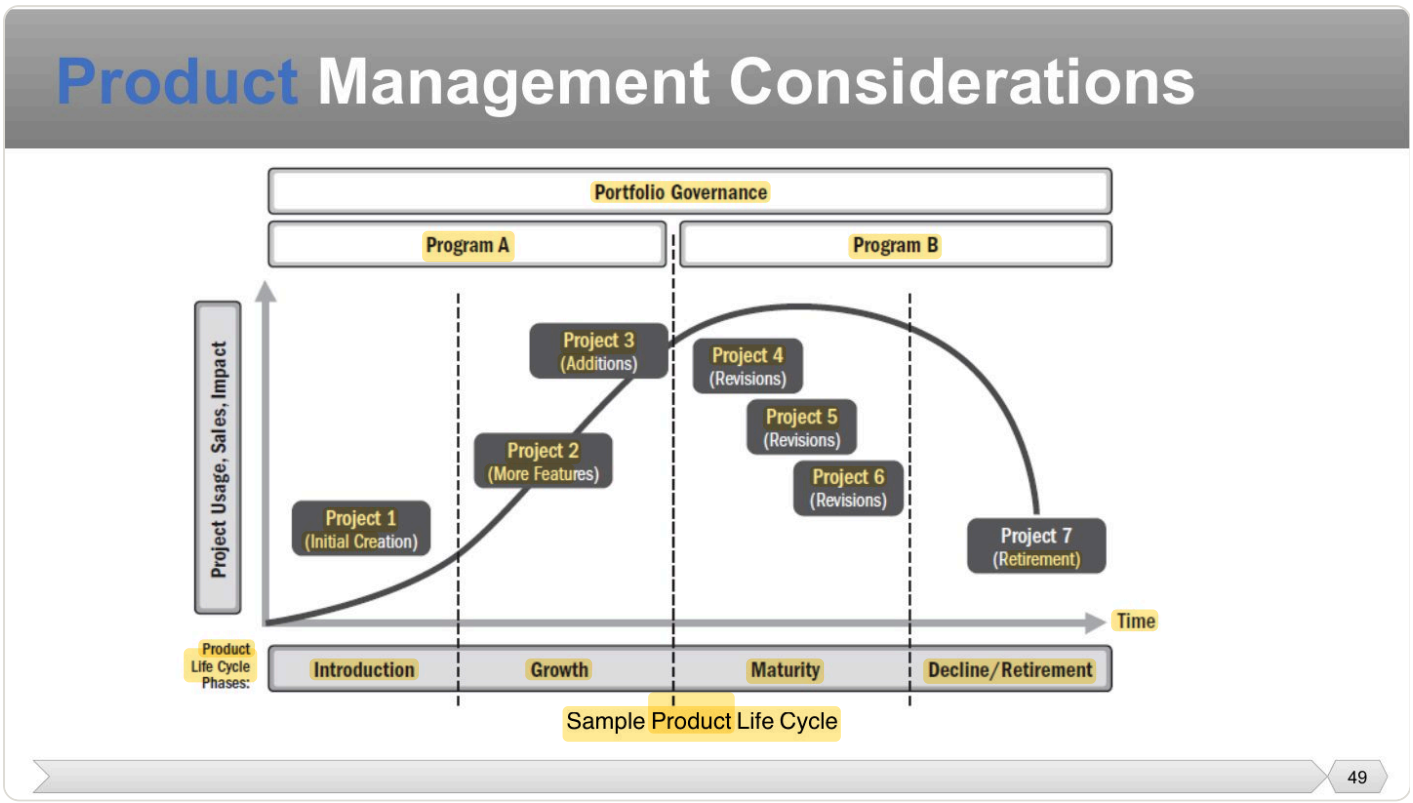
C This means the product has no value

It’s done in order to manage value more directly.

D **In some instances, a program can encompass the full life cycle to manage benefits more directly**

The slide explicitly allows this.

 Product Management Considerations



NOTES

1. Everything sits under **portfolio governance**, because someone must decide which of these projects get funded. Programs A and B group related work. The rising and falling curve is the product's usage or revenue over time, which is what the projects are trying to affect.

2. See how each project matches the product's need at that stage. **Project 1** creates it (introduction). **Projects 2–3** add features while it's growing fast. **Projects 4–6** keep it competitive as it matures, because growth has slowed and revisions keep it attractive.

3. **Project 7** retires it. Retiring is a real project with its own work: moving users, archiving data, shutting systems down. Notice the main lesson: **one product, seven projects**, which is the clearest picture of the difference between product and project management.

TIPS & TRICKS

- Sketch this from memory: a hill-shaped curve, with project boxes along the bottom and portfolio governance on top. If you can draw it, you understand the section.

EXAM ANGLE

Prediction Q1

In the sample product life cycle, what is the purpose of the final project?

A To set the portfolio's strategy

> Governance and leadership do this, not a project at the end of a life cycle.

B **To retire the product**

> Retirement is real work, so it's carried out as a project.

C To add features during growth

> That's the job of the earlier projects.

D To create the product

> That's Project 1, at the start of the curve.

Prediction Q2

What does the diagram show about the relationship between products and projects?

A **One product can have many projects across its life**

> Seven projects appear across one product's curve.

B Each product has exactly one project

> The diagram shows several projects.

C Products exist only during their projects

> The product's curve continues between and beyond projects.

D Each project creates a different product

> All these projects serve the same product.

Prediction Q3

Which element sits above the programs and projects in the diagram?

A Project 1

> Project 1 is one of the projects under the programs.

B Operations

> Operations are a separate component and don't sit on top here.

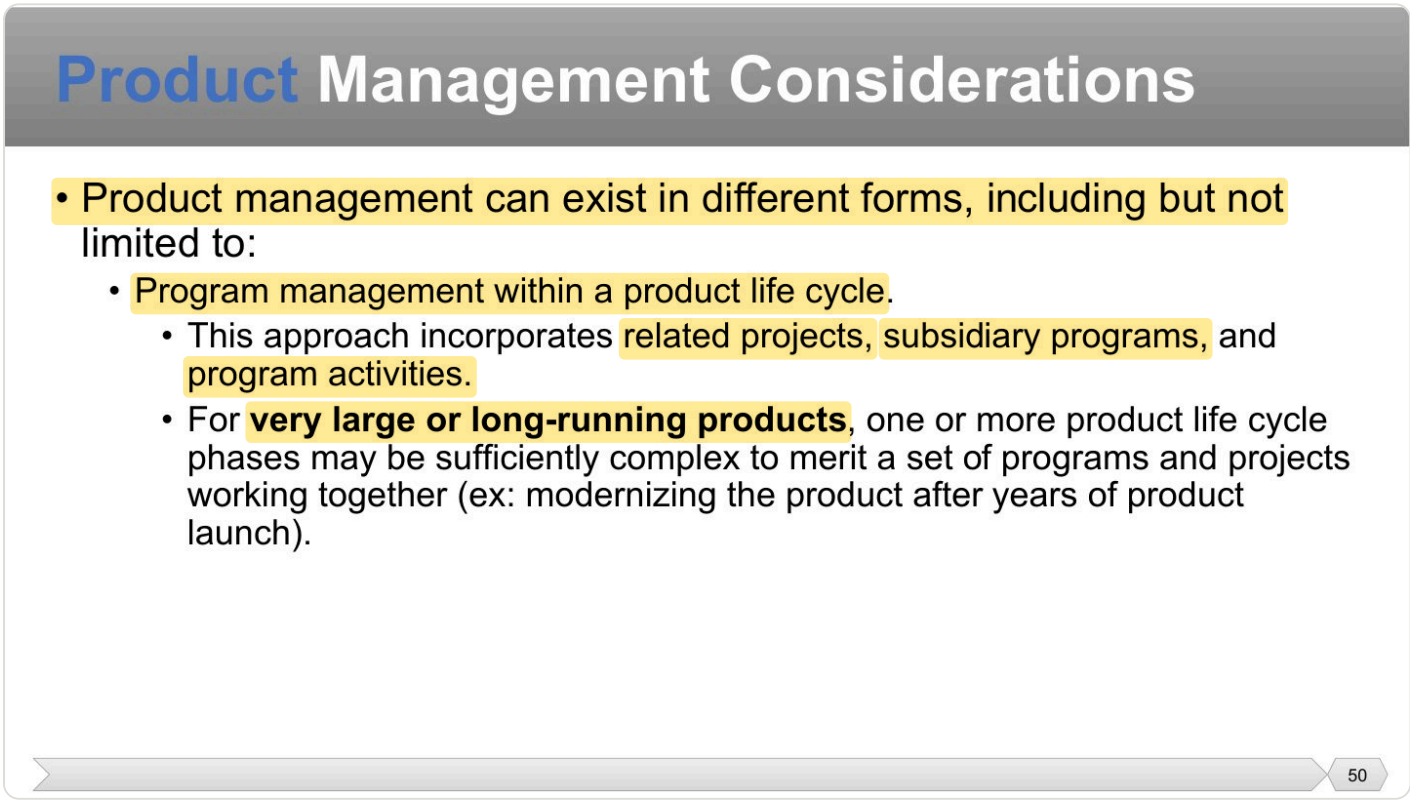
C The customer

> The diagram shows the organization's structure, not the customer.

D **Portfolio governance**

> It oversees the whole set and decides what gets funded.

SLIDE 50 / 70 **Product Management Considerations**



NOTES

1 This is the **largest** of the three forms. Here a product is so big that even one stage of its life needs its own program, a coordinated set of projects. So the product is the outer container, and the program sits inside one stage of it.

2. Why does size matter? Modernizing a nationwide banking platform after years in service might involve separate projects for infrastructure, security, each customer channel and data migration. These depend on each other, so they need coordinating as a program. A small change wouldn't justify this.

TIPS & TRICKS

- Three forms: read the **first word** to see what's inside. "**Program** management within a product life cycle" = a program in a product's life. "**Project** management within..." = a project in a product's life. "**Product** management within a program" = a whole product inside a program.

EXAM ANGLE

Prediction Q1

Very large or long-running products may have life cycle phases complex enough to need a set of programs and projects working together. Which form of product management is this?

A Program management within a product life cycle

> Coordinated programs and projects within a phase of a big product's life is this form.

B Portfolio management

> Portfolio management isn't one of the three forms on these slides.

C Project management within a product life cycle

> This form charters individual projects, with no coordinated program.

D Product management within a program

> Here the product's life is inside a program, which is the other way round.

Prediction Q2

A company modernizes a large product years after launch through several related, coordinated projects. Which form is this?

A General management

> General management runs ongoing operations, not this temporary set of projects.

B Product management within a program

> The product existed long before this work, and it isn't contained in a program.

C Program management within a product life cycle

> Several related, coordinated projects make it a program, inside the product's life.

D Project management within a product life cycle

> This form would be one individual project at a time, not a coordinated set.

Prediction Q3

This approach “incorporates related projects, subsidiary programs, and program activities.” Which form does that describe?

A Portfolio governance

> This is what charters projects, not a form of product management.

B **Program management within a product life cycle**

> This is the slide’s description of this form.

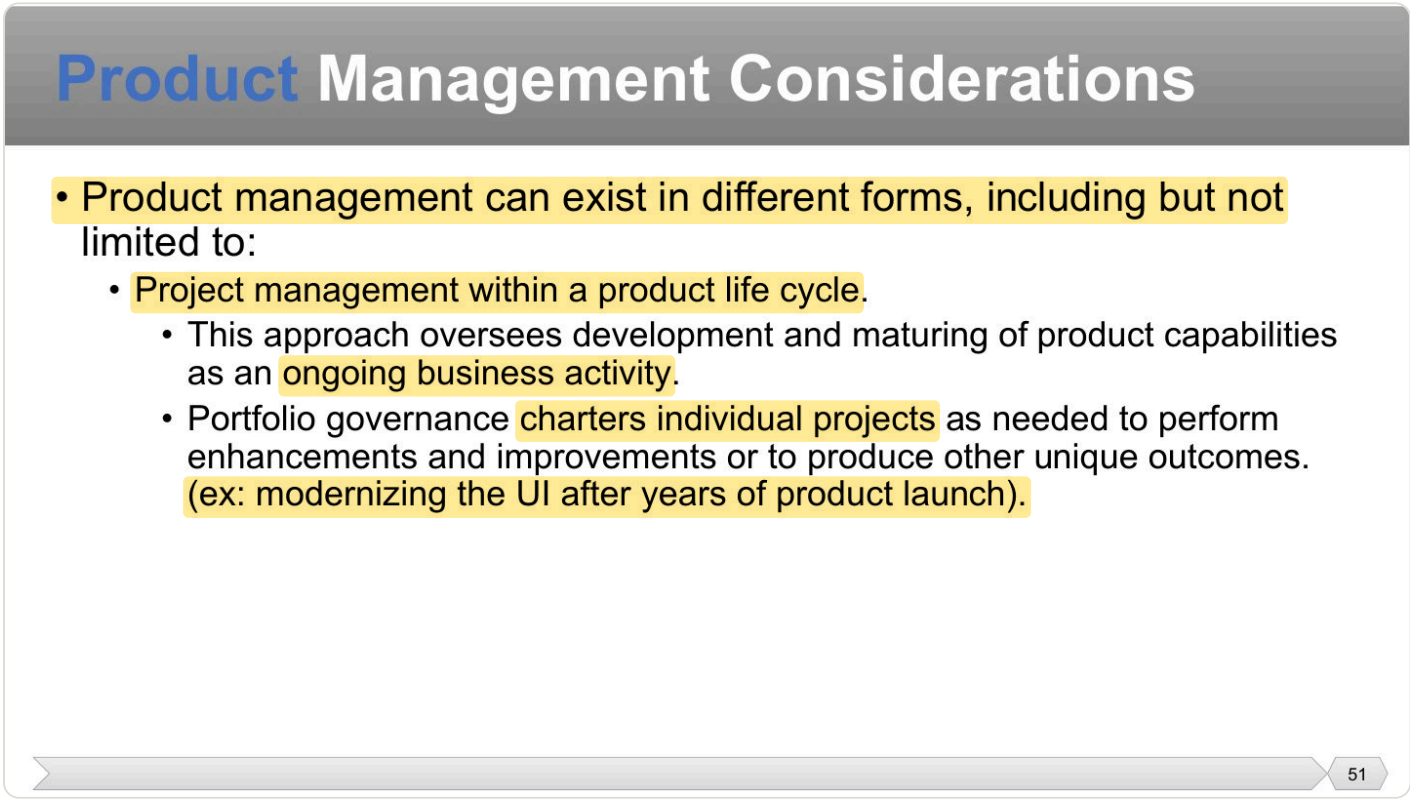
C Product management within a program

> That one applies the full life cycle within a program’s boundaries.

D Project management within a product life cycle

> That one oversees development as an ongoing activity, chartering individual projects.

SLIDE 51 / 70 **Product Management Considerations**



NOTES

1. This is the **most common** form. No big program is needed, because the product simply exists as a normal part of the business.
2. “Ongoing business activity” is what separates this from a project: nobody expects the product’s improvement to end. It’s treated like running a department, not like a one-off piece of work.

3. When a specific change is needed, **portfolio governance charters a project** for it. To “charter” means to formally authorize it. The project does its job, like modernizing the interface, then closes, while the product continues.

TIPS & TRICKS

- **Individual projects, one at a time, as needed**, like calling a contractor to fix one thing in your house.

EXAM ANGLE

Prediction Q1

After five years, a company charters a single project to modernize its app's user interface. Which form of product management is this?

A Product management within a program

> This product isn't contained within one program.

B Project management within a product life cycle

> One individual project, chartered as needed, is this form. The slide uses this exact example.

C Program management within a product life cycle

> That would need a set of coordinated programs and projects.

D Portfolio management

> The portfolio charters the project, but it isn't one of the three forms.

Prediction Q2

In this form, what oversees the development and maturing of product capabilities?

A External auditors

> Auditors check compliance. They don't manage product development.

B A temporary team that closes when the first version ships

> That would be one project, and this form continues throughout the product's life.

C It is managed as an ongoing business activity

> The slide's wording is "as an ongoing business activity".

D The customer

> Customers give feedback, but the organization runs this activity.

Prediction Q3

Who charters the individual projects in this form?

A The project team

A team doesn't authorize its own project.

B **Portfolio governance**

The slide says portfolio governance charters them as needed.

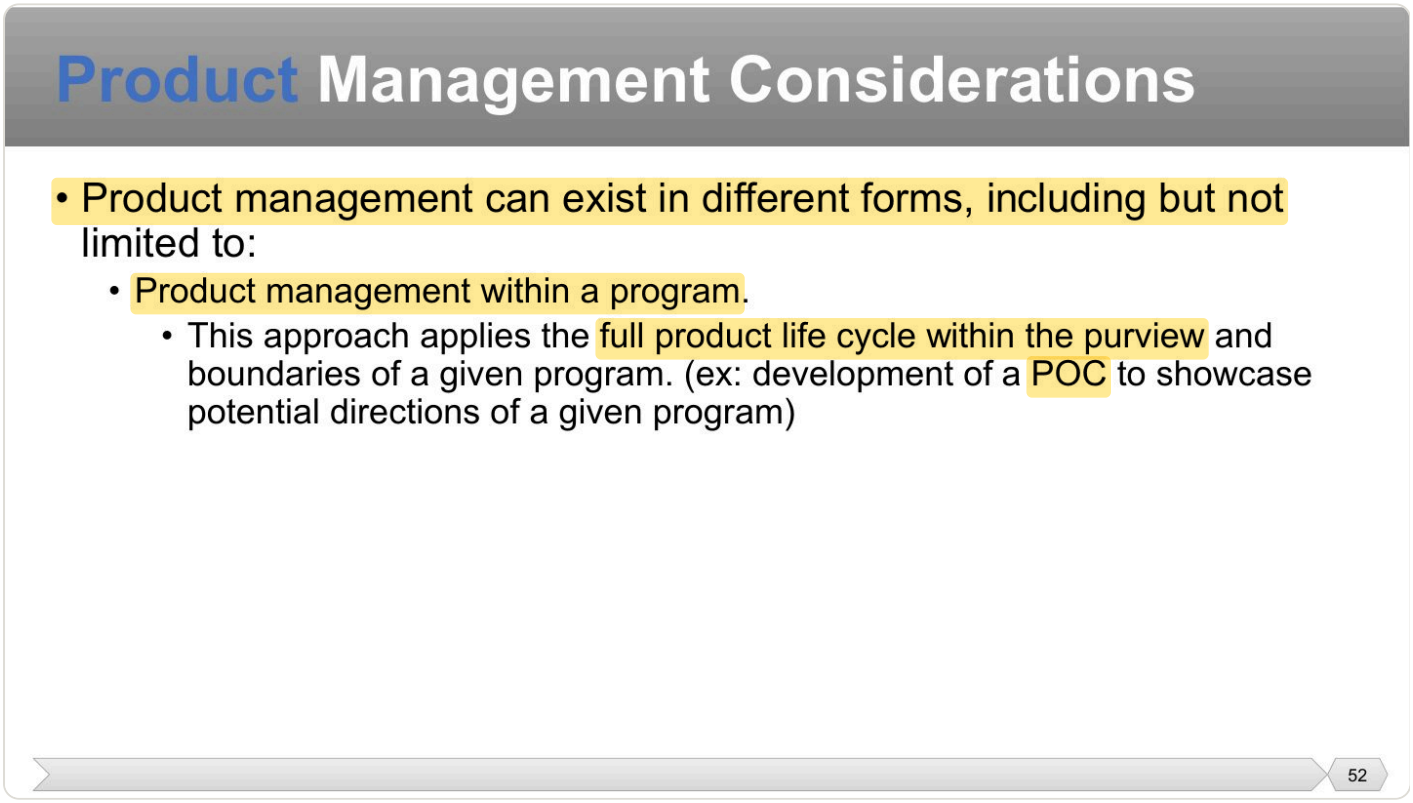
C The customer

Customers may request changes, but they don't charter internal projects.

D PMI

PMI sets standards and doesn't authorize a company's projects.

SLIDE 52 / 70 **Product Management Considerations**



NOTES

1. This one flips the containers: the **program is the outer box**, and the whole product's life sits inside it. So the product is small relative to the program.
2. "Full life cycle within the purview" means the product is born, used and retired while the program runs, and doesn't outlive it.

3 A **proof of concept (POC)** is a small product built to test an idea. A program building a new payments platform might build a POC to compare two technical directions, use it to decide, and then discard it. It has a complete life, all inside the program. That's why it's the slide's example.

TIPS & TRICKS

- Size order, biggest product first: **Program in a product** → **Project in a product** → **Product in a program**.
- POC = **a model of a building**: made to help decide, then put away.

EXAM ANGLE

Prediction Q1

A program develops a proof of concept to explore possible directions, then ends it. Which form of product management is this?

A Program management within a product life cycle

> There, the product is larger than the program.

B Product management within a program

> The small product's full life cycle fits inside the program, and the slide uses this example.

C Operations management

> A POC is a temporary, unique effort rather than ongoing work.

D Project management within a product life cycle

> There, an ongoing product charters individual projects.

Prediction Q2

"Applies the full product life cycle within the purview and boundaries of a given program" describes:

A Portfolio governance

> This isn't one of the three forms.

B Program management within a product life cycle

> This reverses the containers.

C Product management within a program

> This is the slide's description.

D Project management within a product life cycle

> This form doesn't have the product's life contained in a program.

Prediction

Q3

In “product management within a program”, what contains what?

A The project contains the program

> Programs contain projects, not the reverse.

B The product’s life cycle contains the program

> This describes program management within a product life cycle.

C The product contains several portfolios

> A product doesn’t contain portfolios.

D **The program contains the product’s whole life cycle**

> The program is the outer box.

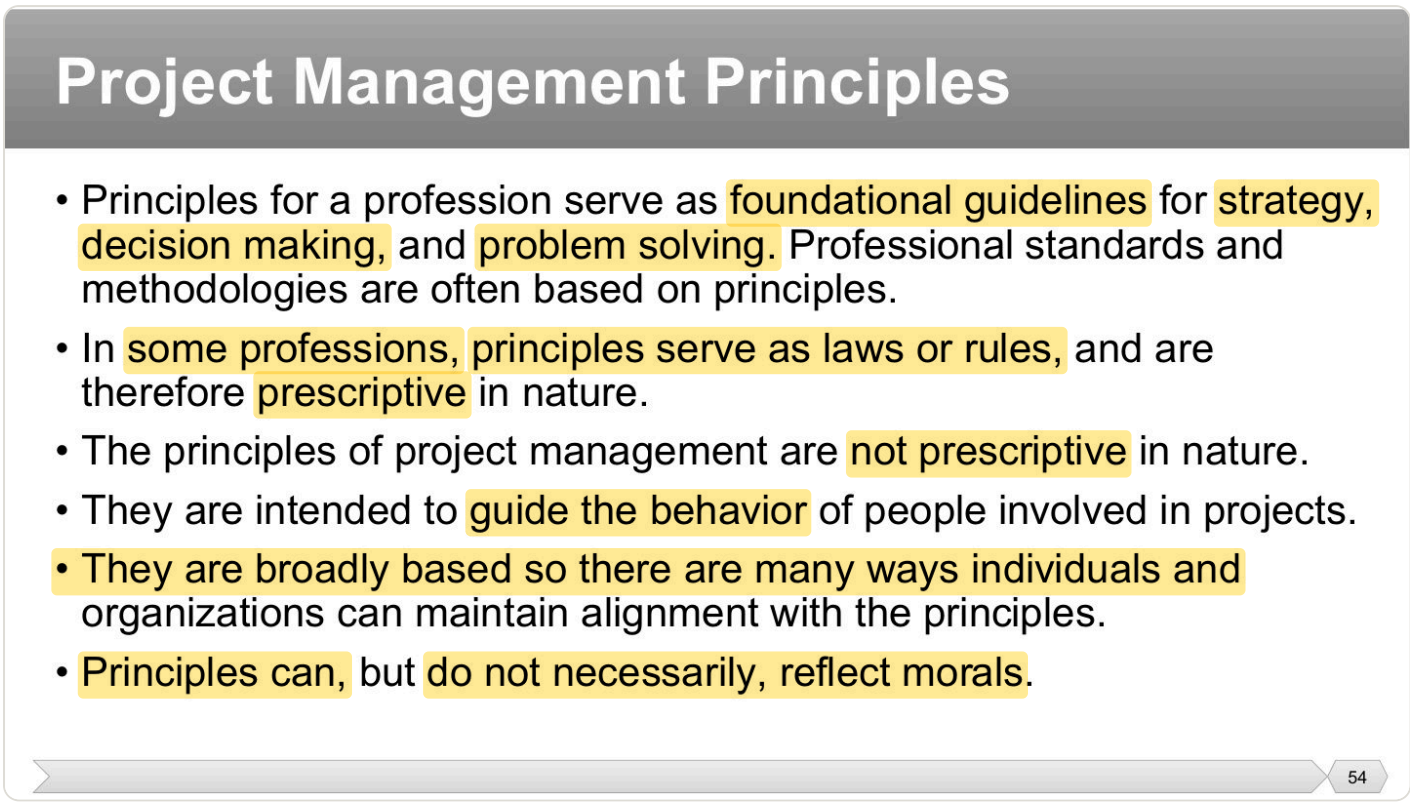
SLIDE 53 / 70 **Project Management Principles (section)**



NOTES

1. Section divider. You’ve seen the 12 principles in brief on slide 21. These slides explain what kind of thing a principle is, and then give each one its own card.

 Project Management Principles



NOTES

1. Standards and methods change, but principles last longer. PMBOK's methods are built on them. So when no method covers your situation, you can reason from a principle: "What would good stewardship look like here?"
2. **Prescriptive** means "you must do exactly this". Building codes are prescriptive: the regulation says the required beam size. Project management can't work that way, because every project differs. A rule for a mobile app could be wrong for a hospital system.
3. Principles **guide behavior**, so two PMs can follow the same principle differently and both be right. One team might involve stakeholders through weekly demos, another through monthly reviews.
4. Principles and morals are different things. "Tailor to the context" is good advice, but not a moral issue. Stewardship does touch on morals. That's why the slide says "can, but do not necessarily" reflect morals.

TIPS & TRICKS

- **Principle = compass, not GPS.** It points you in the right direction but doesn't give you turn-by-turn directions.
- Trap words: **"must", "always", "exactly"** in a statement about principles usually make it false.

EXAM ANGLE

Prediction Q1

The principles of project management are prescriptive rules that must be followed exactly.

T True

> In some professions principles are rules, but the slide says project management's aren't. They guide behavior, and there are many ways to stay aligned with them.

F False

> They are not prescriptive; they guide behavior and can be applied in many ways.

Prediction Q2

Project management principles always reflect morals.

T True

> Watch out for "always". A principle like tailoring is practical advice, with nothing moral about it.

F False

> The slide says they "can, but do not necessarily" reflect morals.

Prediction Q3

What do principles for a profession serve as?

A Step-by-step procedures for each task

> That describes a method or a process, not a principle.

B Foundational guidelines for strategy, decision making, and problem solving

> This is the slide's first point. Standards and methods often build on them.

C Legal requirements in every profession

> Some professions treat them as laws, but it isn't universal, and project management doesn't.

D Performance targets for staff

> Principles guide behavior. They don't set targets.

Prediction

Q4

Two PMs both apply “engage stakeholders” differently: weekly demos and monthly reviews. What does this show?

A The principle has been violated by both

> Both are engaging stakeholders, so both are aligned.

B Principles are broad, so there are many ways to stay aligned with them

> The slide says they’re broadly based, giving room for different approaches.

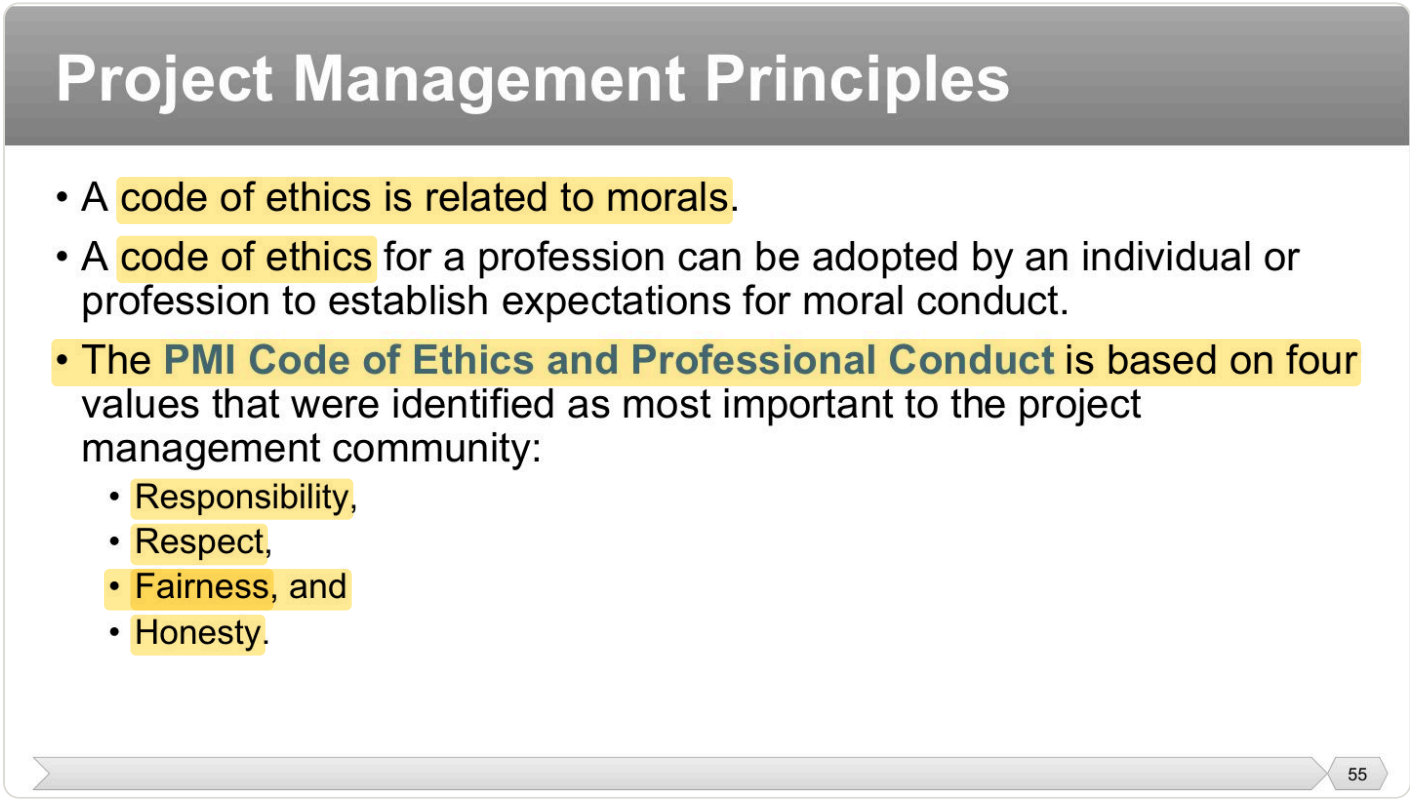
C One PM is wrong, since principles allow only one way

> Principles don’t prescribe one way.

D Principles apply only in large organizations

> Nothing limits them this way.

SLIDE 55 / 70 **Project Management Principles**



NOTES

1 Unlike principles, a **code of ethics** is explicitly about morals: it’s how a profession tells its members what conduct is expected. You can adopt a code as an individual or as a whole profession. That’s why it sits next to principles but is different from them.

2 Think of each value as answering a question. **Responsibility**: do you own your decisions and their results? **Respect**: do you treat people and resources well? **Fairness**: are you impartial, with no hidden interests? **Honesty**: do you tell the truth, even when it hurts? Together they cover almost any ethical dilemma you'll face.

TIPS & TRICKS

- **FuRtHeR**: Fairness, Respect, Honesty, Responsibility.
- Integrity is the classic wrong answer. It belongs to **stewardship** (slide 59), not to the four ethics values.

EXAM ANGLE

Prediction Q1

Which of the following is NOT one of the four values of the PMI Code of Ethics and Professional Conduct?

A Responsibility

> This is one of the four values.

B Fairness

> This is one of the four values.

C **Integrity**

> Integrity belongs to stewardship (slide 59). The four values are responsibility, respect, fairness and honesty.

D Honesty

> This is one of the four values.

Prediction Q2

A code of ethics is related to:

A Only the law

> Ethics goes beyond law to what is right and wrong.

B Project scheduling

> A code of ethics is about conduct, not schedules.

C **Morals**

> The slide says a code of ethics is related to morals, setting expectations for moral conduct.

D Quality metrics

> These measure deliverables, not moral conduct.

Prediction

Q3

A PM discloses that a bidding vendor belongs to her cousin and steps out of the decision. Which value is she mainly applying?

A Responsibility

> She acts responsibly, but the main value here is keeping the decision impartial.

B Fairness

> Avoiding a conflict of interest and staying impartial is fairness.

C Respect

> Respect concerns how people are treated. The issue here is impartiality.

D Honesty alone

> She is honest in disclosing, but stepping out of the decision is what protects fairness.

Prediction

Q4

A PM admits to the client that a mistake in her own estimate caused the delay. Which value is this mainly?

A Respect

> Respect concerns how she treats others.

B Responsibility

> Owning your decisions and their consequences is responsibility.

C Fairness

> Nobody is being treated impartially here.

D Stewardship

> Stewardship is a principle, not one of the four ethics values.

Prediction

Q5

A PM listens carefully to a junior developer's concerns and doesn't talk over them. Which value is this?

A Honesty

> Nothing here is about telling the truth.

B Responsibility

> Nothing here is about owning results.

C Fairness

> This could be fair, but the behavior described is how she treats the person.

D Respect

> Treating people with care and taking them seriously is respect.

Prediction

Q6

A PM reports the true status to the sponsor although the news is bad. Which value is this?

A Respect

> Respect matters, but what's being tested is truthfulness.

B Integrity

> Integrity isn't one of the four values on this slide.

C Honesty

> Telling the truth even when it is uncomfortable is honesty.

D Fairness

> Nobody's interests are being weighed against another's.

Prediction Q7

A code of ethics can be adopted by an individual or a profession to establish expectations for moral conduct.

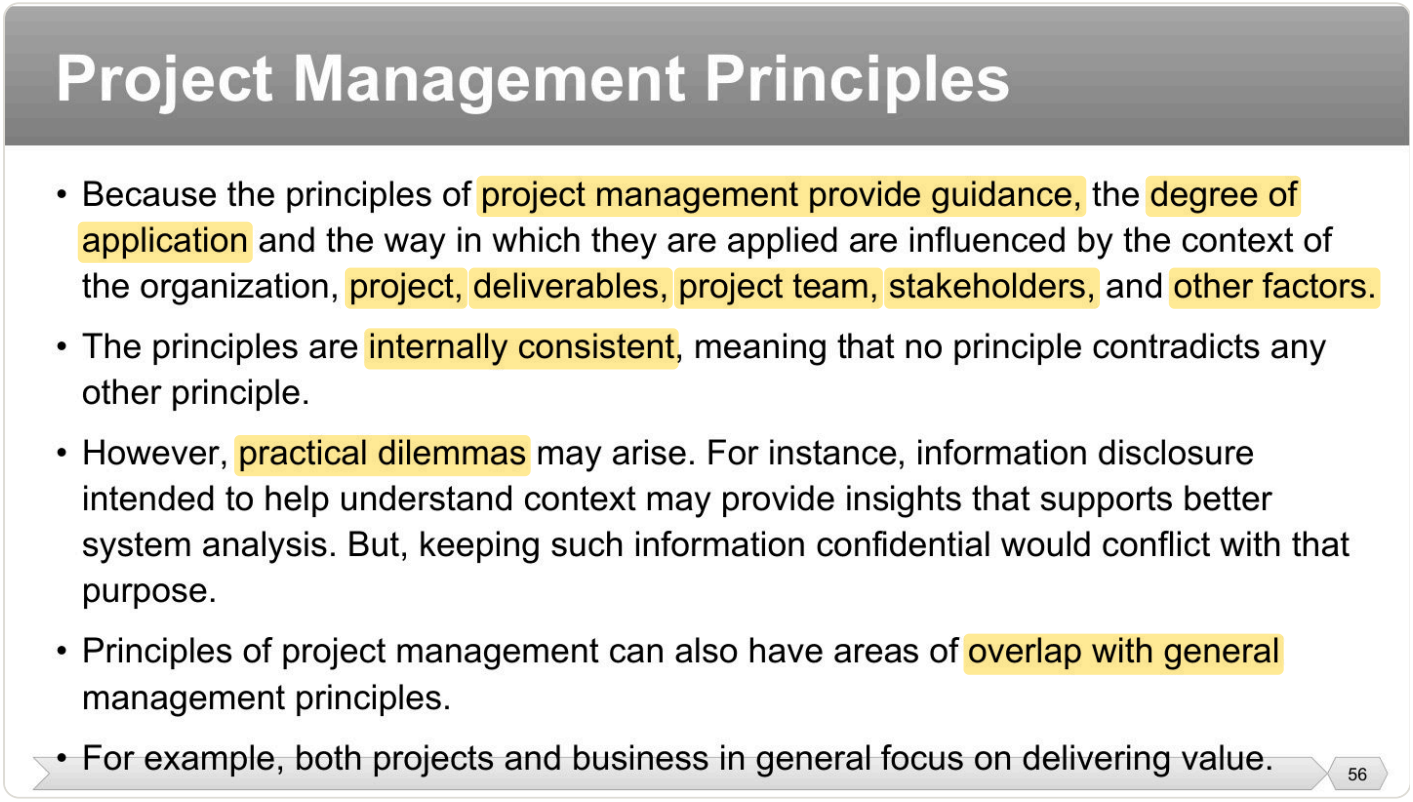
T **True**

> The slide says both can adopt it.

F False

> The statement is correct: the slide says it can be adopted by an individual or by a profession.

SLIDE 56 / 70 **Project Management Principles**



NOTES

1. Because principles guide rather than prescribe, you apply them differently for different situations. A two-person internal tool needs a light touch with stakeholders, while a national system needs a formal plan. Both follow the same principle to different degrees.
2. **Internally consistent** means the 12 were designed not to contradict one another. So if two seem to conflict, the cause is usually your situation, not the principles.
3. That's the dilemma part. Sharing information helps the team understand the system (systems thinking), but some of it may be confidential (stewardship). Neither principle is wrong. You just have to judge how much to share, perhaps by giving people what they need without the private details.
4. Some principles apply to any kind of manager: leadership, ethics and focusing on value aren't unique to projects. The next slide's Venn diagram shows this overlap.

TIPS & TRICKS

- Say it as: **“No contradictions on paper, but dilemmas in practice.”**

EXAM ANGLE

Prediction Q1

Because the principles are internally consistent, no practical dilemmas can arise when applying them.

T True

> Consistent doesn’t mean easy. The slide’s example is disclosing information versus keeping it confidential.

F False

> The principles don’t contradict each other, but the slide says practical dilemmas may still arise.

Prediction Q2

“The principles are internally consistent” means:

A No principle contradicts any other principle

> This is the slide’s explanation of the phrase.

B They apply in the same way on every project

> Application varies with context.

C They never overlap with general management

> The slide says they can overlap.

D They must be applied in numerical order

> They aren’t ordered steps.

Prediction

Q3

Which of these influences the degree and way principles are applied?

A **The context of the organization, project, deliverables, team, and stakeholders**

The slide lists these factors, since principles provide guidance rather than rules.

B Only the size of the budget

Budget may matter, but the slide's list is much wider.

C The numerical order of the principles

The order doesn't matter.

D PMI's decision for each project

PMI doesn't rule on individual projects.

Prediction

Q4

Sharing a client's data would help the team analyze the system, but the data is confidential. What does the slide call this?

A **A practical dilemma**

The slide gives almost this exact example of disclosure versus confidentiality.

B A product management consideration

This concerns a confidentiality decision, not product management.

C A violation of tailoring

Tailoring isn't involved here.

D A contradiction between principles

The slide says the principles don't contradict each other.

Prediction Q5

Project management principles can have areas of overlap with general management principles.

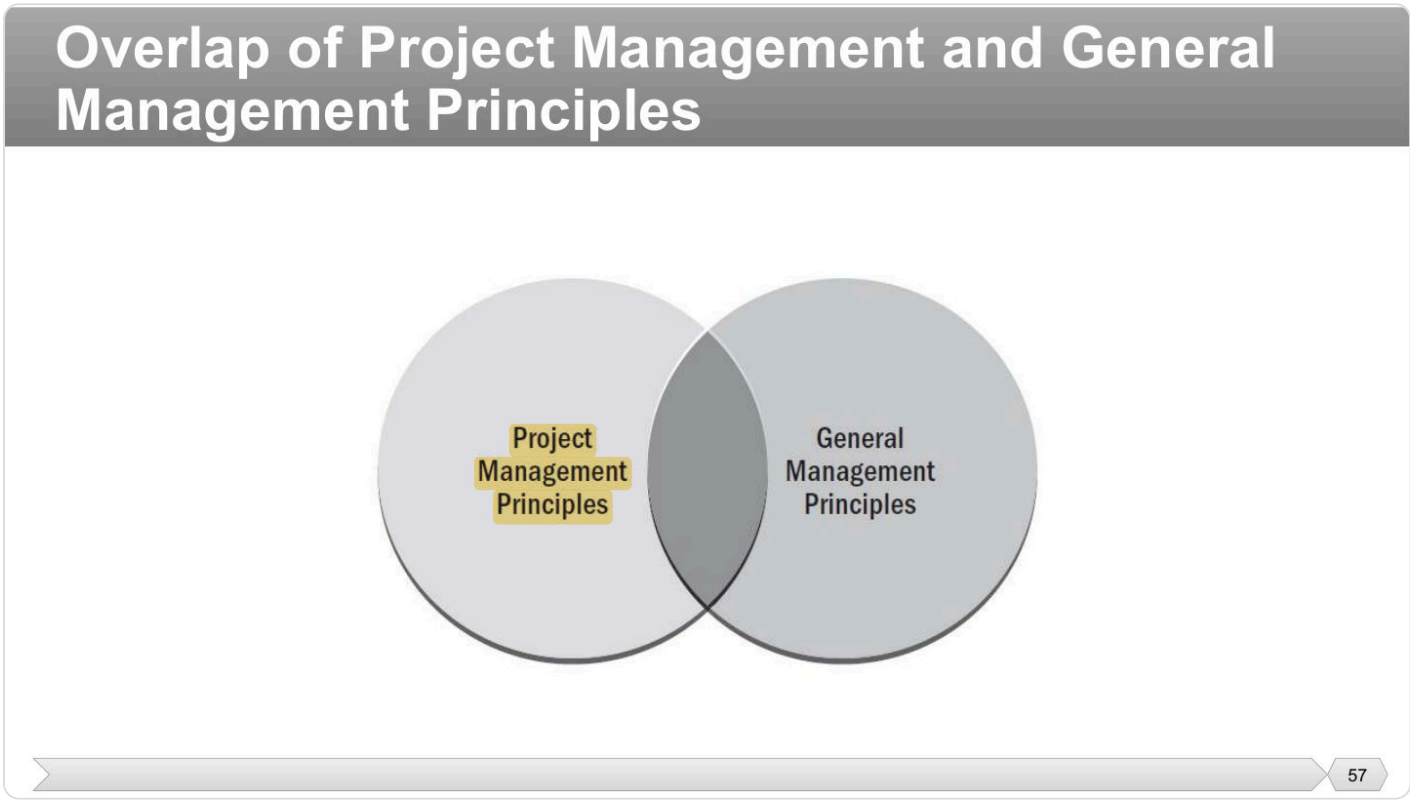
T True

The slide says so, and the next slide illustrates it.

F False

The statement is correct: it's the last point on the slide.

SLIDE 57 / 70 **Management Principles**



NOTES

1. Read the diagram as two circles sharing a middle. The overlap includes things like leading people, making decisions and delivering value, because anyone managing others needs these, whether running a project or a department.
2. The differences show up outside the overlap. A **PM** has a fixed end date, a temporary team borrowed from other managers and little formal authority, so works by influence. A **general manager** runs ongoing work with permanent staff and direct authority. Same management basics, but a very different daily reality.

TIPS & TRICKS

- Four-way comparison for the final exam: **Focus** (temporary vs. ongoing), **Skills** (cross-functional vs. deep in one area), **Team** (borrowed vs. permanent), **Authority** (influence vs. line authority).

EXAM ANGLE

Past exam · Final 251 · Q1.2 — Q1

What are the key distinctions between project management and general management, particularly concerning their respective focuses, skill sets, and approaches to managing teams and resources?
Answer: Focus: project management delivers temporary, unique work with a defined start, end and scope; general management runs the ongoing, repetitive operations of a function. **Skills**: a PM needs planning, scheduling, risk, stakeholder and integration skills across functions; a general manager needs depth in one function and long-term operational skills. **Teams and resources**: a PM leads a temporary, cross-functional team, often borrowed from functional managers, so works by influence and negotiation within a fixed budget and schedule; a general manager has permanent staff, line authority and an ongoing budget.

Prediction — Q2

What does the Venn diagram show?

A **Project management principles and general management principles partly overlap**

> Two circles sharing a middle means some principles apply to both.

B Project management is a part of operations

> The diagram compares principles, not departments.

C They have nothing in common

> The shared middle area contradicts this.

D They are identical

> Identical would mean complete overlap, but each also has its own area.

Prediction Q3

A manager runs a permanent finance department with long-term staff and direct authority over them. This is closer to:

A General management

> Ongoing work, permanent staff and line authority are its marks.

B Project management

> A PM has temporary work and usually a borrowed team.

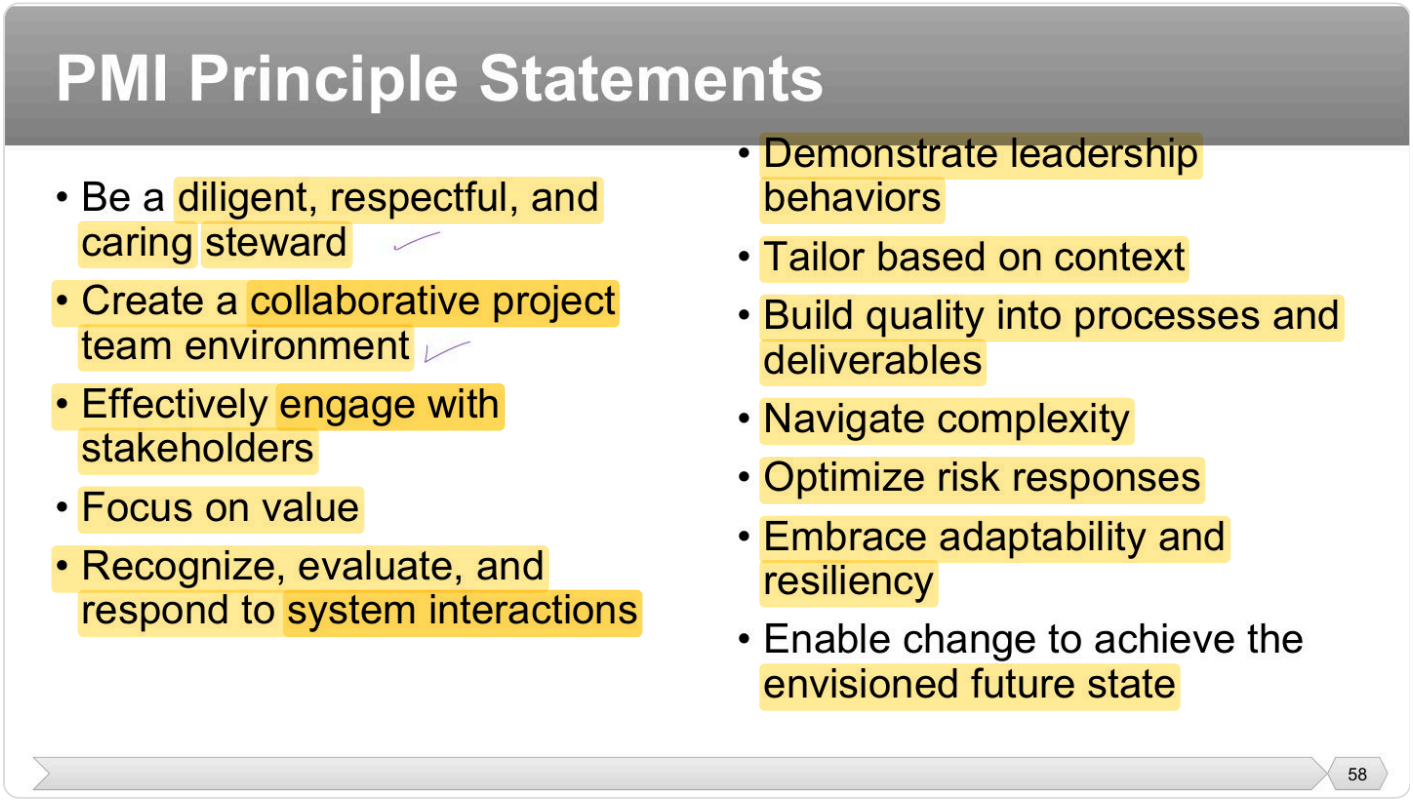
C Portfolio governance

> This oversees a portfolio, not one department's daily work.

D Program management

> A program coordinates related projects, which isn't what's described.

SLIDE 58 / 70 **PMI Principle Statements**



NOTES

1. These are the principles' official names, phrased as actions. Slide 21 gave you short labels, and exams may use either. **Diligent, respectful and caring** tells you what stewardship feels like in practice.
2. "Collaborative" means working together, and "environment" means the conditions that make it possible. The PM creates those conditions rather than ordering collaboration.

3. “Effectively engage” is more than informing. It means involving stakeholders in a useful way, with the right amount for each.
4. Three words, and the plainest statement: keep asking whether the work is still worth doing.
5. This is the longest name, but the verbs tell you the steps: see it (recognize), judge it (evaluate), act on it (respond).
6. “Behaviors” is the key word: leadership is what you do, not your job title. So anyone can demonstrate it.
7. “Based on context” is the reasoning. The second part here, **build quality into processes and deliverables**, reminds you that quality covers how you work as well as what you produce.
8. “Navigate” is a careful word choice: you can’t eliminate complexity, only find your way through it.
9. “Optimize” rather than “eliminate”: some risks are worth taking, and opportunities should be pursued. **Embrace adaptability and resiliency** then covers what happens when things go off-plan anyway.
10. “Envisioned future state” reminds you where the project’s change is meant to take people. Delivering a system isn’t enough, since people must actually move to the new way of working.

TIPS & TRICKS

- Each statement starts with a **verb**: Be, Create, Engage, Focus, Recognize, Demonstrate, Tailor, Build, Navigate, Optimize, Embrace, Enable. Memorize the verbs, and the rest follows.
- Match short to long: Stewardship → Be a steward, Team → Create, Stakeholders → Engage, Value → Focus, Systems → Recognize, Leadership → Demonstrate.

EXAM ANGLE

Prediction Q1

"Recognize, evaluate, and respond to system interactions" is the full statement of which principle?

A Risk

> Risk's statement is "Optimize risk responses".

B Systems thinking

> Slide 21's "Systems Thinking" is this principle's short name.

C Complexity

> Complexity's statement is "Navigate complexity".

D Tailoring

> Tailoring's statement is "Tailor based on context".

Prediction Q2

Which principle's full statement is "Be a diligent, respectful, and caring steward"?

A Stakeholders

> Stakeholders' statement is "Effectively engage with stakeholders".

B Team

> Team's statement is "Create a collaborative project team environment".

C Stewardship

> The statement contains the word "steward".

D Leadership

> Leadership's statement is "Demonstrate leadership behaviors".

Prediction

Q3

"Enable change to achieve the envisioned future state" matches which short name?

A Risk

> Risk's statement is "Optimize risk responses".

B Value

> Value's statement is "Focus on value".

C **Change**

> The statement uses the word directly.

D Adaptability and Resiliency

> This one's statement is "Embrace adaptability and resiliency".

Prediction

Q4

Which is an official PMI principle statement?

A Follow the same process on every project

> The real principle says to tailor based on context.

B Eliminate all project risks

> The real statement is "Optimize risk responses". Not all risks can or should be eliminated.

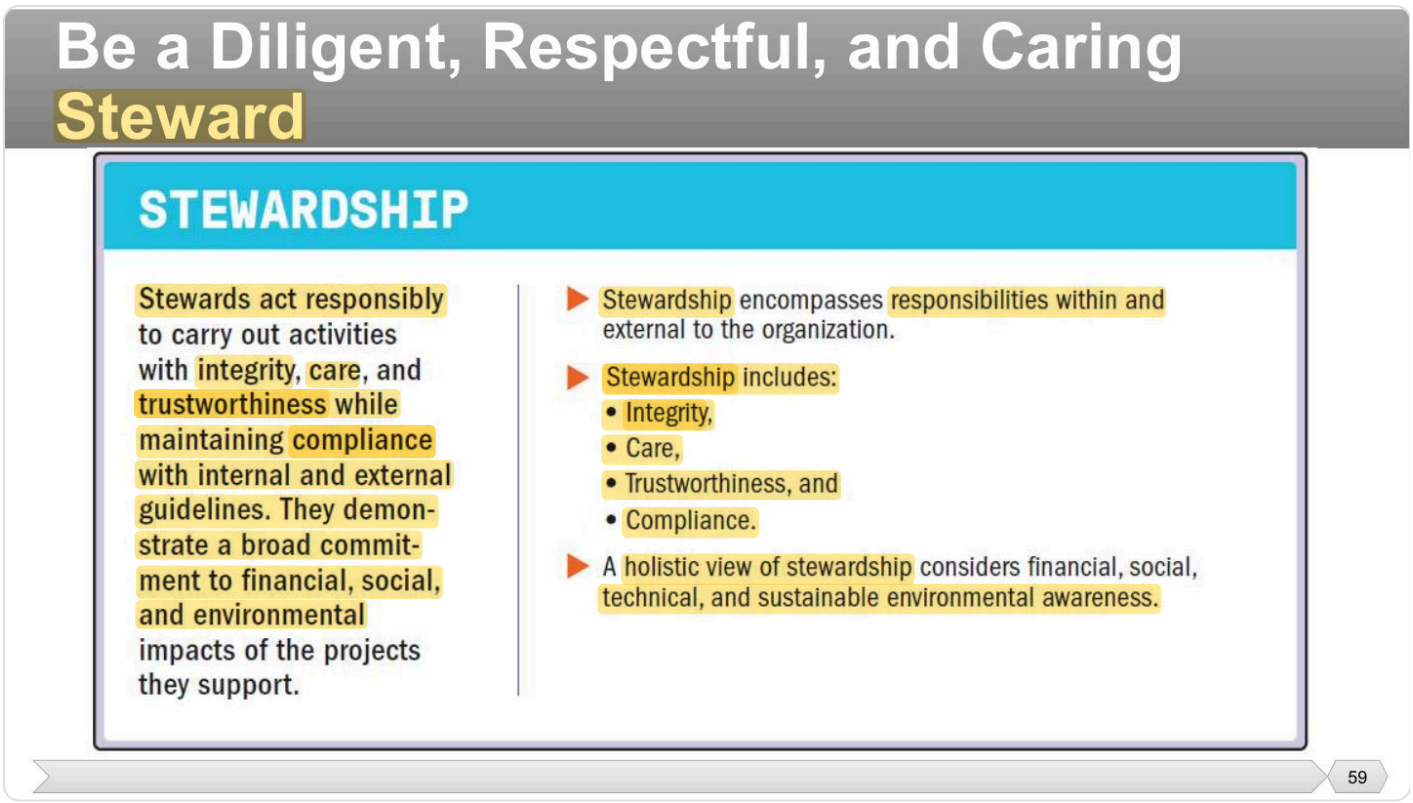
C Inspect quality at the end of the project

> The actual statement says to build it in, not check at the end.

D **Build quality into processes and deliverables**

> This is one of the 12 statements on the slide.

 Be a Diligent, Respectful, and Caring



NOTES

1. **Stewardship** means looking after something on someone else's behalf. The money, people and reputation aren't yours, so you treat them with care and within the rules. "Inside and outside the organization" means your duty reaches beyond your employer: a PM who saves money by dumping waste or ignoring a privacy law is failing this principle, even if the company benefits.

2. Four words, each answering something different. **Integrity**: are you honest and do you follow through? **Care**: do you look after people and things? **Trustworthiness**: can people rely on your word? **Compliance**: do you follow internal rules and external laws?

3. "Holistic" means you can't just look at the financial side. A project may be profitable yet harm a community or the environment. Stewards weigh **financial, social, technical and environmental** impacts together.

TIPS & TRICKS

- Stewardship includes **CrITiC**: Care, Integrity, Trustworthiness, Compliance.
- Think of **borrowing a friend's car**: you drive carefully, follow the law and return it in good condition, because it's not yours.

EXAM ANGLE

Prediction Q1

Which is NOT one of the four things stewardship includes?

A Compliance

> This is one of the four.

B Trustworthiness

> This is one of the four.

C **Profitability**

> The four are integrity, care, trustworthiness and compliance. Finance matters, but profitability isn't on that list.

D Integrity

> This is one of the four.

Prediction Q2

A PM refuses to use personal data in a way that breaks privacy law, even though it would save money. Which part of stewardship is this mainly?

A Trustworthiness only

> She may be trustworthy, but what's described is following the law.

B **Compliance with internal and external guidelines**

> Following outside laws is compliance, even at a cost.

C Tailoring

> She isn't adapting a method. She's following the law.

D Value delivery

> Her choice reduces savings, so it isn't about maximizing value.

Prediction

Q3

A holistic view of stewardship considers:

A Technical quality only

It includes technical matters, but goes much further.

B Financial, social, technical, and sustainable environmental awareness

The slide lists all four.

C Financial results only

That would be a narrow view, not a holistic one.

D The sponsor’s preferences only

Stewardship looks more widely, including outside the organization.

Prediction

Q4

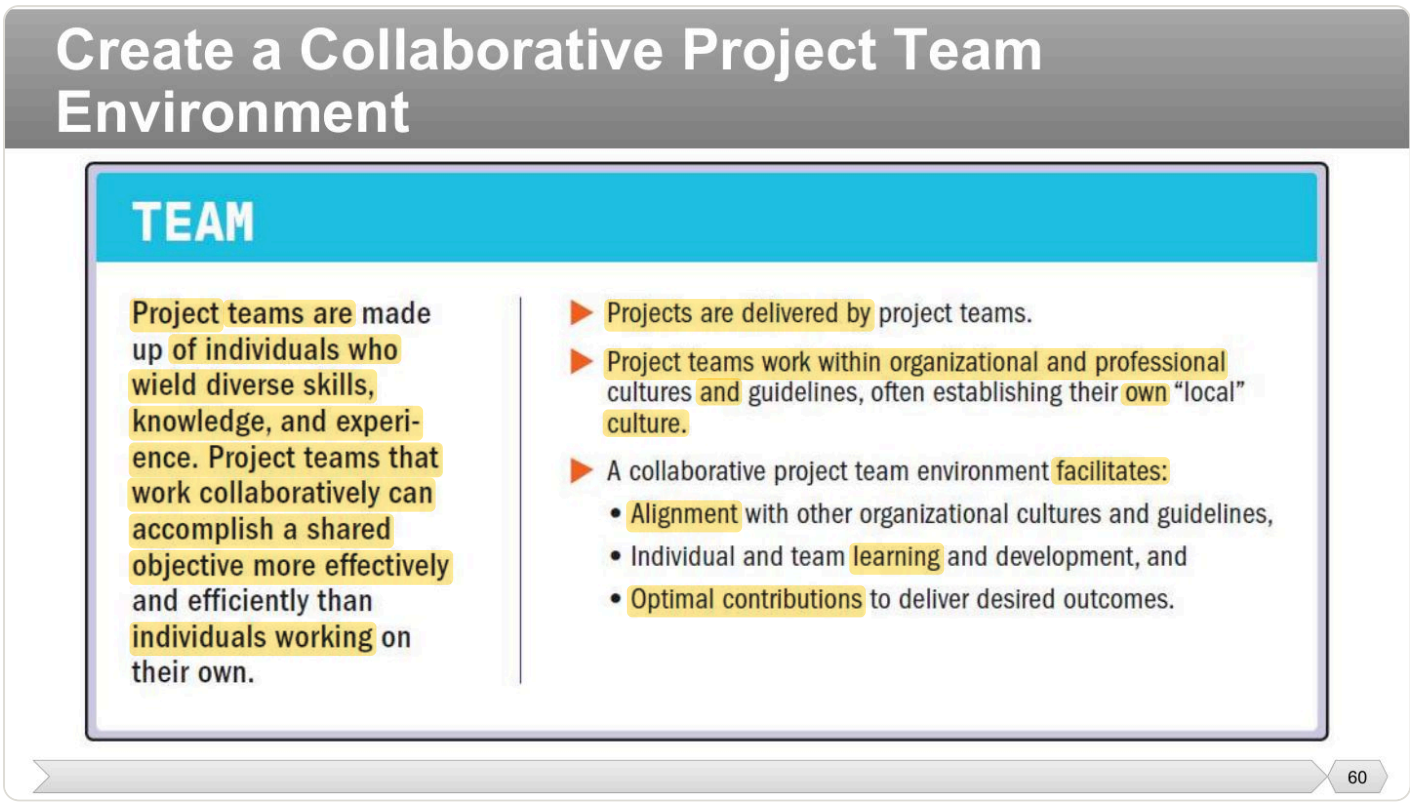
Stewardship covers responsibilities only within the organization.

T True

The card says “within and external to”, which is why environmental and social impacts count.

F False

It covers responsibilities within and external to the organization.



NOTES

1. The card's reasoning is that diverse people who cooperate beat individuals working alone. One person can't hold all the skills a modern system needs. But having skilled people isn't enough, since they can still get in each other's way unless they collaborate.

2. A team has its own **local culture**: how it runs meetings, how it gives feedback, what "done" means. This exists inside the organization's culture and the profession's norms, so a team's habits should fit with them rather than conflict.

3. The card gives three results of collaboration. **Alignment** with the wider organization's culture and guidelines keeps the team from drifting. **Learning**: people develop as individuals and as a team. **Optimal contributions**: each person's strengths actually get used, not wasted by confusion or conflict.

TIPS & TRICKS

- Three results: **gOAL** — Optimal contributions, Alignment, Learning.

EXAM ANGLE

Past exam · Final 242 · Q5.2 — Q1

How does fostering trust and managing conflict within a software project team contribute to improved collaboration and project success?

Answer: Trust lets members admit mistakes, share information and ask for help, so problems surface early and people cooperate instead of protecting themselves. Managed (healthy) conflict means ideas are debated openly and respectfully, which gives better technical decisions and avoids groupthink or disputes that turn personal. Together they lead to real commitment and collaboration, which drives quality and project success. Chapter 3 covers trust and conflict in depth; the principle introduces them.

Prediction — Q2

A team agrees on its own way of running stand-ups and reviewing code. What is this called on the card?

A Decentralized governance

> Governance concerns authority and rules at a higher level.

B Establishing its own “local” culture

> Teams often create their own culture within organizational and professional ones.

C Breaking organizational guidelines

> A local culture works within the guidelines.

D Tailoring the product

> This concerns the team’s habits, not the product.

Prediction

Q3

Which is NOT one of the things a collaborative team environment facilitates?

A Removing the need for organizational guidelines

> The card says it supports alignment with guidelines, which is the opposite.

B Optimal contributions to deliver desired outcomes

> This is on the card.

C Alignment with other organizational cultures

> This is on the card.

D Individual and team learning and development

> This is on the card.

Prediction

Q4

Project teams that work collaboratively can accomplish a shared objective more effectively and efficiently than individuals working on their own.

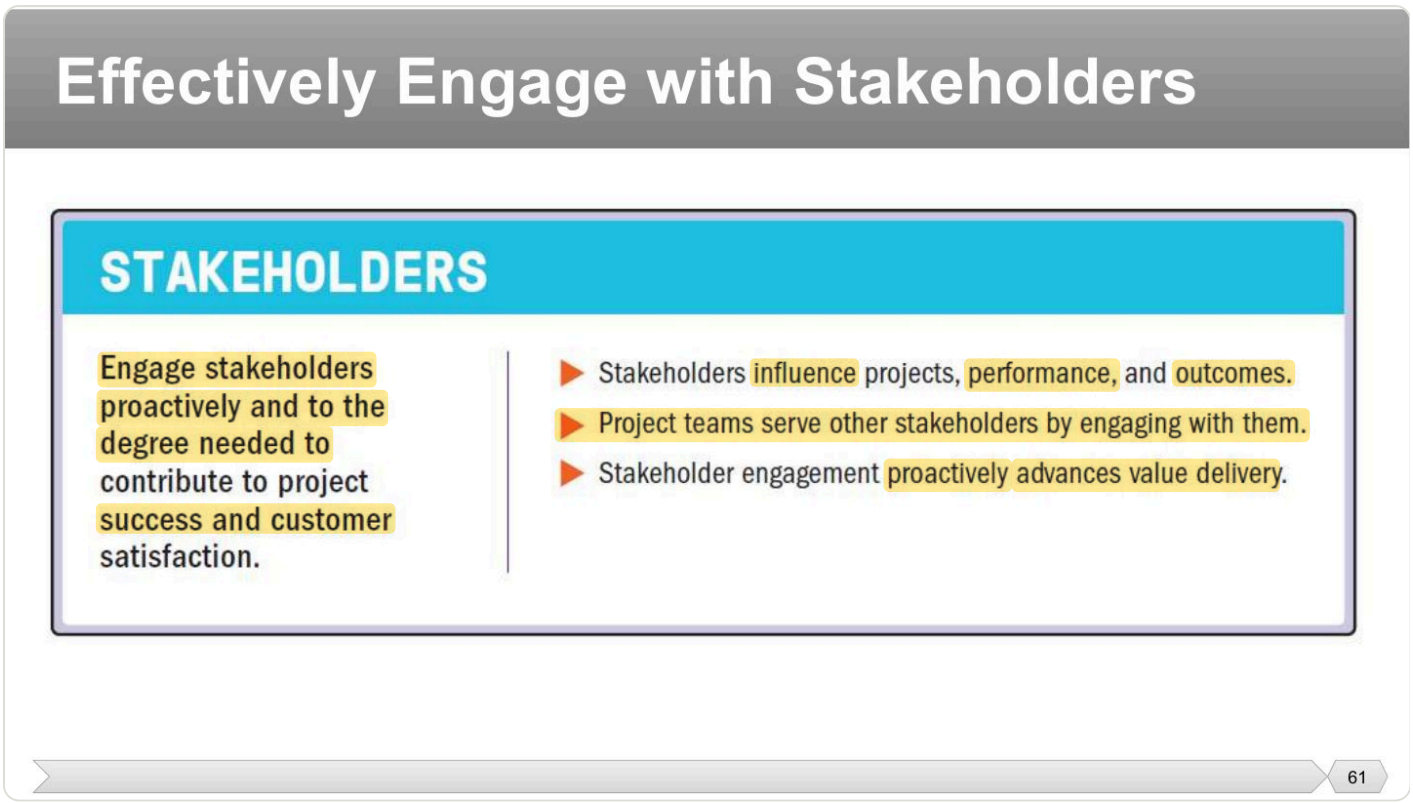
T True

> This is the card's statement of the principle.

F False

> The statement is correct: it's the card's main statement.

 Effectively Engage with Stakeholders



NOTES

1. **Proactively** means going to stakeholders before they come to you, as a complaint is much harder to handle than an early conversation. **To the degree needed** means not treating everyone the same: the sponsor needs detailed updates, while a distant department may need only a monthly note. Chapter 8 gives you a way of working this out.
2. The card gives a two-way picture: stakeholders **influence** the project (they can approve, block, fund or complain), and the team **serves** them by engaging. It's about a relationship, rather than the team simply pushing out reports.
3. Why does this **advance value**? Value is defined by stakeholders, so only they can tell you whether what you're building is worth it. Discovering in month two that they wanted something different is cheap. Discovering it at launch is very expensive.

TIPS & TRICKS

- **Early + right amount**: proactive, to the degree needed. An exam option saying "all stakeholders equally" is wrong.

EXAM ANGLE

Prediction Q1

A PM discovers a department head will be affected, and meets with them before any complaint arises. Which words from the card does this show?

A Engaging stakeholders proactively

> Going to them before problems arise is proactive engagement.

B Tailoring based on context

> Tailoring adapts methods. This is about reaching out to a person.

C Navigating complexity

> Nothing about this involves uncertainty or interactions between factors.

D Maintaining compliance

> No rule is being followed here.

Prediction Q2

All stakeholders should be engaged in the same way and to the same degree.

T True

> Engagement should match each stakeholder's needs and influence. Treating everyone equally wastes time and neglects those who matter most.

F False

> The card says to engage them "to the degree needed".

Prediction

Q3

According to the card, stakeholder engagement:

A Delays value delivery

> The card says the opposite.

B Proactively advances value delivery

> Stakeholders define value, so engaging them helps deliver it.

C Only matters for external customers

> Stakeholders include people inside and outside the organization.

D Should wait until deliverables are complete

> Proactive means early, not at the end.

Prediction

Q4

Stakeholders influence projects, performance, and outcomes.

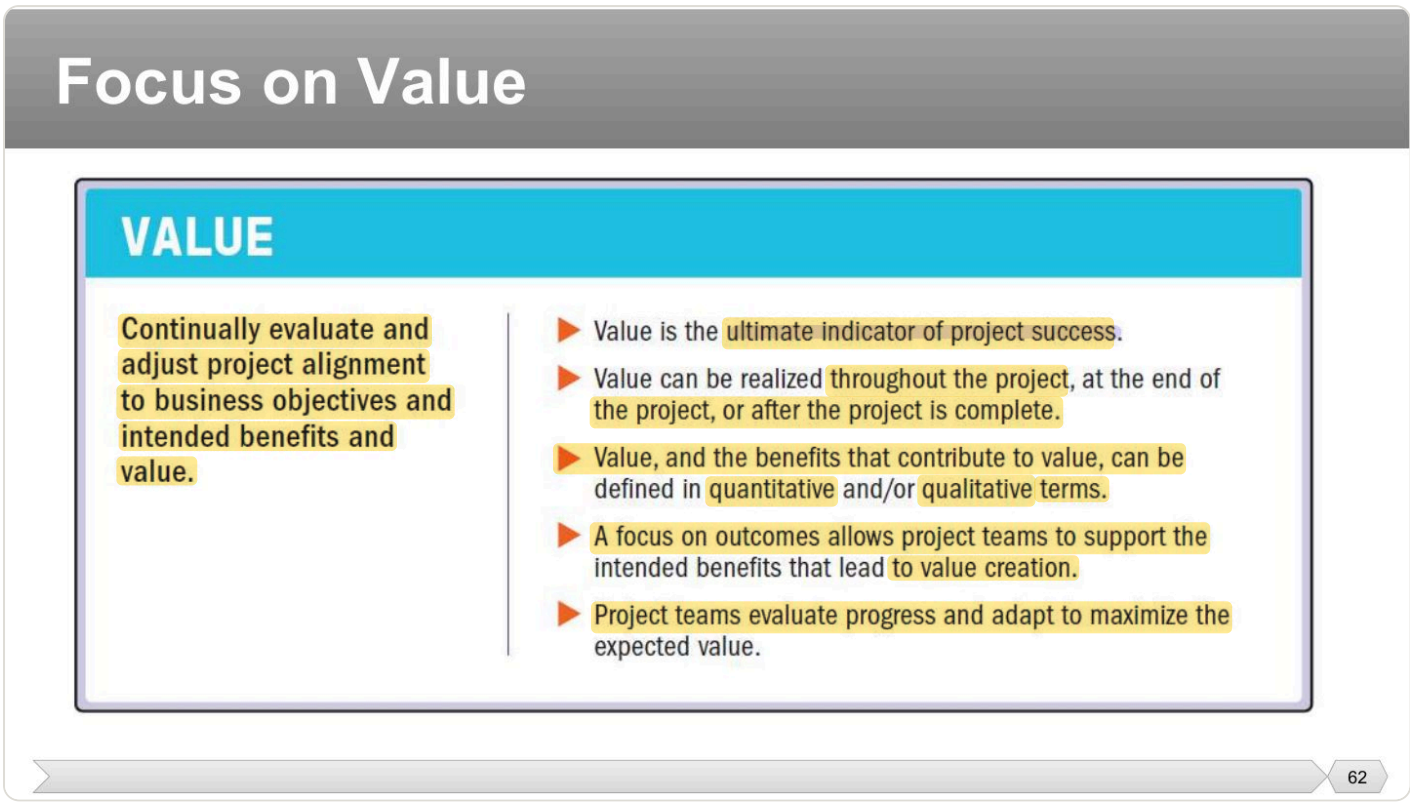
T True

> This is the first point on the card.

F False

> The statement is correct: it’s the card’s first point, and the reason engagement matters.

 Focus on Value



NOTES

1. **Continually** matters because the business can change while the project runs. A feature that was valuable in January may not be in June, if a competitor already shipped it. So you keep checking the project against what the business now needs, and adjust.

2. A project can be on time and on budget and still fail if nobody benefits. And a project running late can succeed if it delivers something worth having. That's why value, not schedule, is the **ultimate indicator**.

3. Value doesn't all arrive at the end. Agile teams deliver value in each release, while a new road only gives value once it's open, and a training program's value may come years later. The value can be **quantitative** (a 20% cost cut) or **qualitative** (customers trust you more), so not being able to put a number on it doesn't make it unreal.

TIPS & TRICKS

- Value quick check: **"If we finished this perfectly, would anyone be better off?"**
- Timing of value: **during, at the end, or after** the project. Measure: **quantitative and/or qualitative**.

EXAM ANGLE

Prediction Q1

What is the ultimate indicator of project success, according to the card?

A Staying on budget

> Being under budget doesn't guarantee useful results.

B Producing all deliverables

> Deliverables are means to outcomes and value.

C Value

> The card's wording: value is the ultimate indicator of project success.

D Finishing on schedule

> A project can be on time and yet deliver little worth having.

Prediction Q2

Value can be realized only at the end of a project.

T True

> The card lists three timings. Teams that release in increments deliver value along the way, for example.

F False

> It can be realized throughout the project, at its end, or after it's complete.

Prediction

Q3

A project's benefit is that "customers trust us more", with no number attached. According to the card, this is:

A A stewardship issue

> This is about how value is defined.

B Only an output

> Trust is a result, not an artifact.

C Not real value, since it can't be measured in money

> The card allows qualitative value.

D Acceptable, since value can be defined in quantitative and/or qualitative terms

> Value doesn't have to be numeric.

Prediction

Q4

Midway through, a team drops a feature because the market has changed, and builds one that users now need more. Which principle is this?

A Focus on value

> Continually evaluating and adjusting alignment with benefits and value is this principle.

B Build quality

> This isn't about the quality of what's produced.

C Navigate complexity

> The decision here is mainly about what's worth building.

D Enable change

> That's about helping people adopt the new state. Here the team is adjusting what it builds.

Prediction

Q5

What does a focus on outcomes allow project teams to do, according to the card?

A Avoid working with stakeholders

> The card doesn't suggest this.

B Support the intended benefits that lead to value creation

> This is the card's wording, and it matches the value chain on slide 34.

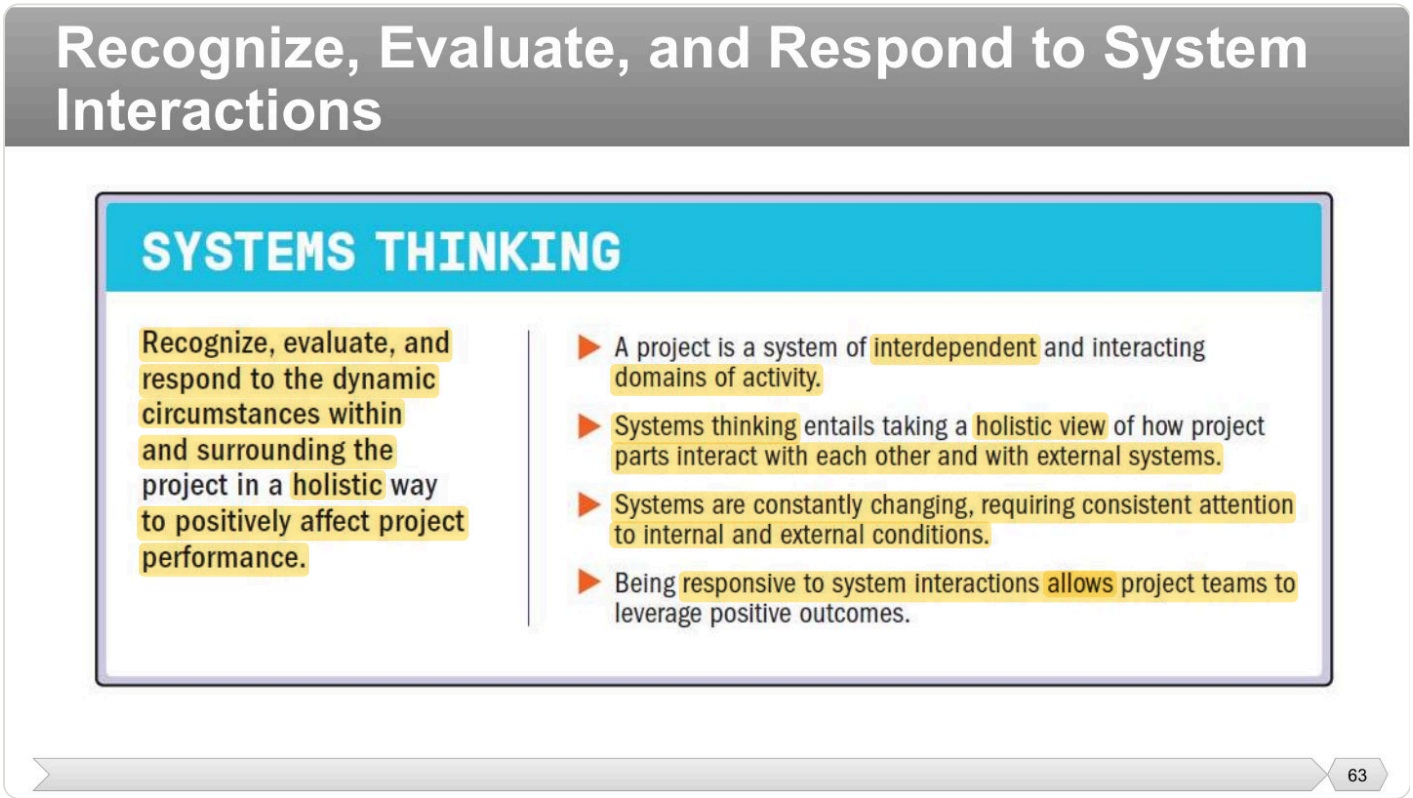
C Ignore deliverables

> Deliverables still produce outcomes.

D Skip the planning stage

> The card says nothing like this.

SLIDE 63 / 70 **Recognize, Evaluate, and Respond to System**



NOTES

1 **Holistic** means looking at the whole rather than a single part. "Dynamic" means these circumstances keep moving. So this isn't a single analysis at the start: it's a habit of watching the whole picture throughout.

2 A project's parts depend on each other. Change the database, and the payment module, the reports and the training materials might all be affected. **Interdependent** means you can't assume a change stays where you made it. Systems also reach outside: a new law or partner's API can affect your project. Spotting these interactions early lets you **turn them to your advantage**, not just avoid harm: a reusable service built by one team can save others months.

TIPS & TRICKS

- Think of a **mobile hanging over a baby's crib**: touch one piece, and everything moves.
- Scenario signal: when a question describes **one change affecting other parts**, the answer is usually systems thinking.

EXAM ANGLE

Past exam · Midterm 261 · MCQ

Q1

A team discovers that changing the database will affect the payment system and the registration system. Which principle is most directly demonstrated?

A Recognize, Evaluate, and Respond to System Interactions

A project is a system of interdependent parts; seeing how one change ripples into others is systems thinking.

B Build Quality into Processes and Deliverables

Quality is about meeting requirements and acceptance criteria. The point here is one change affecting other parts.

C Demonstrate Leadership Behaviors

Nobody's leadership is being described in this scenario.

D Focus on Value

The team isn't judging what is most worthwhile. It's tracing effects across parts of the system.

Prediction

Q2

Systems need attention only once, during project planning.

T True

Since systems keep changing, attention must be continuous, not limited to planning.

F False

The card says systems are constantly changing, so they require consistent attention.

Prediction

Q3

How does the card describe a project?

A A group of unrelated activities

> This could describe a portfolio. A project's parts are interrelated.

B A sequence of independent tasks

> The parts depend on each other.

C A system of interdependent and interacting domains of activity

> This is the card's wording.

D A single deliverable

> A project has many parts, not one deliverable.

Prediction

Q4

A team notices another team's new service could also solve its own problem, and reuses it. What does the card call this?

A Scope creep

> Reusing existing work doesn't add requirements.

B Risk avoidance

> This is making use of an opportunity, not avoiding a threat.

C Change fatigue

> Nobody's overloaded by change here.

D Being responsive to system interactions to leverage positive outcomes

> Responding to interactions isn't only about avoiding damage. It can also bring gains.

Prediction Q5

Systems thinking looks at how project parts interact with each other and with:

A External systems

> The card says “with each other and with external systems”.

B Only the project plan

> It goes well beyond the plan.

C Only the team’s tools

> It looks at the whole system.

D Only the budget

> It covers far more than money.

SLIDE 64 / 70 **Demonstrate Leadership Behaviors**



NOTES

1 **Adapt** is the key word: there’s no one correct style. A new graduate may need clear direction, while a senior engineer may need space. A leader who treats them identically will fail one of them. The behaviors are chosen to fit individual and team needs.

2. Leadership and **authority** are different things. Authority is the formal right to give orders, and leadership is getting people to follow willingly. A junior developer who organizes everyone during an outage is leading with no authority, and a manager with full authority who's ignored by the team isn't leading.

3. Effective leaders **adapt** to the situation (a crisis needs decisiveness, and brainstorming needs openness). They also recognize that **people are motivated differently**: recognition for one, learning for another, flexibility for a third. Finally, they lead by example on **honesty, integrity and ethics**, since a team will copy what it sees.

TIPS & TRICKS

- **Authority is given. Leadership is earned.** Anyone can lead, whatever their title.

EXAM ANGLE

Prediction Q1

Only the project manager can demonstrate leadership behaviors.

T True

Leadership is different from authority, so a junior developer can lead without any formal power.

F False

The card says any project team member can demonstrate them.

Prediction Q2

Leadership is the same thing as authority.

T True

Authority is a formal right. Leadership is getting people to follow, which can happen with or without it.

F False

The card says leadership is different from authority.

Prediction Q3

A leader gives detailed guidance to a new graduate and free rein to a senior engineer. Which point on the card does this show?

A This is inconsistent, and leaders must treat everyone identically

The card says the opposite.

B Effective leaders adapt their style to the situation

Style changes with who and what you're dealing with.

C Tailoring the development approach

Tailoring concerns project methods, not individual style.

D Leadership is the same as authority

This isn't about authority at all.

Prediction

Q4

A PM rewards one person with public recognition and another with chances to learn. What does this show?

A Unfair treatment

> Adapting to what motivates people isn't unfair.

B Recognizing differences in motivation among team members

> The card says effective leaders recognize these differences.

C Maintaining governance

> Governance enforces standards, not motivation.

D Change fatigue

> Nothing here concerns too much change.

Prediction

Q5

A PM asks the team to report honestly, and she herself openly reports her own errors. Which point does this show?

A Leaders demonstrate desired behavior in honesty, integrity and ethical conduct

> Setting the example is what the card asks for.

B Effective leaders adapt their style

> She isn't changing style here.

C Leadership is different from authority

> True in general, but the scenario illustrates setting an example.

D Any team member can lead

> True, but the scenario is about setting an example.

Prediction

Q6

Effective leadership promotes project success and contributes to positive project outcomes.

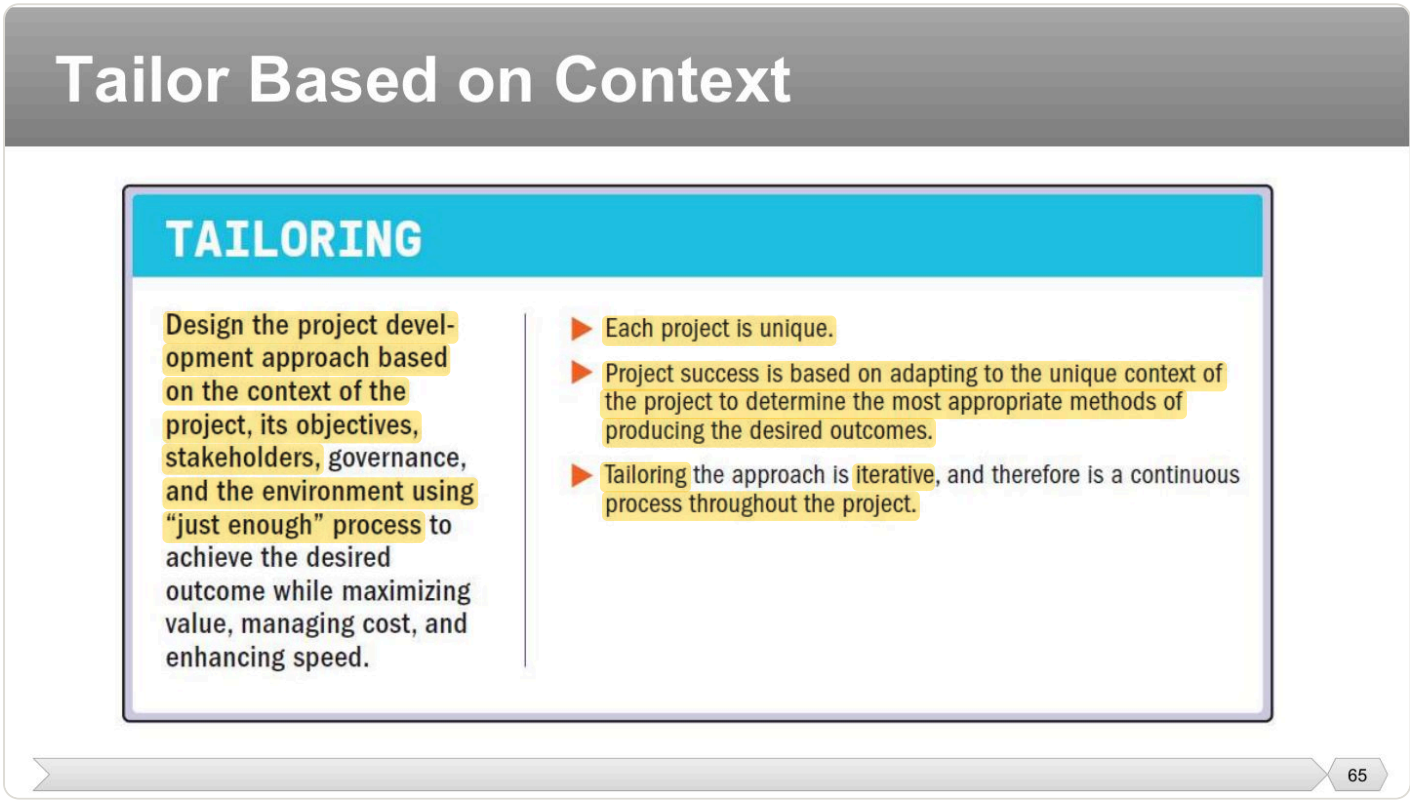
T **True**

> This is the card's first point.

F False

> The statement is correct: it's the first point on the card.

SLIDE 65 / 70 **Tailor Based on Context**



NOTES

1. **Tailoring** starts from one fact: every project is different. A method that works for a hospital system might crush a two-person startup, while the startup's informality could be dangerous in the hospital. So you choose the approach after looking at the project's objectives, stakeholders and environment.
2. **"Just enough"** is the balance point. Too little process means chaos and rework. Too much means forms nobody reads and slowed-down delivery. The test is whether a given step helps achieve the outcome while maximizing value, managing cost and enhancing speed. If it doesn't, cut it.
3. **Iterative** means you don't decide once and for all. If a project's daily stand-up has become a waste of time, or if a new regulator requires more documents, you adjust. Tailoring continues throughout, which is why an exam option describing it as "one-time at initiation" is false.

TIPS & TRICKS

- **Goldilocks process**: not too much, not too little, "just enough".

- Tailoring changes **how you work**, not what the client asked for.

EXAM ANGLE

Prediction Q1

Tailoring is a one-time activity performed when the project is initiated.

T True

> The card calls tailoring iterative and continuous. Teams adjust as they learn, rather than deciding once at the start.

F False

> Tailoring is iterative and continuous throughout the project.

Prediction Q2

What does “just enough” process mean on this card?

A The minimum paperwork the team feels like doing

> It’s measured against achieving the outcome, not against how the team feels.

B Using no process at all

> “Just enough” still means some process.

C Enough process to achieve the outcome while maximizing value, managing cost, and enhancing speed

> It’s a balance: no more process than is useful, and no less.

D Using every process in the PMBOK

> That is the opposite of tailoring.

Prediction

Q3

A team working on a regulated medical system keeps formal sign-offs, while a startup team skips them. Both succeed. What does this show?

A **Project success is based on adapting to the project's unique context**

Each chose the approach that fit its context.

B One of the teams must be breaking the standard

The standard expects methods to differ.

C Formal sign-offs are always wasteful

They're appropriate in a regulated context.

D Startups don't need any process

They need just enough for their context, not necessarily none.

Prediction

Q4

What should the development approach be designed around, according to the card?

A The method used by competitors

Their context isn't your context.

B Whichever method the PM has used most recently

Familiarity isn't the basis the card names.

C **The context of the project, its objectives, stakeholders, governance, and environment**

These are the things the card lists.

D The cheapest available tool

Cost is one consideration, but the card asks for much more.

Prediction Q5

Each project is unique.

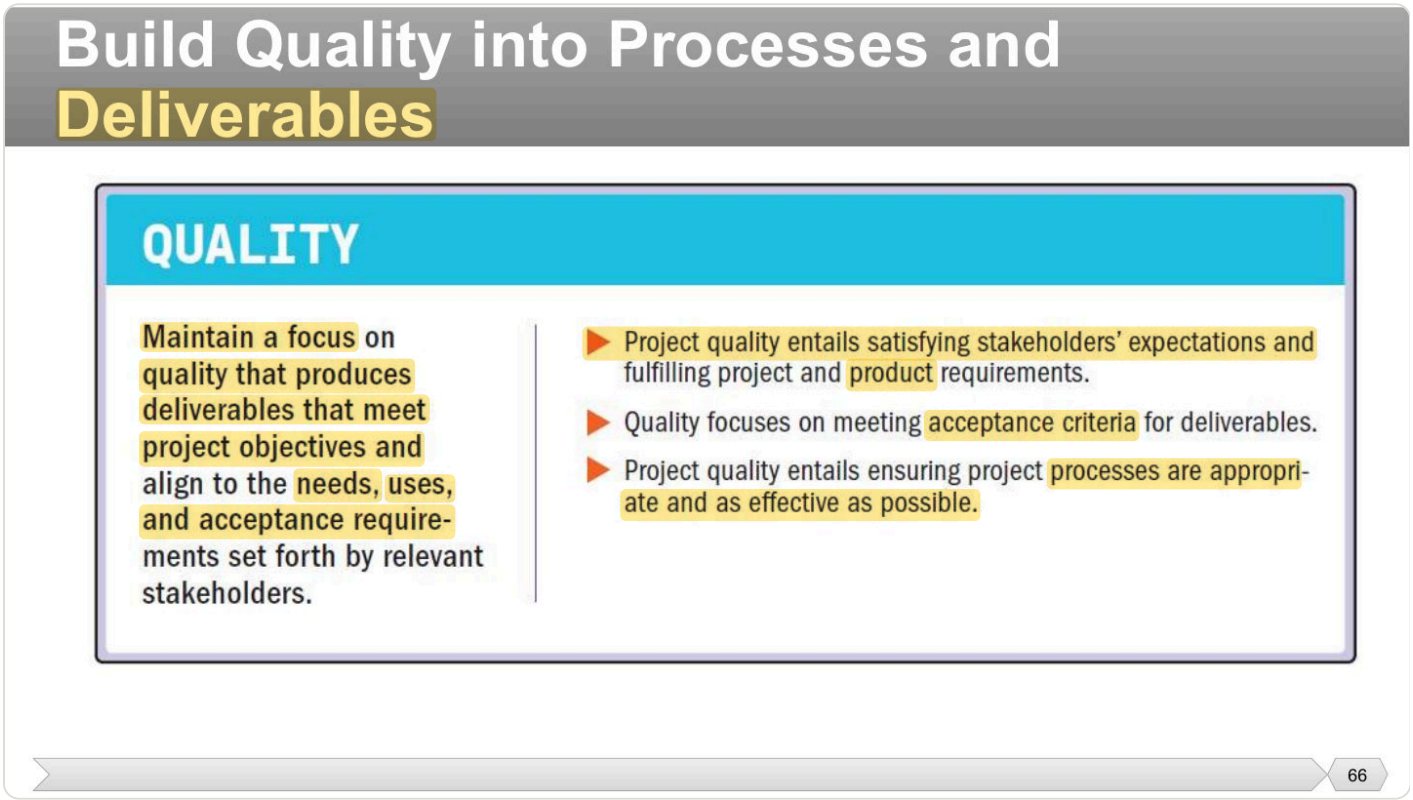
T True

This is the first point on the card, and the reason tailoring is needed.

F False

The statement is correct: it's the card's first point.

SLIDE 66 / 70 **Build Quality into Processes and**



NOTES

1. **Build into** is the important phrase. Quality isn't something you inspect at the end. Finding a requirement misunderstanding after launch might cost 100 times more than catching it in a review. So quality activities run from the start and match what stakeholders actually need and use.
2. Quality is measured against **acceptance criteria**, which are the conditions agreed in advance for accepting a deliverable. Example: "Search returns results within 2 seconds for 95% of queries." These matter since "high quality" without criteria is only an opinion. Note that a feature can be beautifully engineered yet fail because it doesn't meet the criteria.
3. Quality isn't only about the **product**: a good **process** tends to produce a good product repeatedly. So asking whether your code review or testing process is "appropriate and as effective as possible" is also part of quality. Chapter 7 calls this quality assurance (process) versus quality control (product).

TIPS & TRICKS

- **Product + Process**: quality covers both what you make and how you make it.
- Compare with slide 21: “embedded from the start”, not “checked at the end”.

EXAM ANGLE

Prediction Q1

Project quality focuses on meeting which of the following for deliverables?

A Acceptance criteria

> The card says quality focuses on meeting acceptance criteria for deliverables.

B The team’s personal preferences

> Quality is judged against agreed criteria, not preferences.

C The shortest possible schedule

> Speed isn’t what quality measures.

D The lowest possible cost

> Cost matters, but it isn’t what quality measures.

Prediction Q2

Quality applies only to deliverables, not to the processes used to create them.

T True

> The principle’s name says “processes and deliverables”. Both count.

F False

> The card includes ensuring project processes are appropriate and as effective as possible.

Prediction

Q3

A team finds a requirement misunderstanding in a design review, rather than after launch. Which idea does this show?

A **Building quality in, rather than checking only at the end**

Catching it early is what building quality into the process achieves.

B Change fatigue

Nothing here concerns too much change.

C Risk appetite

Risk appetite is how much risk an organization accepts.

D Tailoring

Tailoring adapts methods, whereas this is about finding the defect early.

Prediction

Q4

What does project quality entail, according to the card?

A Testing only at the end

The principle asks you to build quality in throughout.

B **Satisfying stakeholders' expectations and fulfilling project and product requirements**

This is the card's wording.

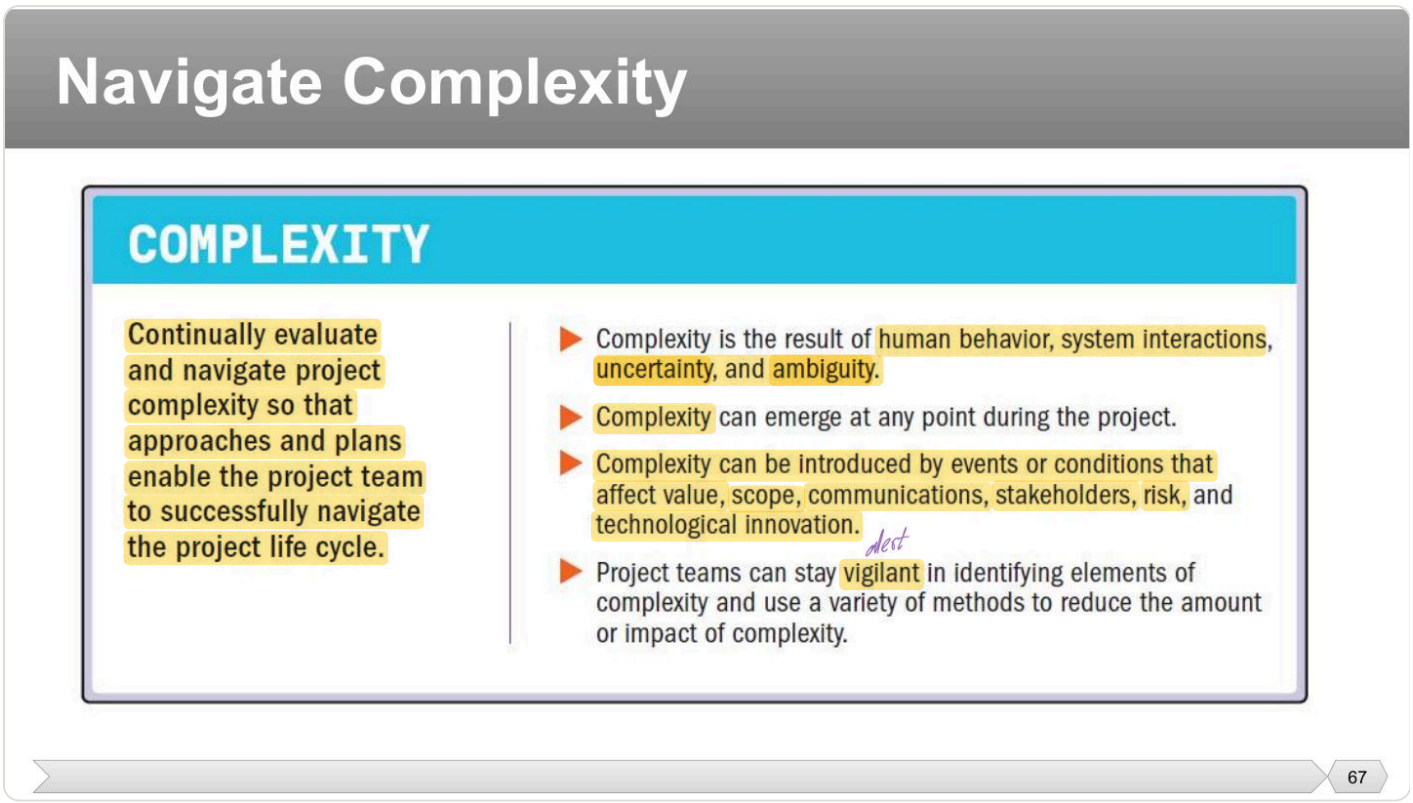
C Removing all documentation

Nothing on the card says this.

D Exceeding every requirement regardless of cost

Quality is about meeting needs, not exceeding everything.

 Navigate Complexity



NOTES

1. **Navigate** means complexity isn't a one-time problem to solve. You keep checking where you are, like sailing: the wind changes, and you adjust. The goal is that your plans still let the team get through the project successfully.

2. The four sources are worth understanding separately. **Human behavior**: people act unpredictably, and departments have competing interests. **System interactions**: small changes have surprising effects. **Uncertainty**: you don't know what will happen. **Ambiguity**: you don't even know what things mean, as in unclear requirements.

3. **At any point** means a project can look simple for months, then become complex when a new stakeholder or a new technology arrives. The card lists triggers: events affecting value, scope, communications, stakeholders, risk and technological innovation. Teams stay **vigilant** and use various methods to reduce complexity or its impact, like breaking the work into smaller pieces, or building prototypes.

TIPS & TRICKS

- Sources: **HAUIS** — Human behavior, Ambiguity, Uncertainty, System interactions.
- **Uncertainty** = don't know what will happen. **Ambiguity** = don't know what it means.

EXAM ANGLE

Prediction Q1

Which of the following is NOT a source of complexity listed on the card?

A System interactions

> This is on the card.

B Ambiguity

> This is on the card.

C Budget size

> The card lists human behavior, system interactions, uncertainty and ambiguity.

D Human behavior

> This is on the card.

Prediction Q2

Complexity can only emerge during the planning stage of a project.

T True

> The card says “at any point”, which is why teams must stay alert throughout.

F False

> It can emerge at any point during the project.

Prediction

Q3

Requirements are written so vaguely that different teams understand them differently. Which source of complexity is this?

A System interactions

> No parts are interacting in this example.

B Human behavior

> People are involved, but the cause is the unclear wording.

C **Ambiguity**

> The meaning itself is unclear, which is ambiguity.

D Uncertainty

> Uncertainty is not knowing what will happen. Here it's about what things mean.

Prediction

Q4

A team splits a large, confusing project into smaller prototypes to learn as it goes. What is this an example of?

A Eliminating all complexity

> You can reduce it, but not get rid of it.

B **Using methods to reduce the amount or impact of complexity**

> The card says teams use a variety of methods to do this.

C Scope reduction

> The goal hasn't been reduced, only broken into parts.

D Risk appetite

> Nothing here concerns how much risk the organization accepts.

Prediction Q5

Which of these can introduce complexity, according to the card?

A Only technological innovation

> It's one of six items on the list.

B Only changes to the budget

> Budget isn't even on the list.

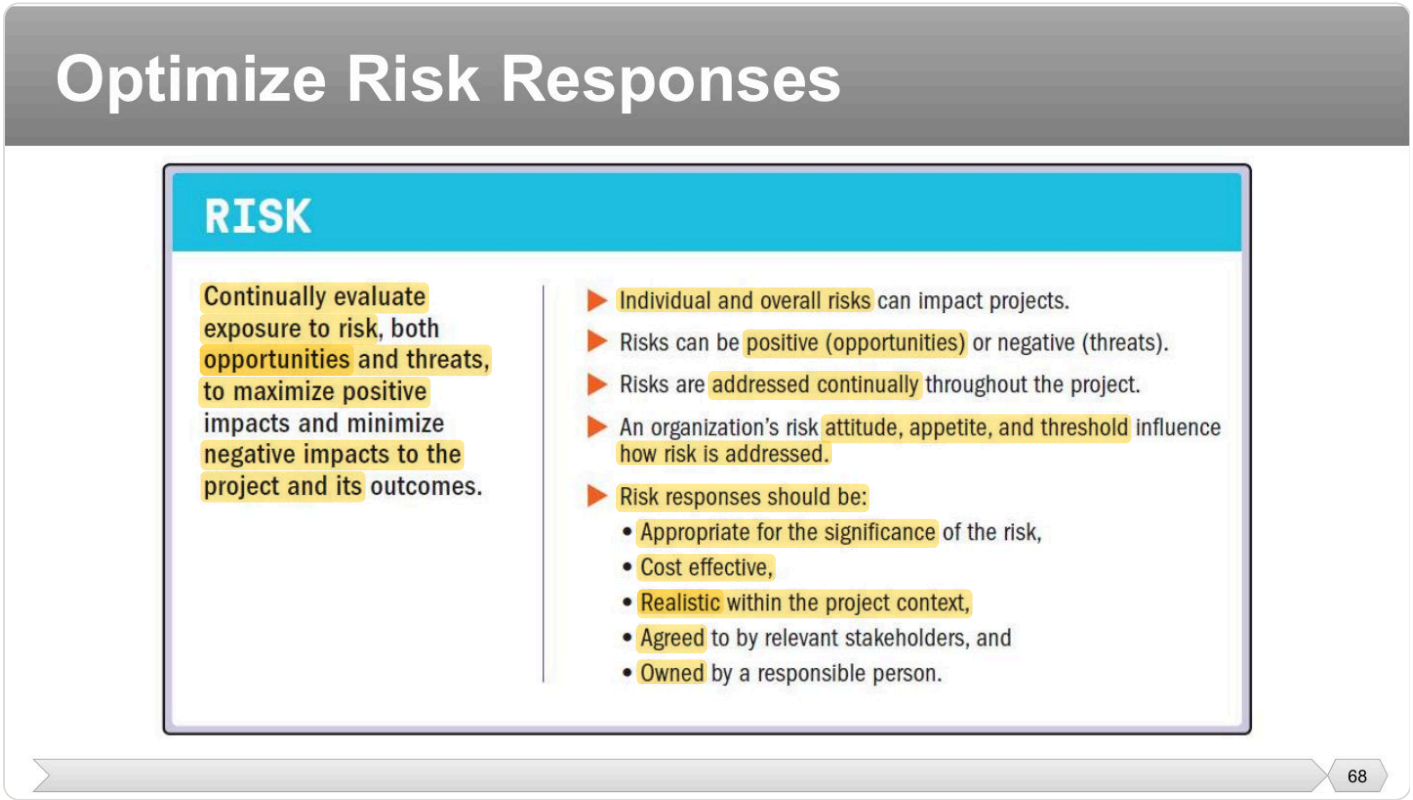
C Only external laws

> Laws aren't specifically on this list, and it's much wider.

D **Events affecting value, scope, communications, stakeholders, risk, or technological innovation**

> This is the card's list.

SLIDE 68 / 70 **Optimize Risk Responses**



NOTES

1. Most people think of risk as only bad. PMBOK's definition includes **opportunities**: a vendor might deliver early, which you could use to your advantage. **Exposure** means how much is at stake. The goal is to get the best overall result, which means maximizing the good as well as minimizing the bad.

2 Risks exist at two levels. An individual risk might be one supplier failing, while overall risk is how risky the whole project is. And an organization's **attitude, appetite and threshold** shape the response: a hospital will accept far less risk than a startup. They're **addressed continually**, since new risks appear throughout the project.

3 Five tests for a good response. **Appropriate**: don't spend a fortune on a small risk. **Cost-effective**: the response shouldn't cost more than the damage. **Realistic**: can the team actually do it? **Agreed**: do stakeholders accept it? **Owned**: who's responsible? A risk that everyone owns is a risk nobody handles. Chapter 5 covers the strategies themselves.

TIPS & TRICKS

- Response tests: **mACAROn** — Appropriate, Cost-effective, Agreed, Realistic, Owned.
- **Risk ≠ always bad.** Opportunities count too.
- "Optimize", not "eliminate": an exam answer saying "remove all risk" is wrong.

EXAM ANGLE

Past exam · Final 242 · Q2.5 — Q1

As the project manager for the smart solar panel system, you're expected to manage risks proactively throughout the 12-month development cycle. Describe two techniques you would use during the planning phase to identify and document project risks. Explain how a Risk Assessment Matrix helps in making informed decisions about which risks need immediate action.

Answer: Brainstorming with engineers, hardware specialists and developers, and expert interviews / Delphi with people who have done regulatory approvals, both recorded in a risk register (risk, cause, owner, response). A checklist from past projects also works. The Risk Assessment Matrix plots each risk's probability against its impact; the score ranks the risks, so high-probability, high-impact (red) risks get immediate responses and owners, medium ones are planned for, and low ones are just monitored. Detailed in Chapter 5; the principle sets the expectation.

Prediction — Q2

In project management, risks are always negative.

T True

> The card includes both. A risk of a supplier delivering early is an opportunity you could use.

F False

> Risks can be positive (opportunities) or negative (threats).

Prediction — Q3

A team spends $50,000 protecting against a risk that could cost at most $2,000. Which response test does this fail?

A Agreed to by relevant stakeholders

> Nothing says stakeholders disagreed.

B Cost effective

> The response costs far more than the damage it protects against.

C Owned by a responsible person

> Nothing here concerns who owns it.

D Realistic within the project context

> It may be possible to do it. The problem is that it isn't worth it.

Prediction

Q4

A risk response is agreed, but nobody is named to carry it out. Which test does this fail?

A Appropriate for the significance

> Its significance isn't in question.

B Cost effective

> Its cost isn't the issue.

C Realistic

> It could be realistic, but no one is assigned.

D Owned by a responsible person

> Every response needs a named owner.

Prediction

Q5

A team's plan to "hire ten experts next week" for a small project with no budget fails which test?

A Agreed by stakeholders

> The issue here is feasibility rather than agreement.

B Realistic within the project context

> The response can't be achieved given the project's situation.

C Owned

> Ownership isn't the problem described.

D Appropriate for the significance

> The main problem is that it can't be done.

Prediction

Q6

A team has a response plan that the client strongly objects to. Which test does this fail?

A Appropriate for the significance

> Its fit to the risk isn't what's being objected to here.

B Agreed to by relevant stakeholders

> Relevant stakeholders must accept the response.

C Owned by a responsible person

> Nothing here says it has no owner.

D Cost effective

> Nothing here mentions the cost.

Prediction

Q7

Hiring a full security team to guard against a minor typo in a help page fails which test?

A Appropriate for the significance of the risk

> A response should match how much the risk matters.

B Agreed to by relevant stakeholders

> Agreement isn't the issue.

C Realistic within the project context

> It might be doable, but it's out of proportion.

D Owned by a responsible person

> Ownership isn't the issue.

Prediction

Q8

A hospital accepts far less risk than a startup does. What explains this, according to the card?

A Hospitals have no risks

> They have many, and they treat them cautiously.

B **An organization’s risk attitude, appetite, and threshold influence how risk is addressed**

> Different organizations accept different levels of risk.

C Startups have no stakeholders

> They do.

D Risks are only addressed in startups

> All organizations address risks.

Prediction

Q9

When are risks addressed, according to the card?

A Only during planning

> Risks keep appearing after planning.

B Only when a problem occurs

> That would be reacting rather than managing risk.

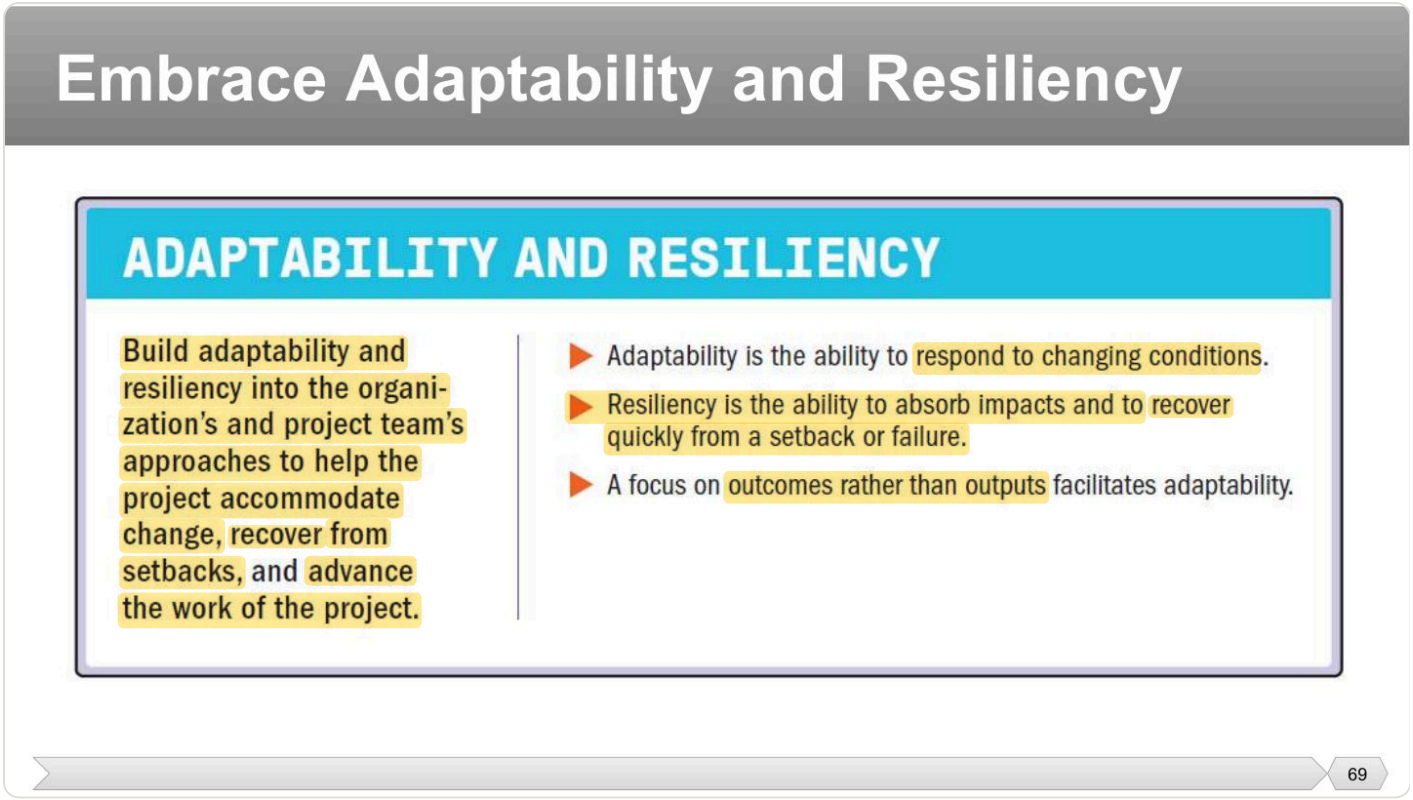
C **Continually throughout the project**

> New risks can appear at any time, so it can’t be a one-time task.

D Only at the end, in lessons learned

> By then it’s too late to respond.

 Embrace Adaptability and Resiliency



NOTES

1. The card says to **build** these in, so it's something you prepare ahead of time, not something you hope for. Keeping backups, cross-training staff and working in small increments all make a project able to handle shocks.

2. **Adaptability** works before and during a change: it's adjusting to new conditions. A new law requires different data storage, so you change the design. Note the card's last point: focusing on **outcomes rather than outputs** helps, since if you care about the goal more than the original feature list, you can change your route to it.

3. **Resiliency** works after a hit: it's absorbing the blow and getting back up. A server fails, and the team restores from backup and resumes the same day. Exams test the difference between them: changed conditions call for adapting, and setbacks call for recovering.

TIPS & TRICKS

- **Adaptability = bend. Resiliency = bounce back.** A tree bends in wind (adapts) and regrows after a storm (recovers).

EXAM ANGLE

Prediction Q1

A critical server failure takes the test environment down, and the team restores it from backups and resumes work within a day. Which quality does this show?

A Stewardship

> Stewardship concerns responsible and ethical behavior.

B Adaptability

> Adaptability responds to changed conditions. Here the team recovers from a failure and carries on as before.

C Tailoring

> Tailoring adapts methods to the context, which isn't what's happening here.

D **Resiliency**

> Absorbing an impact and recovering quickly from a setback is resiliency.

Prediction Q2

A new regulation means the team must change its data-storage design midway through. It redesigns and continues. Which quality does this show?

A Stewardship

> Compliance may be stewardship, but the action described is changing the plan in response.

B Resiliency

> Nothing failed here, and there was no setback to recover from. Conditions changed.

C **Adaptability**

> Responding to changing conditions is adaptability.

D Quality

> The design change isn't about quality.

Prediction

Q3

Which helps a project adapt, according to the card?

A Longer planning with no changes allowed

> This is the opposite of adaptability.

B A fixed list of outputs that can’t change

> This makes adapting harder.

C A focus on outcomes rather than outputs

> If the goal matters more than the original feature list, you can change the route to it.

D Avoiding all contact with stakeholders

> This would make it harder to know what needs to change.

Prediction

Q4

Resiliency is the ability to absorb impacts and to recover quickly from a setback or failure.

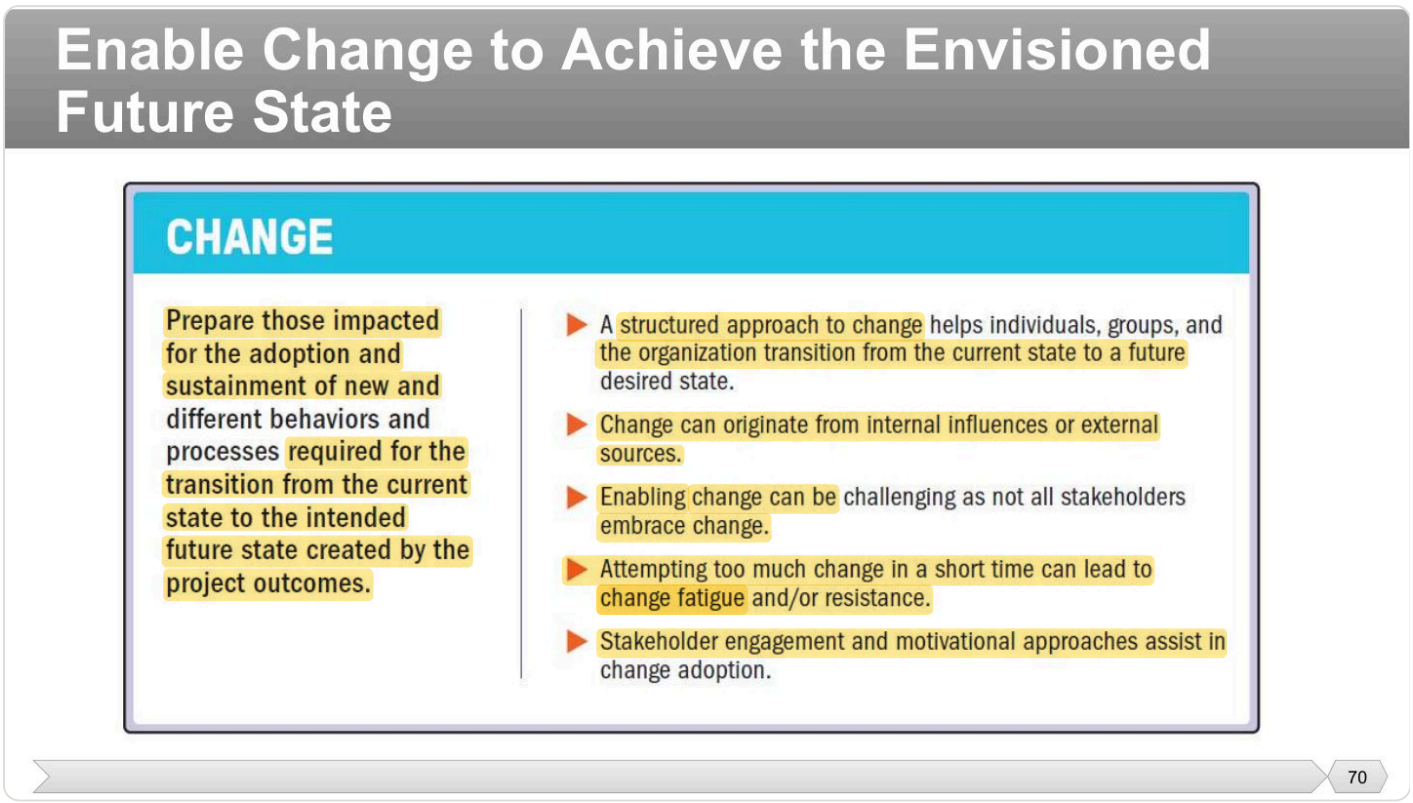
T True

> This is the card’s definition.

F False

> The statement is correct: it’s the definition on the card. Compare it with adaptability, which is about responding to changing conditions.

 Enable Change to Achieve the Envisioned



NOTES

1. A system can be delivered perfectly and still fail if nobody uses it. So this principle is about the **people** affected, not the technology: getting them ready, helping them adopt the new behaviors, and keeping them from sliding back. "Sustainment" is the often-forgotten part: people must stay with the change after the excitement has faded.

2. A **structured approach** means planning the transition rather than just announcing it: explain why, train people, support them through the switch, and collect feedback. Change comes from inside (a new CEO) or outside (a new law). Either way, not everyone will welcome it, because people often lose familiarity or status in the process.

3. **Change fatigue** is what happens when people get too much change too quickly. They start ignoring announcements and resisting even useful changes, since they're worn out rather than because the change is bad. The fix is pacing and motivation: spacing out changes, engaging stakeholders, and showing them why it's worthwhile.

TIPS & TRICKS

- Deliverable ≠ adoption. Ask: **"Are people actually working the new way?"**
- Too much change, too quickly → **fatigue**. Treat it by slowing down and engaging people, not by pushing harder.

EXAM ANGLE

Prediction Q1

A ministry rolls out a new ERP, a new HR system and a new workflow in the same month. Staff start ignoring announcements and avoiding the new tools. What is happening?

A Change fatigue, from attempting too much change in a short time

> The card warns that too much change in a short time can lead to change fatigue and/or resistance.

B Scope creep

> The scope isn't growing. The problem is people's reaction to the pace of change.

C Poor resiliency of the servers

> The problem is with people, not servers.

D Risk acceptance

> Nobody is choosing to accept a risk here.

Prediction Q2

What should the PM do in that situation, according to the card?

A Announce the changes more often

> More announcements make fatigue worse.

B Pace the changes and use stakeholder engagement and motivational approaches

> The card says engagement and motivation assist adoption.

C Add more changes while people are adjusting

> This is the cause of the problem.

D Ignore the staff's reaction, since the systems were delivered

> A delivered system nobody uses creates no value.

Prediction

Q3

All stakeholders will embrace a change if it benefits the organization.

T True

> People may lose familiarity, status or comfort, so resistance can happen even when a change is good for the organization.

F False

> The card says enabling change can be challenging, as not all stakeholders embrace it.

Prediction

Q4

Change can originate from:

A Only senior management

> Change can also come from outside the organization.

B Internal influences or external sources

> The card lists both.

C Only the project team

> A new law or a new CEO can also bring change.

D Only customers

> Customers are one possible source among many.

Prediction

Q5

What does a structured approach to change help with?

A Keeping everything as it is

> The aim is to move to a new state.

B **Helping individuals, groups, and the organization move from the current state to the desired future state**

> This is the card's wording.

C Avoiding the need to communicate

> Communication is central to it.

D Removing stakeholders from the process

> Stakeholder engagement helps adoption.

Prediction

Q6

Months after go-live, staff are slowly going back to the old spreadsheets. Which word on the card addresses this?

A Tailoring of the process

> The problem is people sliding back rather than the process fit.

B Acceptance criteria

> The system was accepted. People aren't staying with it.

C Risk threshold

> This doesn't explain why they're returning to old habits.

D **Sustainment of the new behaviors**

> The card says to prepare people for adoption **and sustainment**, so the change has to last.

Original slides from the SE423 lecture deck, with study notes. Check exact wording against the original deck.
Notes and questions are study aids. Made by Shoug Alomran.