1

Introduction

This section describes the purpose of *The Standard for Project Management*, identifies the audience, and provides a brief overview of the structure of the standard.

1.1 Purpose of The Standard for Project Management

The Standard for Project Management – Seventh Edition provides a common basis for and understanding of project delivery. This standard applies to any project or delivery approach—such as predictive, agile, and hybrid—across industries.

The standard describes the Value Delivery System, of which projects are a fundamental component. The standard identifies principles that guide the practice of project management practitioners, project team members, and other stakeholders who work on or who are engaged with projects. The principles support achievement of the intended outcomes that ultimately deliver value to organizations and stakeholders.

The project delivery principles in this standard represent a departure from what has historically been a process-oriented approach to a principles-oriented approach that supports any type of project delivery. The principles articulated in this standard provide guidance for practitioner behaviors and actions for any projects and project-related activities. These principles support project teams to enable realization of the intended value from projects to the organization and stakeholders.

In the context of *The Standard for Project Management*, project management encompasses the application of knowledge, skills, tools, and techniques to project activities to meet project requirements. While this tactical focus ensures the project delivers its intended results, this standard expands the term to address the continuing pace of change in global business. The expanded term *project delivery* complements the term *project management*. It embraces the broadening continuum of ways in which project results can be achieved by bringing a sharper focus on project outcomes rather than just project deliverables. This standard speaks to both *project management* and *project delivery*.

1.2 Audience for the Standard

This standard provides a foundational reference for anyone participating in a project environment. This includes, but is not limited to:

- People who are accountable for delivering project outcomes;
- People who work on projects full or part time;
- People who work in project management offices (PMOs);
- People involved in project sponsorship, product ownership, product management, executive leadership, or project governance;
- People involved with portfolio or program management;
- People who provide resources for project work;
- Consultants who focus on value delivery for portfolios, programs, and projects;
- Educators who teach project management;
- Students of project management; and
- Others involved in any aspect of the project delivery value chain.

1.3 Structure of the Document

The standard consists of the following sections:

- **Section 1—Introduction.** Provides an overview and purpose of this standard.
- **Section 2—Value Delivery System.** Presents key definitions associated with value delivery and defines the Value Delivery System and the continuing evolution of project

delivery.

- **Section 3—Project Delivery Principles.** Defines and elaborates the 12 principles associated with successful project delivery.

1.3.1 The Value Delivery System

The Value Delivery System is the holistic system through which projects deliver business value. This section presents the concept of projects as a means of creating desired outcomes, including key concepts associated with the context in which projects exist and the way in which projects enable outcomes to realize value. It includes a discussion of value delivery, typical roles and skills, and relationships with customers, end users, and other stakeholders of a project.

1.3.2 Project Delivery Principles

The concept of project delivery sets forth a view of project teams that actively engage with projects using a set of accepted principles that traverse industry and culture. The project delivery principles were derived from publicly held discussions and consensus within the profession to ensure that they reflect diverse perspectives, experiences, and approaches. Research across the profession helped identify underlying principles that were not explicitly stated.

The project delivery principles enable an evolution in the profession from a process-driven to an outcomes-focused approach that embraces innovation and flexibility within a set of commonly held tenets of practice.

2

Value Delivery System

2.1 Overview

Organizational leaders and teams undertake projects to realize value for organizations and their stakeholders. Successful projects deliver that intended value. They create unique deliverables—products, services, or results—that enable organizational capabilities. The capabilities drive outcomes that deliver benefits. Value is the net tangible or intangible result of realized benefits less the cost of achieving those benefits. For some organizations, value may represent financial gain. In other organizations, value may represent societal improvements or public good, such as increased literacy or lower fatality rates.

Projects are part of an organization's initiatives (see Figure 2-1). Projects can stand alone or be part of a program or portfolio of work. Section 2.3 describes aspects of projects in greater detail. Essential to project success and driving value delivery are effective organizational governance and approaches to the human aspect of projects. Both are discussed in this section of the standard.

Projects are commissioned to advance the mission, strategy, and business objectives of an organization. Indicators that the organization is advancing toward or realizing its strategic and business objectives flow from initiatives and include the following:

- **Strategy.** The overarching objectives that determine an organization's direction.
- **Objectives.** The breakdown of strategy into desired outcomes.
- **Initiatives.** The portfolios, programs, and projects created to deliver a strategic objective.
- **Deliverables.** Products, services, or results generated by a portfolio, program, or project.
- **Capability.** The ability to add value or achieve objectives through a function, process, service, or other proficiency.
- **Outcomes.** The results obtained through the use of portfolio, program, and project

outputs. The results may be tangible or intangible.

- **Benefits.** Gains realized by the organization and beneficiaries through portfolio, program, or project outputs and resulting outcomes.
- **Value.** The net result of realized benefits less the cost of, or effort for, achieving those benefits. The value may be tangible or intangible.

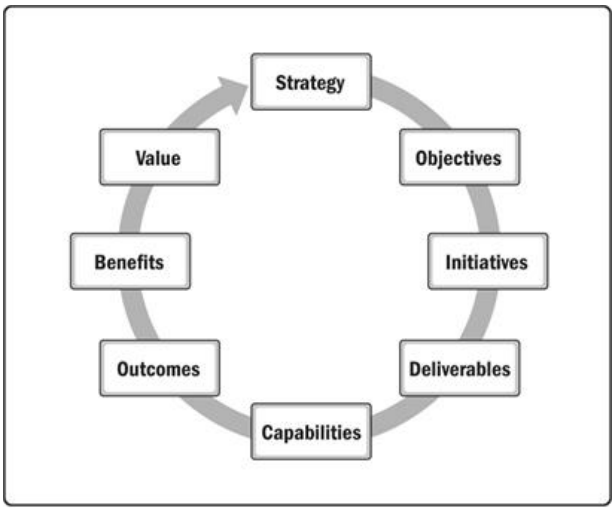


Figure 2-1. Connecting Organization Strategy to Benefits Realization Management

The following practical example illustrates these connections:

An organization's leaders consider innovation to be one of its strategic goals. One strategic objective may be to release an improved product for its customers. Therefore, the leaders initiate a product improvement project based on customer feedback. The deliverable of this project is an enhanced offering with added functionality. The desired outcomes from the enhanced offering are increased user loyalty, along with a gain of a specified percentage of market share from competitors. The outcomes drive benefits in the form of revenue growth and increased customer satisfaction. The business value is the profit level associated with the improved offering.

All projects attempt to deliver a result, though some may fail to do so or may produce suboptimal outcomes. The potential for suboptimal outcomes exists in every project. In the case of a fully experimental project, the organization is attempting to achieve a breakthrough, such as the creation of a completely new technology, for example. This requires deliberate investment in an uncertain outcome. Some projects may be very similar to current organizational work, but the knowledge, technology, or skill within the organization to produce the desired outcome is missing something critical. For example, companies that produce new medicines or compounds may experience several failures before finding a successful formula. Some projects may fail to drive outcomes because the market opportunity has passed or competitors were first to market with their offering, among other reasons. Effective project delivery can minimize negative outcomes, but such possibilities are part of the uncertainty of attempting to produce a unique result.

The evolution of business and the interplay of various environmental forces drive the practice of project management toward a value-based system. The value-based system is a framework for optimizing outcomes by balancing elements such as cost, quality, risk, stakeholder interests, and resources. Speed of technological change, the need to adapt to dynamic change, use of flexibility in approaches to work, limited resources, and an increased focus on customer or end-user satisfaction are just some of the challenges with which project professionals grapple in their daily work.

In response to these dynamics, the Value Delivery System represents a collection of strategic business activities aimed at building, sustaining, and/or advancing an organization. The Value Delivery System emphasizes a broad application of concepts, practices, and techniques for producing value in an increasingly complex business context. At the project level, every project has a measurable value connection to some aspect of organizational strategy, mission, or business need, as well as to desired outcomes. Examples include, but are not limited to:

- Creating a new product, service, or result that satisfies the needs of customers

or end users;

- Improving efficiency, productivity, effectiveness, or responsiveness;
- Sustaining benefits enabled by previous projects, programs, or business operations;
- Enabling the changes needed to facilitate organizational transition to its desired future state; and
- Creating positive social or environmental contributions.

In the context of this standard and its view of value delivery, projects are part of a Value Delivery System, which is a collection of strategic business activities aimed at building, sustaining, and/or advancing an organization. The Value Delivery System (see Figure 2-2) represents a bidirectional flow of information:

- Strategy, direction, and alignment emerging from organizational leadership; and
- Feedback, learning, and change arising from portfolio, program, project, and business leaders and teams.

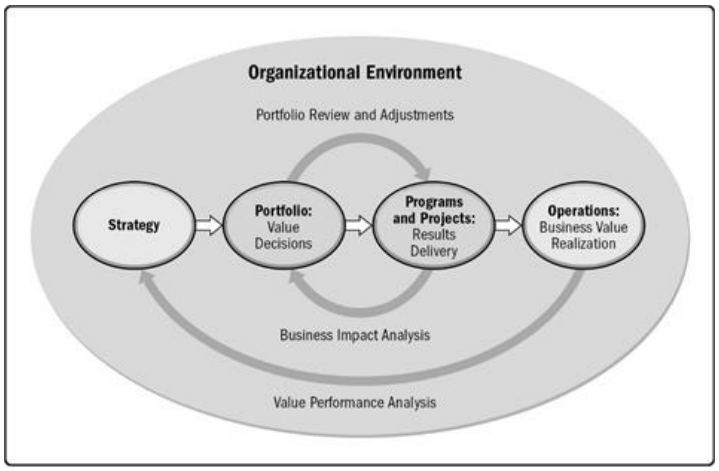


Figure 2-2. The Value Delivery System

For this system to function effectively, information and feedback should be shared constantly between all elements of the system. In Figure 2-2, these connections are reflected in the three feedback loops:

- **Portfolio review and adjustment.** Involves ongoing evaluation of each program's and project's alignment with strategy as well as their probability of business success;
- **Business impact analysis.** Incorporates the collection of result data from programs and projects, which is fed back into the portfolio; and
- **Value performance analysis.** Provides business value realization data from the business to evaluate how well the strategy of the organization is advancing.

This ongoing exchange of information keeps the system elements aligned and interconnected as internal and external factors prompt changes and adaptations.

At its highest level, the Value Delivery System is driven by a defined strategy, mission, or objective (see Figure 2-2). Organizational strategies and objectives evolve in increasingly adaptable ways to accommodate responses to even the most rapid changes in the external environment as well as internal course corrections.

To realize value, organizations can use a multilayered governance structure consisting of portfolios, programs, projects, and business operations or can implement simpler governance structures. Organizational leaders tailor governance to the organization context and needs.

At the portfolio level, leaders make investment decisions to translate strategy into value for the organization and its stakeholders. A portfolio is a collection of projects, programs, subsidiary portfolios, and operations managed as a group to achieve strategic objectives (see *The Standard for Portfolio Management* – Fourth Edition). Investment decisions can lead to the establishment of programs or projects.

Programs include related projects, subsidiary programs, and program activities that are managed in a coordinated manner to obtain benefits not available from managing them individually (see *The Standard for Program Management* – Fourth Edition). Programs

incorporate and translate strategy into integrated work activities focused on benefits realization while also delivering within such constraints as budget limitations, stakeholder expectations, access to people with required skills, and availability of resources.

Projects can be authorized within portfolios or programs or can represent stand-alone initiatives in pursuit of organizational strategy and objectives. Projects can operate within similar constraints as programs. Projects may release all their deliverables during completion or may deliver incremental results throughout their duration.

Operational leaders support the enhancement and sustainment of project outcomes to optimize benefits and value.

Understanding the connections between strategy, portfolios, programs, projects, and operations places projects in their rightful context within the Value Delivery System. Figure 2-3 shows two portfolios comprised of programs and projects. It also shows a stand-alone program with projects and stand-alone projects. The portfolios, programs, and projects along with the operations comprise the Value Delivery System. The Value Delivery System operates within the constraints and context of both the internal environment and the external environment.

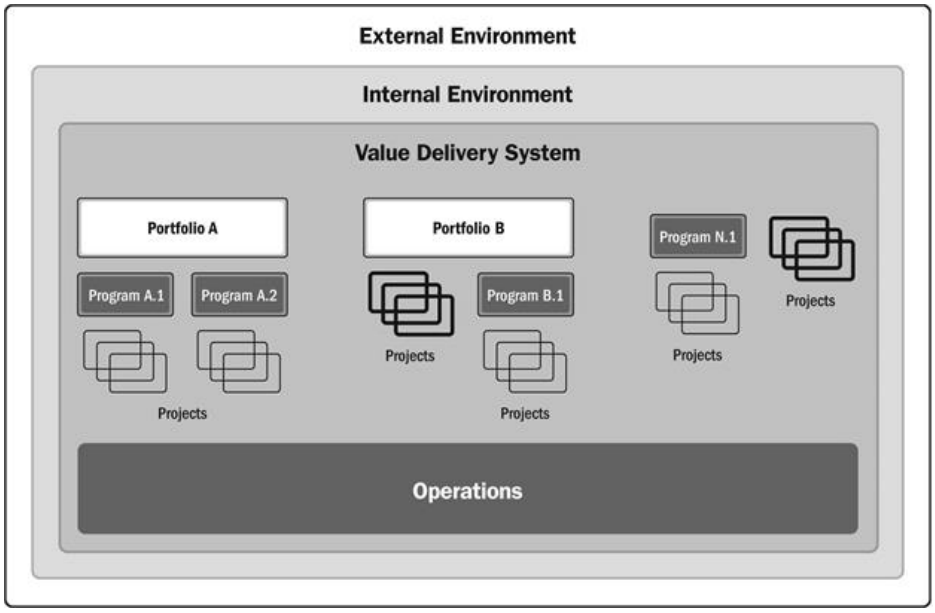


Figure 2-3. Components of the Value Delivery System.

2.2 Organizational Governance Systems

The governance system works within the Value Delivery System to enable smooth workflows, manage issues, and support decision making appropriately. Governance systems provide a framework, functions, and processes that guide value delivery activities. A governance framework may include elements of oversight, value delivery assessment, integration among value delivery components, and decision-making capabilities.

Governance systems provide an integrated structure for evaluating changes, issues, and risks associated with the environment and any component in the Value Delivery System, including portfolio objectives, program benefits, and deliverables produced by projects.

Projects may operate within a program or within a project management office, either of which may govern certain elements of the project. Therefore, project governance is aligned with program and/or organizational governance. Project governance includes defining the authority to approve changes and make other business decisions related to the project.

2.3 About Projects

A *project* is a temporary endeavor undertaken to create a unique product, service, or result. The project deliverables support achievement of benefits that may not be fully realized by the completion of the project itself. Those benefits are intended to drive

value to the organization. Therefore, project teams work with business operations or program leadership to ensure that the project result will deliver the desired outcomes that lead to benefits realization and value.

The temporary nature of projects indicates a beginning and an end to the project work. A project ends in one of two ways:

- The project objectives have been met.
- The project is terminated because its objectives will not or cannot be met, the cost to deliver exceeds the expected value, or there is no longer a need for the project.

Project management is the application of knowledge, skills, tools, and techniques to project activities to meet project requirements. Through the use of guiding principles, project management enables a team of people to communicate effectively, commit to coordinated actions, and produce results. While the fundamental attributes of project management continue to apply in the Value Delivery System, the approach has shifted in professional practice. Emphasis has moved from a model in which processes are the main guide for structuring the management of projects, to one that uses an adaptable and proactive mindset, tailored approaches, and collaborative leadership styles to achieve optimal results, quality, and value. There is also greater recognition that projects are delivered through the efforts of motivated team members and engaged stakeholders.

Project teams can produce deliverables using a broad range of approaches. In some projects, the requirements for the intended result and the steps associated with producing that result may be very clear. Other projects may require ongoing exploration and discovery, through which requirements and work activities are progressively elaborated. Given this variety, the term *management*, as in the application of control, may be incompatible with the environment, culture, objectives, and outcomes of some types of projects. Therefore, and to include all types of project environments, this standard uses the term *project delivery* to reflect this broader perspective and maintain a focus on outcomes as well as deliverables.

Project delivery supports the Value Delivery System by acknowledging and accommodating the broadening continuum of ways in which project results can be achieved. Project delivery, just like the Value Delivery System, is an adaptable capability for addressing the continuing pace of change in global business. It enables people with the skills and knowledge to select tools, practices, and methods to create a tailored approach for delivering results and achieving outcomes.

2.4 People in the Project

People drive project delivery. Supportive leadership models and meaningful, continuous engagements between project teams and organizational stakeholders underpin successful business outcomes. The people element of projects enables organizations to experience success with the inherent changes wrought by projects. Members of a project team and other stakeholders identify, evaluate, and respond to project conditions to increase the probability of success.

Coordinating collective work effort is essential to the success of any project. There are different types of coordination, each suitable for a specific context. Some projects benefit from decentralized coordination in which team members self-organize and self-manage. Other projects benefit from centralized coordination with the leadership and guidance of a designated project manager or similar role.

Regardless of how projects are coordinated, project delivery recognizes the human dynamic of projects. It emphasizes the project team as a whole, since the collective effort produces the project deliverables and directly supports the Value Delivery System. In this context, project teams or groups of contributors may include all or some combination of the following roles and responsibilities:

- **Project lead.** Guides the team in carrying out work assignments effectively and efficiently.
- **Facilitator/coach.** Maintains a culture of teamwork, learning, and mutual respect.
- **Team member.** Completes assigned work in collaboration with other contributors.
- **Business representative/product owner.** Maintains an ongoing relationship between the project and business objectives.
- **Domain subject matter expert/support team member.** Provides required expertise or

support for short intervals throughout the project.

- **Customer/end user.** Provides input and insights to the team so the result meets customer or end-user expectations.
- **Sponsor.** Provides senior management support and ensures availability of funding and other resources.
- **Governance board.** Provides guidance and decision-making support for escalated issues.

Each of these roles—and other stakeholders—provide input and opinions on how they may be affected by a decision, activity, or outcome of a project.

2.4.1 Project Lead

The project lead, who may be called the project manager, scrum master, or one of a number of other titles, helps the team to achieve project objectives, typically by orchestrating the work of the project. The specifics of this role and how the functions are carried out within the project team can vary among organizations, but typically include playing a leadership role to help the team achieve project objectives. This role is clearly visible throughout any project. In some organizations, a project lead may be involved in evaluation and analysis activities as part of the project proposal. These activities may include consulting with executive and business unit leaders on ideas for advancing objectives, improving organizational performance, or meeting customer needs. In other organizational settings, the project lead may also be called upon to manage or assist in business analysis, tendering and contract negotiations, business case development, and aspects of portfolio management for a project. A project lead may also be involved in follow-on activities related to realizing and sustaining benefits from the project after the project finalizes its deliverables but before formal closure of the project. Ultimately, the role and title of a project lead is tailored to fit the organization, just as project approaches are tailored to fit the project.

2.4.2 Facilitator/Coach

The role of a facilitator, coach, or project manager can overlap. Facilitators encourage team member participation, collaboration, and a shared sense of responsibility for the team's work output. Facilitators help the team create acceptable solutions, resolve conflicts, and make decisions. Facilitators coordinate meetings and contribute in an unbiased way to the advancement of project objectives.

Coaches assist people through change and help address barriers that may prevent success. Coaches observe individual and team performance and provide teams and their members with feedback to help them learn, adapt, and improve in real time.

2.4.3 Team Member

Team members provide the skills necessary to produce a result, such as a working product. Team members may join as dedicated or temporary members, depending on the needs and resources of the organization. Some projects need highly specialized team members, while other projects can benefit from teams whose members have broad skill sets. Cross-functional team members representing different parts of the organization can provide a mix of internal perspectives, establish alliances with key business units, and act as change agents within their functional areas. Team members may also play key support roles as the project deliverables are implemented or transitioned into operations.

2.4.4 Business Representative/Product Owner

A product owner or business representative guides the direction of the product or project result and prioritizes the requirements or backlog based on business value, dependencies, and technical or operational risk. These roles work with project teams frequently, by providing feedback and setting direction for the next increment or element to be developed or delivered. These roles also work with other stakeholders, customers, and their teams to define the product direction.

In agile and hybrid environments, project teams can establish a time box for demonstration, feedback, learning, and adaptability with a cadence that is practical for the stakeholders who are impacted. In predictive environments, teams use designated checkpoints for presentation of and feedback on project progress with the business representative and other key stakeholders. In some instances, the business representative

or product owner may fulfill sponsor duties as well. The business representative function may be conducted through proxy. For example, in some government and construction projects, a contract with an agency or consultancy may represent the owner or customer.

2.4.5 Customer/End User

The customer and end user are not always synonymous. For the purpose of this standard, the customer is defined as the individual who has requested or is funding the work and may also fill the role of business representative discussed earlier. The end user is the person or group who will make direct use of the project deliverable.

Project teams establish mechanisms for gaining perspectives from both customers and end users. Project teams need to obtain clear direction from customers and end users regarding project requirements, outcomes, and expectations. For agile and innovative project teams, this need for ongoing feedback is greater because the teams are exploring and developing product elements within specific increments. In some project environments, the customer or end user engages with the team for review and feedback periodically. In some projects, a representative of the customer or client participates on the project team. Regardless of the delivery approach, customer and end-user interaction are determined by the nature of the guidance required.

2.4.6 Domain Subject Matter Expert/Support Team Member

Some projects require specific expertise or support at various points of the project work. These individuals contribute to the team's work and learning. However, their participation is generally limited to the specific timeframe in which their expertise or support is required.

2.4.7 Sponsor

Sponsors act as bridges between the organization's strategic or business objectives, the project team, and the project outcomes. Project sponsors communicate the organization's vision, goals, and expectations to the team. They are advocates for the project and the team by helping to secure the decisions, resources, and authority that allow project activities to progress. In some cases, the sponsor also fulfills the role of business representative or product owner.

Sponsors also serve as an intermediary between senior management and the project team. They play a supporting role in keeping projects aligned to business objectives, removing obstacles, and addressing issues outside the bounds of the project team's decision authority. Sponsors can also facilitate innovation by identifying opportunities that arise within the project and communicating these to senior management. Lastly, sponsors often monitor project outcomes after project closure to ensure the intended business benefits are realized.

2.4.8 Governance Body

Some organizations use governance bodies to maintain linkages between project teams and strategic or business objectives that may change over the course of the project. The governance body is a review and decision-making group usually comprised of senior executives and/or business unit leaders. The governance body is responsible for approving and supporting recommendations made by the project team and for monitoring project progress in achieving the desired outcomes. In some organizations, a project management office (PMO) serves as the governance body for projects under its auspices.

2.4.9 Stakeholders

Stakeholders include individuals, groups, or organizations that may affect, be affected by, or perceive themselves to be affected by a decision, activity, or outcome of a project. This definition includes all project roles discussed here, as well as a much broader range of individuals. Ultimately, stakeholders determine whether project results and outcomes meet their needs and produce value. Project teams collaborate with stakeholders throughout the project to enable project deliverables that produce the desired outcomes. An outcome-focused approach improves the team's ability to deliver a solution that supports achievement of the intended outcomes and creates value for stakeholders.

2.5 Projects and the Environments in Which They Operate

Projects exist and operate in environments that may have an influence on them. These influences can have a favorable or unfavorable impact on the project. Two major categories of influences are enterprise environmental factors (EEFs) and organizational process assets (OPAs). EEFs originate from the environment outside of the project and, often, outside of the enterprise. EEFs may have an impact at the organizational, portfolio, program, or project level. OPAs are internal to the organization. These may arise from the organization itself, a portfolio, a program, another project, or a combination of these.

2.5.1 Enterprise Environmental Factors

Enterprise environmental factors (EEFs) refer to conditions that are out of the control of the project team and that influence, constrain, or direct the project. These conditions can be internal and/or external to the organization. EEFs may enhance or constrain project management options. In addition, these factors may have a positive or negative influence on the outcome.

The following EEFs are internal to the organization:

- **Organizational culture, structure, and governance.** Examples include vision, mission, values, beliefs, cultural norms, leadership style, hierarchy and authority relationships, organizational style, ethics, and code of conduct.
- **Geographic distribution of facilities and resources.** Examples include factory locations, virtual teams, shared systems, and cloud computing.
- **Infrastructure.** Examples include existing facilities, equipment, organizational telecommunications channels, information technology hardware, availability, and capacity.
- **Information technology software.** Examples include scheduling software tools, configuration management systems, web interfaces to other online automated systems, and work authorization systems.
- **Resource availability.** Examples include contracting and purchasing constraints, approved providers and subcontractors, and collaboration agreements.
- **Employee capability.** Examples include existing human resources expertise, skills, competencies, and specialized knowledge.

The following EEFs are external to the organization:

- **Marketplace conditions.** Examples include competitors, market share, brand recognition, and trademarks.
- **Social and cultural influences and issues.** Examples include political climate, codes of conduct, ethics, and perceptions.
- **Legal restrictions.** Examples include country or local laws and regulations related to security, data protection, business conduct, employment, and procurement.
- **Commercial databases.** Examples include benchmarking results, standardized cost estimating data, industry risk study information, and risk databases.
- **Academic research.** Examples include industry studies, publications, and benchmarking results.
- **Government or industry standards.** Examples include regulatory agency regulations and standards related to products, production, environment, quality, and workmanship.
- **Financial considerations.** Examples include currency exchange rates, interest rates, inflation rates, tariffs, and geographic location.
- **Physical environmental elements.** Examples include working conditions, weather, and constraints.

2.5.2 Organizational Process Assets

Organizational process assets (OPAs) are the plans, processes, policies, procedures, and knowledge bases specific to and used by the performing organization. These assets influence the management of the project. OPAs include any artifact, practice, or knowledge from any or all of the performing organizations involved in the project. They can be used to execute or govern the project. The OPAs also include the organization’s lessons learned from previous projects and historical information. OPAs may include completed schedules, risk data, and related data. Since OPAs are internal to the organization, project teams update and add to the OPAs as necessary throughout the project.

2.6 Project Management, Program Management, and Product Management

In today's business world, the disciplines and domains of project management, program management, and product management are becoming more interlinked. This is particularly true with regard to digital and software-enabled products and services. While program management and product management are beyond the scope of this standard, understanding each domain and the relationships between them provides a useful context for projects whose deliverables are products or services.

A product is a system, tangible object, or component that can be either a separate end item or a component item. Product management involves the integration of people, data, processes, and business systems to create, maintain, and develop a product or service throughout its life cycle. The product life cycle is a series of phases that represent the evolution of a product, from concept through delivery, growth, maturity, and to retirement.

Product management may initiate projects or programs at any point in the product life cycle to create or enhance specific components, functions, or capabilities (see Figure 2-4). The initial product may begin as a deliverable of a project or program. Throughout its life cycle, a new project or program may add or improve functionality that creates additional value for customers and sustains the benefits of the product or the sponsoring organization. In some instances, a program may encompass the full life cycle of a product or service to ensure that the product realizes intended business benefits and produces value for the organization.

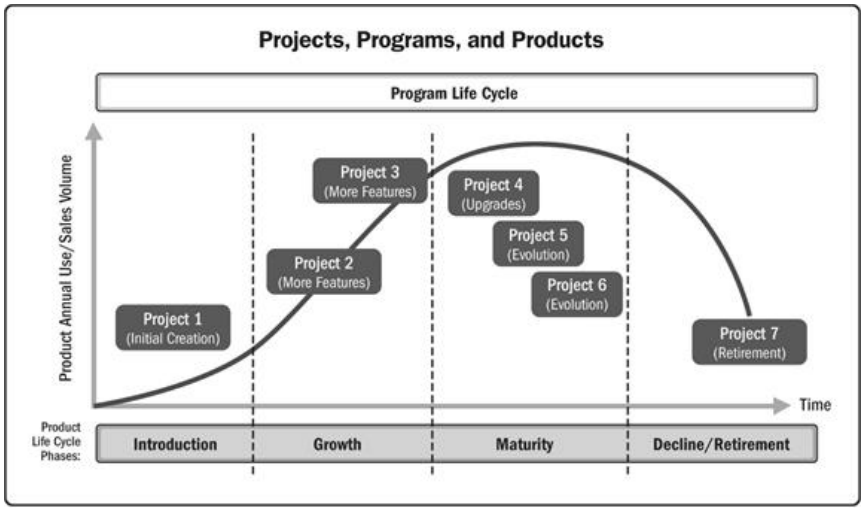


Figure 2-4. Project, Program, and Product Life Cycles

For digital products, which are products or services that are delivered, used, and stored in an electronic format, organizations are using adaptable platforms to satisfy customer needs. The platforms provide core functions such as inputting and processing data and outputting information or results. Software components and features leverage those core functions to deliver unique capabilities that meet customer needs, such as taking and sharing photographs, facilitating business transactions, enabling networking with others, and so forth. If organizations are mindful of their markets and trends and develop new features and capabilities for delivery via a platform, they can sustain benefits realization as long as the platform and capabilities continue to satisfy customers. These digital products are often developed and managed using long-running, stable teams and incremental funding models.

Product management may exist in different forms, including but not limited to:

- **Product management within a program.** This approach incorporates related projects, subsidiary programs, and program activities managed in a coordinated manner to obtain benefits not available from managing them individually. In this case, a subsidiary program continually produces new features and capabilities. A series of projects implements platform enhancements and upgrades as needed. Finally, program activities capture and analyze customer data to identify patterns of emerging needs.
- **Product management with a combined approach.** This approach oversees development of new features and capabilities as an ongoing business activity while chartering individual

projects as needed to perform platform enhancements and upgrades or to produce other unique results.

While product management is a separate discipline with its own body of knowledge, it represents a key integration point with the Value Delivery System within the program management and project management domains. Programs and projects with deliverables that include products or digital products use a tailored and integrated approach that incorporates all of the relevant bodies of knowledge and their related practices, methods, artifacts, and so on.

3

Project Delivery Principles

Principles define the *what* and *why* of project management. Project delivery principles guide the behavior and thinking of all who are involved in project delivery, so these individuals can apply their efforts to achieve stronger outcomes.

Principles describe a fundamental truth, norm, or value. They are parameters within which project professionals operate. These principles are not prescriptive. They are broadly based concepts that enable individuals to envision and achieve alignment with the intent of the principles while carrying out project work.

Twelve principles provide guidance for effective project management. The degree of application of each principle is influenced by the context of the organization, the project, deliverables, the team, stakeholders, and other factors. The principles are listed here without any specific weighting or order and elaborated in the following sections. The principles are:

- Be a diligent, respectful, and caring steward.
- Build a culture of accountability and respect.
- Engage stakeholders to understand their interests and needs.
- Focus on value.
- Recognize and respond to systems' interactions.
- Motivate, influence, coach, and learn.
- Tailor the delivery approach based on context.
- Build quality into processes and results.
- Address complexity using knowledge, experience, and learning.
- Address opportunities and threats.
- Be adaptable and resilient.
- Enable change to achieve the envisioned future state.

3.1 Be a Diligent, Respectful, and Caring Steward

Be a diligent, respectful, and caring steward.	

	• Stewardship encompasses responsibilities within and external to the organization.
	• Stewardship includes:
	  ○ Duty of integrity,
	  ○ Duty of care,
	  ○ Duty of loyalty, and
	  ○ Duty of compliance.
	• A holistic view of stewardship considers financial, social, and environmental awareness.

Being a steward entails acting responsibly to carry out activities with integrity, care, and loyalty while maintaining compliance with internal and external regulations. Stewards demonstrate a broad commitment to care for financial, social, and environmental resources.

Stewardship has slightly different meanings and applications in different contexts. One aspect of stewardship involves being entrusted with the care of something. Another aspect focuses on the responsible planning, use, and management of resources. Yet another aspect means upholding values and ethics.

Stewardship encompasses responsibilities both within and external to the organization. Within the organization, stewardship includes:

- Operating in alignment with the organization, its objectives, strategy, and sustainment of its long-term value;
- Respectful treatment and engagement of people throughout the organization, including their compensation, access to opportunity, and fair treatment;
- Diligent oversight of organizational finances and materials used within a project; and
- For individuals in any leadership position, understanding the power and responsibility associated with that role.

Stewardship outside the organization includes responsibilities in areas such as:

- The organization's impact on the natural environment and its use of materials and natural resources; and
- The organization's relationship with external stakeholders such as its partners and channels, as well as the community, country, and/or region in which it operates.

Stewardship reflects understanding and acceptance of trust as well as actions and decisions that engender and sustain that trust. Stewards adhere to both implicit and explicit duties. These may include the following:

- **Integrity.** Stewards behave honestly and ethically in all engagements and communications. Stewards hold themselves to the highest standards and reflect the values, principles, and behaviors expected of those in their organization. Stewards serve as role models, building trust by living and demonstrating personal and organizational values in their engagements, work activities, and decisions. In the project delivery context, this duty often requires stewards to speak truth to power; to challenge team members, peers, and other stakeholders to consider their words and actions; and to be self-reflective and open to feedback.
- **Care.** Stewards are fiduciaries of the organizational matters in their charge, and they diligently oversee those matters. They pay close attention to those matters and exercise the same level of care over them as they would their personal matters. Care relates to the internal business affairs of the organization, through organizational policies and principles, and often encompasses care for the environment, sustainable use of natural resources, and concern for the conditions of people across the planet.

Projects bring about changes that may have unanticipated or unwanted consequences. Project management practitioners identify, analyze, and manage the potential downsides of project outcomes to ensure stakeholders are aware and informed.

Duty of care includes creating a transparent working environment, open communication channels, and opportunities for stakeholders to raise concerns without penalty or fear of retribution.

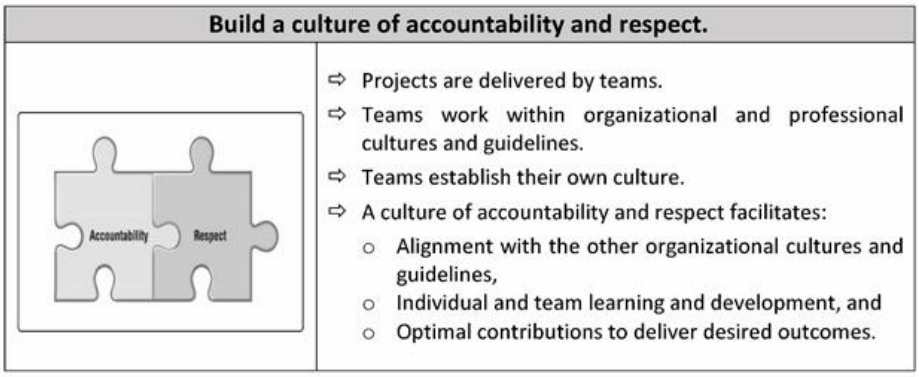
- **Loyalty.** Stewards represent themselves, their roles, their team and their authority accurately, both inside and outside of the organization. This behavior ensures that other people understand the degree to which an individual can commit resources, make decisions, or approve something. Loyalty also ensures that individuals proactively identify conflicts between their personal interests and those of their organization or client. Such conflicts can undermine trust and confidence, result in unethical or illegal behaviors, create confusion, or contribute to suboptimal results. Stewards protect projects from such breaches of trust.
- **Compliance.** Stewards comply with laws, rules, regulations, and requirements that are properly authorized within or outside of their organization. Stewards ensure compliance with guidelines intended to protect them, their organization, their stakeholders, and the public at large. In instances where stewards face conflicting guidelines or questions regarding whether or not actions or plans align with established guidelines, stewards seek appropriate counsel and direction.

Stewardship prescribes leadership with transparency and trustworthiness. Projects affect the lives of the people who deliver them as well as those who benefit from the project deliverables and outcomes. Projects can have effects such as easing traffic congestion,

producing new medications, or creating opportunities for people to interact. Those effects may produce other, negative impacts and consequences, such as reduced green space, side effects from medications, or disclosure of personal information. Project teams and their organizational leaders carefully consider such factors and impacts so they can make responsible decisions, balancing organizational and project objectives with being a good corporate citizen.

Increasingly, organizations are taking a holistic approach to business that considers financial, social, and environmental performance simultaneously instead of sequentially. Since the world is connected now more than ever and has finite resources and a shared environment, stewardship decisions extend beyond the project. These actions lead to good global citizenship.

3.2 Build a Culture of Accountability and Respect



Project teams are made up of individuals who pool their collective skills, knowledge, and experience. Teams that work collaboratively can accomplish a shared objective more effectively and efficiently than can individuals working on their own.

Creating a collaborative team culture involves many contributing factors. Chief among them are team agreements, structures, and processes. These factors create a culture that enables individuals to work together and provide synergistic effects from interactions.

- **Team agreements.** Establish behavioral parameters and secure individual commitments to the group.
- **Structures.** Represent an approach for organizing and coordinating individual effort associated with the work that needs to be completed. Structure may be based on roles, functions, or authority. An authority figure may formally impose a structure, or team members may agree to a structure as they join the group.
- **Processes.** Represent enablers for completing tasks and work assignments. For example, project teams may agree to a decomposition process using a work breakdown structure (WBS) or a backlog.

Project teams are influenced by the culture of the organizations involved in the project, the nature of the project, and the environment in which they operate. Within these influences, project teams establish their own cultures. Teams can tailor their structure to best accomplish the project objective. Fostering an inclusive and collaborative environment that is aligned with the organization's values enables the team to achieve project outcomes.

Teams exist within and maintain an awareness of organizational and professional cultures within which the project resides. The team defines the desired team culture and sets agreements with the aim of establishing a high-performing, integrated culture. This places a greater value on visibly modeling beliefs, principles, and organizational values in behaviors and actions. Even when cultural business norms are implicit rather than explicit, they inform the project and therefore must be integrated into the project culture. The responsibility of the team is to ensure that individual contribution, behavior, and overall team actions align with and support stated organizational values.

Within project teams, specific tasks may be delegated to individuals or selected by team members themselves. This includes the authority, accountability, and responsibility related to tasks:

- **Authority.** Provides an individual or group with the right to make decisions, establish procedures, and commit resources.
- **Accountability.** The condition of being solely answerable for an outcome. Accountability is not shared.
- **Responsibility.** The condition of being obligated to do or fulfill something. Responsibility can be shared.

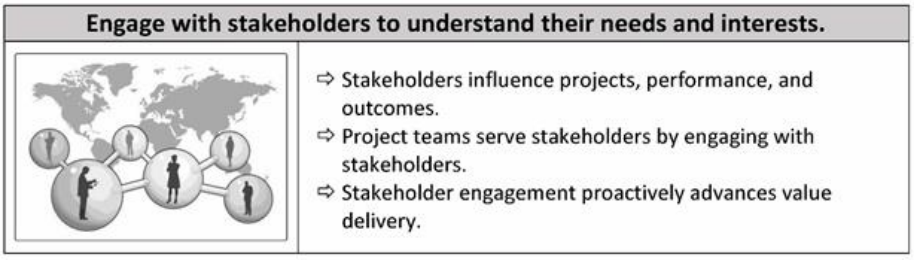
Regardless of who is accountable or responsible for specific project work, a team that embraces a culture of accountability takes ownership collectively of the project outcomes.

A diverse team can enrich the project environment by bringing together different perspectives. The team can be comprised of internal organizational staff, contracted contributors, volunteers, or external third parties, for example. Additionally, some team members join the project on a short-term basis to work on a specific deliverable while other members are assigned to the project on a longer-term basis. Integrating these individuals with a project team can challenge everyone involved. A team culture of respect allows for differences and finds ways to leverage them productively, rather than allowing them to raise conflict.

Another aspect of accountability and respect is accommodating practice standards, ethical codes, and other guidelines that are part of the professional work within the team and the organization. Teams consider how these guides can support their efforts to avoid possible conflict among the disciplines and the established guidelines they use.

Accountable and respectful team culture fosters the free exchange of information and individual knowledge. This, in turn, maximizes shared learning and individual development while delivering results. The team culture enables everyone to contribute their best efforts to deliver the result and desired outcomes for an organization. The organization, in turn, will benefit from deliverables and outcomes that respect and enhance its fundamental values, principles, and culture.

3.3 Engage with Stakeholders to Understand Their Needs and Interests



Engage stakeholders proactively and to the degree needed to contribute to project success.

A stakeholder can be an individual, group, or organization. Stakeholders may affect, be affected by, or perceive themselves to be affected by a decision, activity, or outcome of a portfolio, program, or project. Stakeholders also directly or indirectly influence a project, its performance, or outcome in either a positive or negative way.

Stakeholders can affect many aspects of the project and in certain ways, including but not limited to:

- **Scope/requirements.** By revealing the need to add, adjust, or remove elements of the scope and/or requirements.
- **Schedule.** By offering ideas to accelerate delivery or by slowing down key project activities.
- **Cost.** By helping to reduce or eliminate planned expenditures or by adding steps or requirements that increase cost or require additional resources.
- **Team.** By restricting or enabling access to people with the skills, knowledge, and experience needed to deliver the right result.
- **Plans.** By providing information for plans or by advocating for changes to agreed activities, tasks, and work.
- **Outcomes.** By enabling or blocking work or results required for the desired outcomes.
- **Culture.** By establishing or influencing—or even defining—the level and character of engagement of the project team and broader organization.

Stakeholders may come and go throughout the life cycle of the project. Additionally, the degree of a stakeholder's interest or impact may change over time. Stakeholders, especially those with a high degree of influence and who have an unfavorable view about a project, need to be effectively engaged so that their interest, concerns, and rights are understood. The project team can then address these concerns to help ensure a more successful project outcome.

Therefore, project success comes from identifying, analyzing, and engaging with stakeholders from the start to the end of the project.

Project teams engage stakeholders by understanding, considering, and responding to the interests, needs, and opinions of stakeholders. Effective engagement and communication includes determining how, when, how often, and under what circumstances stakeholders want to be—and should be—engaged. Communication is a key part of engagement, but engagement delves deeper to include awareness of the ideas of others, assimilation of other perspectives, and collective shaping of a shared solution. Engagement means building and maintaining solid relationships through frequent, two-way communication. It encourages collaboration through interactive meetings, informal dialogue, and knowledge-sharing activities.

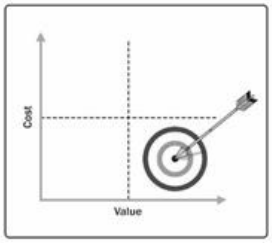
Stakeholder engagement relies heavily on interpersonal skills, including initiative, integrity, honesty, collaboration, respect, modesty, and confidence. These skills help everyone adapt to the work and to each other, increasing the likelihood of success.

Engagement helps project teams detect, collect, and evaluate information, data, and opinions. This creates shared understanding and alignment, which enables project outcomes. Additionally, these activities help the team to tailor the project to identify, adjust, and respond to changing circumstances in real time.

Project teams actively engage stakeholders throughout the project to mitigate potential negative impacts. Stakeholder engagements also enable opportunities for stronger project performance and outcomes. Finally, engaging stakeholders helps the team to find solutions that may be more acceptable to a broader range of stakeholders.

3.4 Focus on Value

Focus on value.



- ⇨ Value is the ultimate indicator of project success.
- ⇨ Value can be realized throughout the project, at the end of the project, or well after the project is complete.
- ⇨ Value, and the benefits that contribute to value, can be defined in quantitative and/or qualitative terms.
- ⇨ A focus on outcomes allows teams to support the intended benefits that lead to value creation.
- ⇨ Project teams evaluate progress and adapt to ensure the expected value can be realized.

Continually evaluate and adjust project alignment to business objectives and intended value.

Value, including value from the perspective of the customer, is the ultimate success indicator and driver of projects. Value focuses on the outcome of the result, not only on the result. The value of a project is often expressed as a financial contribution to the sponsoring or receiving organization. Value may be a measure of public good achieved, for example, social benefit or the customer's perceived benefit from the project result. When the project is a component of a program, the project's contribution to program outcomes can represent value.

A business case or similar artifact defines the rationale and desired outcome from project work. A business case contains information about strategic alignment, assessment of risk exposure, expected key performance measures, and alternative evaluations. The business case may state the intended value contribution of the project outcome in qualitative or quantitative terms, or both. The business case contains two supporting and interrelated elements:

- **Business need.** Provides the rational basis for the project, explaining why the project is undertaken. It provides details about the business objectives. The business need may be intended for the performing organization, a client organization, a partnership of organizations, or public welfare. A clear statement of the business need helps the project team understand the business drivers. It also allows the team to identify opportunities to increase the potential value from the project outcome.
- **Project justification.** Connected to business need. It explains how the proposed solution addresses the business need.

Together, the project justification and business need provide the team with information that allows them to make informed decisions to meet or exceed the intended value.

Desired outcomes should be clearly established and updated throughout the project. During its life cycle, a project undergoes change, and the team adapts in response. The team continuously evaluates project progress and direction against the desired outcomes and business case to ensure that the project remains aligned to the business case and will deliver its intended outcomes. Alternatively, the business case is updated to capture an opportunity identified by the project team. If the project is no longer aligned with the business need or seems unlikely to provide the intended value, the organization may choose to terminate the effort.

When value is expressed in financial terms, it is often based on the formula of benefit minus cost. A realization of benefit in excess of invested expense is expressed as positive value. The converse is expressed as negative value. However, benefit and cost need not be limited to financial terms. The benefit may be some measure of social good, organizational transformation, or attainment of an ethical standard. In these cases, positive value may be a more subjective determination.

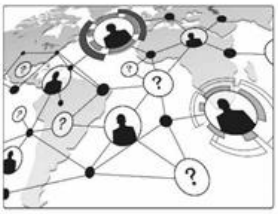
Within the context of some projects, project teams maximize value to the customer by delivering the required functionality while using as few resources as possible. In other words, the project should deliver only those features, capabilities, or specifications needed to satisfy the customer while using only those resources for which the customer is willing to pay.

To support value realization from projects, teams shift focus from deliverables to outcomes. Doing so allows teams to deliver on the vision or purpose of the project, rather than simply creating a specific deliverable. While the deliverable may support the intended project benefit, it may not fully achieve the vision or purpose of the project. For example, a customer may want a specific software solution because they think that the solution resolves the business need for higher productivity. The software is the project deliverable, but it does not by itself enable the productivity outcome that is intended. In this case, training and coaching in use of the software can enable a better productivity outcome. If the project fails to enable higher productivity, stakeholders may feel that the project has failed. Thus, project teams and their stakeholders understand both the deliverable and the intended outcome from the deliverable.

The value contribution of project work is often a long-term measure. Because value contribution may be mixed with contributions from operational activities, it may be difficult to isolate. While value is realized over time, project delivery processes can enable early benefit realization. With efficient and effective implementation, teams may demonstrate or achieve such outcomes as prioritized delivery, better customer service, or an improved work environment. By working with organizational leaders who are responsible for putting project deliverables into use, project leaders can ensure that the deliverables are positioned to realize the planned outcomes.

3.5 Recognize and Respond to Systems' Interactions

Recognize and respond to systems' interactions.



- ⇨ A project is a system of interdependent and interacting domains of activity.
- ⇨ Systemic thinking entails taking a holistic view of how project domains interact with each other and with external systems.
- ⇨ Systems are constantly changing, requiring consistent attention to internal and external conditions.
- ⇨ Being responsive to system interactions allows teams to leverage positive outcomes and avoid negative outcomes.

Recognize, evaluate, and respond to the dynamic circumstances within and surrounding the project in a holistic way to positively affect project performance.

A *system* is a set of interactive and interdependent components that function as a unified whole. Taking a holistic view, a project is a multifaceted entity that exists in dynamic circumstances, thus exhibiting the characteristics of a system. Project teams acknowledge this holistic view of a project, seeing the project as a system with its own working parts.

The project works within other, larger systems, and a project deliverable or result may become part of a larger system to realize fully desired benefits. For example, projects may be part of a program which, in turn, may also be part of a portfolio. These interconnected structures are known as a *system of systems*. Project teams balance inside/out and outside/in perspectives to support alignment across the system of systems.

The project may also have subsystems that are required to integrate effectively to deliver the right result. For example, when individual project teams develop separate components of a deliverable, all components should integrate effectively. This requires project teams to interact and align subsystem work on a regular basis.

Systemic thinking also considers temporal elements of systems such as what the project does or enables over time. For example, if project deliverables are released incrementally, each increment expands the cumulative outcomes or capabilities of previous versions. Project teams think past the end of the project to the operational state of the project's deliverable, so that intended outcomes are realized.

As projects unfold, internal and external conditions are continuously changing. A single change can create several impacts. For example, on a large construction project, a change in requirements can cause contractual changes with the primary contractor, subcontractor, suppliers, or others. In turn, those changes can create an impact on project cost, schedule, scope, and performance. Subsequently, these changes could invoke a change control protocol for obtaining approvals from entities in external systems, such as the service providers, regulators, financiers, and government authorities.

While it is possible to predict some of the changes in advance, many changes that can impact the project during its life cycle emerge in real time. With systemic thinking, including constant attention to internal and external conditions, the project team can navigate a wide spectrum of changes and impacts to keep the project on track.

Systemic thinking also applies to how the team views itself and its interactions within the project system. The project system brings together a diverse team engaged in working for a common objective. This diversity brings value to teams, but teams need to consider how to leverage those differences effectively, so that the team works cohesively. For example, if a government agency contracts a private company for development of a new technology, the development team may consist of members from both organizations. Those team members may have assumptions, ways of working, and mental models related to how they function within their home organization. In this new project system that combines the cultures of a private company and a government agency, the team members can establish a synthesized working environment. A common vision, language, and toolset will enable each team member to engage and contribute effectively and help to ensure that the project system works.

Because of the interactivity between systems, teams operate with awareness of and vigilance toward changing system dynamics. The following skills support a systems view of

the project:

- Critical thinking with a “big picture” focus;
- Challenging of assumptions and mental models;
- Seeking external review and advice;
- Use of integrated methods, artifacts, and practices so there is a “one team” view of project work, deliverables, and outcomes;
- Use of modeling and scenarios to envision how system dynamics may interact and react; and
- Proactive management of the integration to ensure business results.

Recognizing and responding to system interactions can lead to the following positive outcomes:

- Early consideration of variation and risk within the project, exploration of alternatives, and consideration of unintended consequences;
- Ability to adjust assumptions, constraints, and plans throughout the project life cycle;
- Provision of ongoing information and insights that inform planning and delivery;
- Clear communication of plans and projections to relevant stakeholders;
- Alignment of project goals and objectives to the larger organization’s goals, objectives, and vision;
- Ability to adjust to the changing needs of the end user, sponsor, or end receiver of the project deliverable;
- Ability to see synergies and savings between aligned projects or initiatives;
- Ability to exploit opportunities not otherwise captured or see threats posed to other projects or initiatives;
- Clarity regarding the best project performance measurement indicators and their influence on the behavior of the people involved in the project;
- Decisions that benefit the organization as a whole; and
- More comprehensive and informed identification of risks.

3.6 Motivate, Influence, Coach, and Learn

Demonstrate and adapt leadership behaviors to support individual and team needs.

Collaborative endeavors deliver stronger results. A team dynamic that prioritizes vision, motivation, enthusiasm, encouragement, and empathy can support individuals and their personal development. These traits are often associated with leadership. Leadership comprises the talent, character, and behaviors to influence individuals inside and outside the team toward the desired outcome.

Leadership is not exclusive to a role. Anyone working on a project can demonstrate leadership. People use effective leadership traits, styles, and skills to help the team perform and deliver the required results. Successful leadership enables someone to influence, motivate, direct, and coach people under any condition. It also incorporates characteristics derived from an organization’s culture and practices.

Leadership should not be confused with *authority*, which is the designation given to individuals within an organization to foster overall effective and efficient function. Authority is the right to exercise power. Authority is usually delegated to a person by formal means such as a charter document or designated title. This person may then have a role or position description that indicates their authority. Authority denotes

accountability for certain activities, actions of individuals, or decision making in certain circumstances. While individuals may use their authority to influence, motivate or direct others, and even act when others do not perform or act as directed or requested, this is not the same as leadership. For example, organizational executives may grant someone the authority to form a team to deliver an outcome. However, authority alone is insufficient. It takes leadership to motivate a group toward a common goal, influence them to align their individual interests in favor of collective effort, and achieve success as a team rather than as individuals.

Leaders draw from or combine elements of various styles of leadership. A given style represents different blends of assertiveness and supportiveness. No one leadership style is the universally best or recommended approach. Instead, effective leaders adapt their style to a given situation. Factors that inform the right blend of leadership styles include, but are not limited to, timeframe, delivery approach, and familiarity with the task.

Leadership ability is not static. It can be learned and developed so that it becomes a professional asset to the individual and a benefit to the project. A project team member deepens leadership acumen by adding or practicing a combination of various skills or techniques. When needs and circumstances demand, effective leaders know when to shift between styles. They also leverage complementary leadership skills, including but not limited to:

- Focusing a team around a common objective,
- Articulating a motivating vision for the project goals,
- Gaining support and resources for the project,
- Generating consensus on the best way forward,
- Removing obstacles to project progress,
- Negotiating and resolving conflict within the team and between the team and other stakeholders,
- Adapting communication style and messaging so that they are relevant to the audience,
- Coaching and mentoring fellow team members,
- Recognizing contributions and uplifting morale,
- Providing opportunities for skill growth and development,
- Facilitating collaborative decision making,
- Practicing active listening for effective conversations, and
- Empowering team members and delegating responsibilities to them.

Personal character matters in a leader. A person may have strong ability in leadership skills but may also be perceived as self-serving or untrustworthy. Effective leaders seek to be a role model in areas of honesty, integrity, and ethical conduct. Effective leaders focus on being transparent, behave unselfishly, and are able to ask for help. Effective leaders understand that team members scrutinize and emulate the values, ethics, and behaviors that leaders exhibit. Therefore, leaders have an additional responsibility to demonstrate expected behaviors through their actions.

Projects work best when leaders understand what motivates people. Project teams can thrive when team members use appropriate leadership traits, skills, and characteristics. Knowing how to best communicate with or motivate people, or take action when required, can help improve team performance and manage obstacles to project success. When practiced by more than one person on a project, leadership can foster shared responsibility toward the project goal, which can in turn foster a healthy and vibrant environment.

Effective leadership promotes project success and contributes to positive project outcomes. Teams, individual team members, and other stakeholders are engaged and supported throughout a well-led project. Each team member can focus on delivering results, using a common vision and working toward shared outcomes. Teams maintain an ethical and adaptable environment with effective leadership.

Additionally, business obligations can be fulfilled based on delegated responsibility and authority. Shared leadership does not undermine or diminish the role or authority of a leader designated by the organization, nor does it diminish the need for that leader to apply the right leadership style and skills at the right time.

3.7 Tailor the Delivery Approach Based on Context

Tailor the delivery approach based on context.

- ⇨ Each project is unique.
- ⇨ Project success is based on adapting to the unique context of the project to determine the most appropriate methods of producing the desired outcomes.
- ⇨ Tailoring the approach is iterative, and therefore is a constant process throughout the project.

Design the project delivery approach based on the context of the project, its objectives, stakeholders, and the environment using "just enough" process to achieve the desired outcome while maximizing value, managing cost, and enhancing speed.

Project success is based on adapting to the unique objectives, stakeholders, and complexity of the environment. Teams tailor the appropriate framework that will enable the flexibility to consistently produce results within the context of the life cycle. The business environment, team size, degree of uncertainty, and complexity of the project all factor into how frameworks are tailored. Project delivery systems can be tailored with a holistic perspective, including consideration of the interrelated complexities. Tailoring aims to maximize value, manage constraints, and improve performance by using "just enough" processes, methods, templates, and artifacts to achieve the desired outcome from the project.

The team discusses and decides on the delivery approach and resources required for producing results and outcomes on a project-by-project basis. This includes the selection of the processes to use, development approach, life cycle, methods, and artifacts needed to deliver the project outcomes. Tailoring decisions can be an implicit action of accepting an established methodology. Conversely, tailoring can be an explicit action of selecting and mixing specific elements to suit the unique characteristics of the project and the project environment. Tailoring is necessary to some degree in every project, because each project exists in a particular context.

Every project is unique, even when the deliverable of the project does not seem unique. This is because project contexts differ. For example, car models change frequently. Each model exists within a specific context. Context includes elements such as the team, the technology of the moment, the customer use of the product, and the sales channels for the product. Because the organization, its customers, its channels, and its environment are dynamic elements, the context for each new model of the car changes. Those changes and ongoing learning may cause project teams to use or develop different methods or approaches in pursuit of success. The team should examine the unique set of conditions for each project, so that they can determine the most appropriate methods of producing the desired result.

An existing methodology or common way of working also informs the way in which a project is tailored. A methodology is a system of practices, techniques, procedures, and rules used by those who work in a discipline. Project teams may be required to assume the methodology of the parent organization. That is, the team adopts a system of processes, governance, methods, and templates that provide guidance on how to run the project. While this provides a degree of consistency to projects within an organization, the methodology itself still needs tailoring to suit each project. Organizational policies and procedures prescribe authorized boundaries within which the team can tailor.

Teams also factor in the cost of project management processes to a project, for example costs associated with a team member's time, materials, or other resources needed to use the processes, methods, or artifacts. Processes that are not tailored may add little value to project delivery or the outcomes while increasing cost and lengthening schedule. Tailoring the delivery approach along with appropriate processes, methods, and artifacts can help teams make decisions about process-related costs and the related value contribution to project outcomes.

In addition to deciding on how to tailor an approach, project teams communicate the tailoring decisions across the team. Each member of the project team is aware of the chosen methods and processes that relate to that person and their role.

Tailoring the project approach to suit the unique characteristics of the project and its

environment can contribute to a higher level of project performance and an increased probability of success. A tailored project approach can produce direct and indirect benefits to organizations, such as:

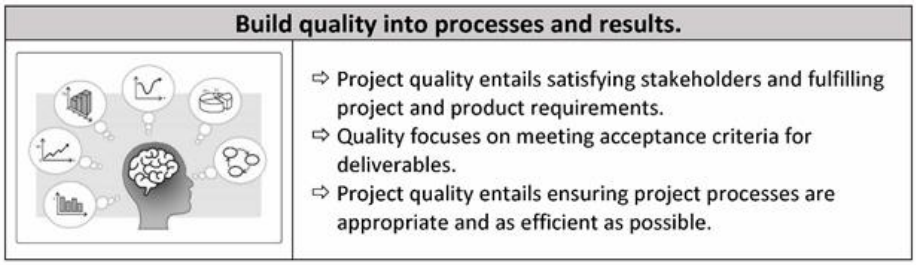
- Deeper commitment from team members, because they took part in defining the approach;
- Customer-oriented focus, as the needs of the customer are an important influencing factor in the tailoring of the project; and
- More efficient use of project resources, as teams are conscious of the weight of project processes.

Tailoring projects can lead to the following positive outcomes:

- Increased innovation, efficiency, and productivity;
- Lessons learned, so that improvements from a specific delivery approach can be shared and applied to future projects;
- Further improvement of an organization's methodology, with new practices, methods, and artifacts;
- Discovery of improved outcomes, processes, or methods through experimentation; and
- Effective integration within multidisciplinary teams of methods and practices used to deliver project results.

Tailoring an approach is iterative in nature, and therefore is a constant process itself during the project life cycle. Teams collect feedback from all stakeholders on how the methods and tailored processes are working for them as the project progresses to evaluate their effectiveness.

3.8 Build Quality into Processes and Results



Maintain a focus on quality that produces results that meet project objectives and aligns to the needs, uses, and acceptance requirements set forth by key stakeholders.

Quality is the degree to which a set of inherent characteristics of a product, service, or result fulfills the requirements. Additionally, quality refers to the ability to satisfy the customer's stated or implied needs. The result of a project is measured for the quality of both the conformance to acceptance criteria and fitness for use.

Quality may have several different dimensions, including but not limited to the following:

- **Performance.** Does the result function as the project stakeholders and team intended?
- **Conformity.** Is the result fit for use and does it meet the designated specifications?
- **Reliability.** Does the result produce consistent metrics each time it is performed or produced?
- **Resilience.** Is the result able to cope with unforeseen failures and quickly recover?
- **Satisfaction.** Does the result elicit positive feedback from users? This includes usability and user experience.
- **Uniformity.** Does the result show parity with other results produced in the same manner?
- **Efficiency.** Does the result produce the greatest output with the least amount of effort?

Project teams measure quality using metrics and acceptance criteria based on requirements. A requirement is a condition or capability that is necessary to be present in a product, service, or result to satisfy a business need. Requirements, either explicit or implicit, may come from stakeholders, a contract, organizational policies, standards, regulatory bodies, or a combination of these. Quality is closely linked to the product acceptance criteria as described in the statement of work or other design documents. These criteria should be validated as part of the acceptance process.

Quality is also relevant to the project approaches and activities used to produce the project's deliverable. While project teams evaluate the quality of a deliverable through inspection and testing, project activities and processes are assessed through reviews. In both instances, quality activities may focus on detection or prevention of errors and defects.

Project teams adapt their approach to ensure quality. For example, a customer may want or need more than can be delivered given financial or time constraints. In this case, requirements are prioritized so that key stakeholders can analyze the relative value of requirements against one another and make decisions. Prioritization helps stakeholders focus on the most critical requirements.

The objective of quality activities is to ensure that what is delivered meets the needs and objectives of the customer or end user. Taking the most straightforward path from start to finish minimizes the waste of resources and maximizes the probability of attaining the desired outcome. As a result, the following effects can be observed:

- Project activities focus on moving the product, service, or deliverable quickly to the point of delivery.
- Project activities focus on preventing defects in the deliverable or identifying them early to avoid or reduce the need for rework and scrap.

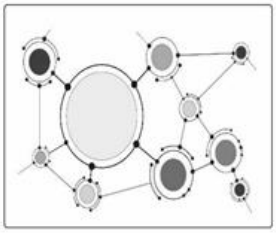
The objective and high-level quality activities are the same whether dealing with an up-front, well-defined set of requirements or a set of requirements that are progressively elaborated and incrementally delivered.

Quality produces deliverables and outcomes that meet project objectives and that align to the needs, uses, and acceptance criteria expressed by the organization and relevant stakeholders. Close attention to quality in project processes and deliverables creates positive results, including:

- Project results that are fit for use, as defined by acceptance criteria,
- Project deliverables that meet stakeholder expectations and business objectives,
- Project deliverables with few or no defects,
- Timely or expedited delivery,
- Enhanced cost control,
- Increased quality of product delivery,
- Reduced rework,
- Reduced customer complaints,
- Good supply chain integration,
- Improved productivity,
- Robust service delivery, and
- Improved decision making.

3.9 Address Complexity

Address complexity.



- ⇨ Complexity is the result of human behavior, system interactions, and uncertainty and ambiguity.
- ⇨ Complexity can emerge at any point during the project.
- ⇨ Complexity can be introduced by events or conditions that affect value, scope, communications, stakeholders, risk, innovation, and technologies.
- ⇨ Teams can stay vigilant in identifying elements of complexity and use a variety of methods to reduce the amount or impact of complexity.

Continually evaluate and address complex project elements so that approaches and plans can successfully navigate the project life cycle.

A project is a system of elements that interact with each other. The nature and number of the interactions determine the degree of complexity in a project. Complexity emerges from project elements, interactions between project elements, and interactions with other systems, such as the environment in which project work takes place. Addressing complexity is challenging because of the structure of the project system and the rate at which change

occurs. It can be neither managed nor controlled, but teams can address it.

Project teams often cannot foresee complexity because it is the result of many interactions such as risks, dependencies, events, or relations. Alternatively, a few causes may converge to produce a single complex effect, which makes isolating a specific cause of complexity difficult.

Within project delivery, complexity is a characteristic of the project system and the individual elements within the system. For example, complexity within a project may be amplified with a greater number or diversity of stakeholders, such as regulatory agencies, international financial institutions, multiple vendors, numerous specialty subcontractors, or local communities. These stakeholders can have a significant impact on the structural complexity of a project, both individually and collectively.

Among the many sources of complexity, the foremost are:

- **Human behavior.** The interplay of conduct, demeanors, and attitudes of people. Human behavior also contributes to complexity by introducing elements of subjectivity.
- **System behavior.** The result of dynamic interdependencies within and among project elements. For example, the integration of different technology systems may cause threats that could impact project results and success. The interactions among components of the project system may lead to interconnected risk, create emerging or unforeseeable issues, and produce unclear and disproportional cause-and-effect relationships.
- **Ambiguity.** A state of being unclear, of not knowing what to expect, or how to comprehend a situation. Ambiguity can arise from having many options, yet a lack of clarity on the optimal choice. Unclear or misleading events, emerging issues, or subjective situations can also lead to ambiguity.
- **Uncertainty.** A lack of understanding and awareness of issues, events, paths to follow, or solutions to pursue. Uncertainty may increase and amplify issues, risks, behaviors, or situations which are internal and external to a project. Uncertainty includes *unknown-unknowns*, which are emerging factors that are completely outside of existing knowledge or experience.

Complexity may emerge and create an impact on the project at any point in its life cycle. It often surfaces in one of these areas:

- **Value.** The value of project outcomes shifts as the external environment changes, stakeholder needs shift, scope evolves, schedules change, issues arise, and so forth. The expected value of the project results may increase or decrease or may be delivered earlier or later than originally expected. In extreme cases, the project may be cancelled because there is no longer enough value to justify the continued investment.
- **Scope.** In a complex environment, it is frequently impossible to define completely the project scope in its initial stages. As the project unfolds and the team learns more about the deliverable and the intended outcomes, the initial scope will likely undergo changes. Some changes may be disruptive, presenting the team with challenges in controlling both the project work and the relationships among stakeholders.
- **Communications.** Complexity can emerge from having many communication sources. These sources include communication in global, multisite projects; project teams or organizations that operate in diverse languages, cultures, or political structures; virtual teams; and the proliferation of professional and social communication channels.
- **Stakeholders.** Stakeholders introduce complexity in several ways. They often have competing interests on a project. Social and political stakeholder interactions may produce difficult conditions for the project team. Stakeholders may have strong and diverse opinions regarding processes and methods for managing the project. Some stakeholders may also leave the project along the way, and new stakeholders may introduce ideas different from those of the previous stakeholders.
- **Risk.** Complex conditions present an environment with an increased level of risk. This risk is associated with the individual causes of complexity and by the interdependencies among, and combinations of, a project's identified risks. These risks can present opportunities or threats.
- **Innovation and disruptive technologies.** The speed of technological advancements, including the Internet of Things (IoT), artificial intelligence (AI), blockchain, and unknown unknowns, means that new and innovative solutions to problems and new ways of working arise continuously. These have the potential to help move the project toward a solution or to disrupt the project with more change and increased complexity.

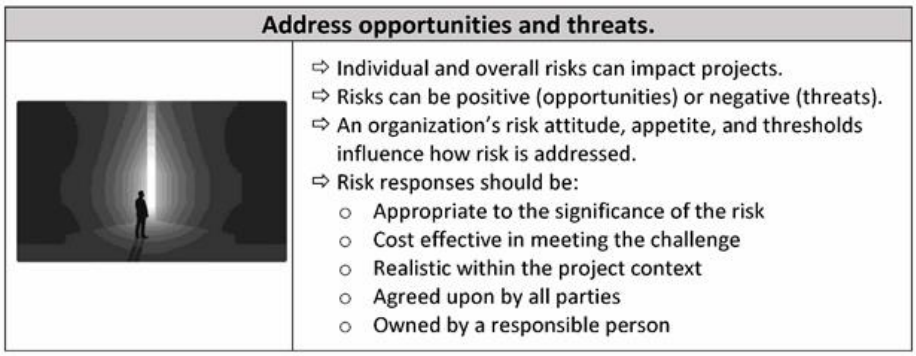
Some types of projects are prone to higher levels of complexity than others. For example,

projects with lengthy durations may encounter complexity because much within and outside of the project may change as time passes. Complex elements may introduce additional interdependencies, which in turn may further increase the level of complexity within the project.

Project teams can identify elements of complexity throughout the project by constantly looking at the project system as well as its component parts for signs of complexity. Teams can also use a variety of methods to experiment and clarify requirements to help reduce complexity.

Knowledge of complex systems, experience from past project work, experimentation, and continuous learning related to system interaction lead to the project team's increased ability to navigate complexity when it emerges. Understanding the layered nature of complexity and being vigilant for signs of it allows teams to adapt their approaches and plans to control any potential disruption to effective project delivery.

3.10 Address Opportunities and Threats



Consistently evaluate exposure to risk, both opportunities and threats, to harness positive change and minimize negative impacts to the project's outcomes, thereby maximizing the value contribution of the project.

A *risk* is an event or condition that, if it occurs, can have a positive or negative effect on one or more objectives. Risks may or may not materialize in a project. Project teams identify and evaluate known and emergent risks, both within and outside of the project, early and throughout the life cycle.

Project teams aim to capture positive risks (opportunities) to the extent possible while decreasing the potential impact of negative risks (threats). Threats may result in issues such as delay, cost overrun, technical failure, performance shortfall, or loss of reputation. Opportunities can lead to benefits such as reduced time and cost, improved performance, increased market share, or enhanced reputation.

Teams also monitor the overall project risk. Overall project risk is the effect of uncertainty on the project as a whole. Overall risk arises from all sources of uncertainty, including individual risks, and represents the exposure of the stakeholders to the implications of variations in project outcome, both positive and negative. Management of overall project risk aims to keep project risk exposure within an acceptable range. Management strategies include reducing drivers of negative variation, promoting drivers of positive variation, and maximizing the probability of achieving overall project objectives.

Project teams assess an organization's risk attitude, which is a function of risk appetite and risk threshold. They hold discussions with project stakeholders as the primary source of understanding these factors.

- **Risk attitude** describes a disposition toward uncertainty, adopted explicitly or implicitly by individuals and groups, driven by perception, and evidenced by observable behavior.
- **Risk appetite** describes the degree of uncertainty an organization or individual is willing to accept in anticipation of a reward.
- **Risk threshold** is the measure of acceptable variation around an objective that reflects the risk appetite of the organization and stakeholders.

These parameters for risk can prescribe how the project team navigates risk in a project. For example, as a result of a risk intervention, the team may identify an opportunity that could greatly increase the value of the project deliverable. However, the team assesses risk in the context of the organization's culture to determine the probability of capturing value. Then the team considers the organization's appetite for taking a risk, including how much change it is able or willing to tolerate. Consideration of the attitude, appetite, and threshold for risk can determine whether the risk presents a threat or an opportunity, whether or not to engage with the risk, and the proposed actions that the team would take in response.

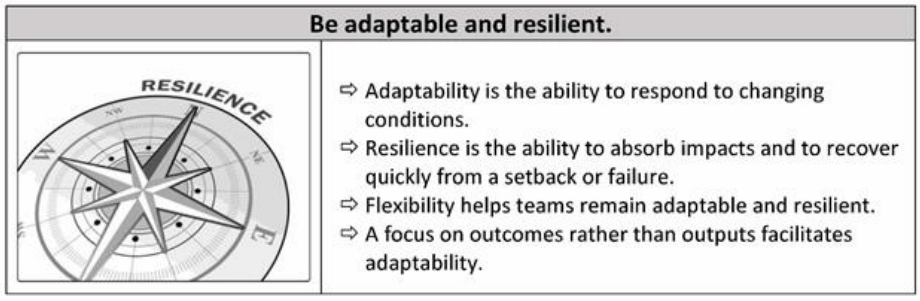
Effective and appropriate risk responses can minimize individual threats, maximize individual opportunities, and reduce or optimize overall project risk exposure, depending on the risk. Project teams identify potential risk responses with the following characteristics in mind:

- Appropriate for the significance of the risk,
- Cost-effective in meeting the challenge,
- Realistic within the project context,
- Agreed upon by all parties involved, and
- Assignable to a single individual.

Because projects are part of a system of systems, risks can exist within the enterprise, portfolio, program, and project. The project may be a component of a program in which the risk can potentially enhance or diminish benefits realization and, therefore, value. The project may be a component of a portfolio of related or unrelated work in which the risk can diminish or enhance overall value of the portfolio and realization of business objectives.

Organizations and project teams that rely on proactive risk evaluation and planning often find the effort to be less costly than simply reacting to issues when the risk materializes, and a proactive approach is proven to be more effective. Proactive risk analysis and response planning often maximize the value contribution of the project.

3.11 Be Adaptable and Resilient



Build adaptability and resilience into the organization's and project team's approaches to help the project accommodate change, recover from setbacks, and advance the work of the project.

Most projects encounter challenges or obstacles at some stage. The combined attributes of adaptability and resilience in the team's approach to a project help to ensure that the project can accommodate impacts and thrive. *Adaptability* refers to the ability to respond to changing conditions. *Resilience* consists of two complementary traits: the ability to absorb impacts and the ability to recover quickly from a setback or failure. Both adaptability and resilience are essential characteristics for anyone working on project delivery.

A project rarely proceeds exactly as planned. Projects are influenced by internal and external factors—new requirements, issues, and stakeholder influence, for example. Some elements within a project may fail or fall short of expectation, requiring the team to regroup, rethink, and replan. On an infrastructure project, for example, a court decision during project execution could change designs and plans. In a technology project, a computerized model of the technology might show that the components work together properly, but the real-world application fails. In both cases, the project team has to address the situation in order to move the project forward. The view that projects should

hold firm to plans and commitments made during the early stages, even after new or unforeseen factors emerge, is untenable.

In a project environment, capabilities which support adaptability and resilience include:

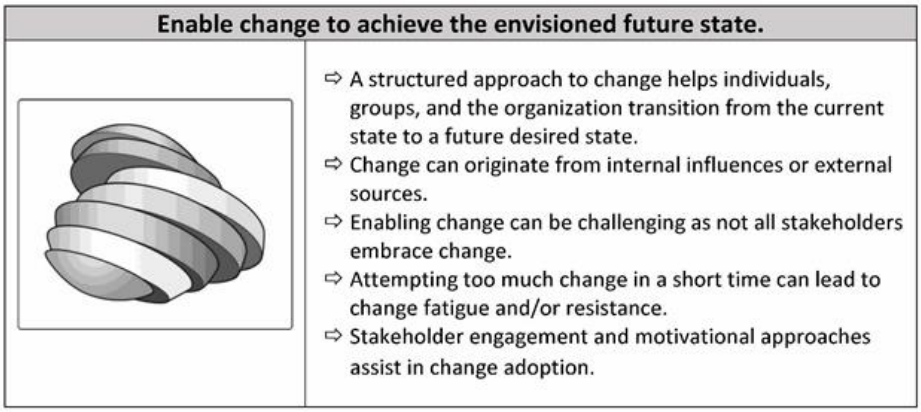
- Short feedback loops to adapt quickly,
- Continuous learning and improvement,
- A team with broad skill sets, coupled with individuals with extensive knowledge in each required skill area,
- Regular inspection and adaptation of project work to identify improvement opportunities,
- Diverse teams to capture a broad range of experiences,
- Open and transparent planning that engages internal and external stakeholders,
- Small-scale prototypes and experiments to test ideas and try new approaches,
- Ability to leverage new ways of thinking and working,
- Process design that balances speed and stability, and
- Open organizational conversations.

Envisioning outcomes rather than deliverables can engender a greater space for solutions, harnessing a better project result than the one originally planned. For example, a project team may find an alternative solution that would provide stronger outcomes than the original defined deliverable. While exploration of alternatives is usually the purview of the business case, technologies and other capabilities are evolving so rapidly that a solution could emerge at any time between completion of the business case and project closure. So-called emergent opportunities can arise during a project, and project teams might make a case to the project sponsor or product owner for capturing the opportunity. The project team should be prepared to adapt its plans and activities to take advantage of the opportunity, with the support of the project sponsor or product owner.

Unexpected changes and circumstances in a project system can also present opportunities. To optimize value delivery, teams should use problem-solving as well as a holistic-thinking approach to changes and unplanned events. When an unplanned event occurs, teams should look for potential positive outcomes that might be gained. For example, incorporating a change that occurs late in a project timeline could add competitive advantage to an outcome by being the first product in the market to offer the feature.

Building resilience and adaptability in project team members ensures that they can adapt to changing conditions inside and outside of the project. These capabilities keep teams focused on the desired outcome while providing some level of flexibility to adapt the delivery path. These characteristics also help teams learn and improve so that they can quickly recover from failures or setbacks and continue making progress toward delivering results.

3.12 Enable Change to Achieve the Envisioned Future State



Prepare those impacted for the adoption and sustainment of new and different behaviors and processes required for the transition from the current state to the intended future state created by the project outcomes.

Remaining relevant in the today's business environment is a fundamental challenge for all organizations. Relevance entails being responsive to customer needs and desires. This

requires continually evaluating offerings for the benefit of customers, rapidly responding to changes, and acting as agents for change. Project delivery professionals are uniquely poised to keep an organization relevant. Projects, by their very definition, create something new: they are agents of change.

Change management, or enablement, is a comprehensive, cyclic, and structured approach for transitioning individuals, groups, and organizations from a current state to a future state in which they realize desired benefits. It is different from project change control, which is a process whereby modifications to documents, deliverables, or baselines associated with the project are identified and documented, and then are approved or rejected.

Change in an organization can originate from internal sources, such as the need for a new capability or in response to a performance gap. Change also can originate from external sources such as technological advances, demographic changes, or socioeconomic pressures. Any type of change involves some level of adaptability or assimilation by the group experiencing it.

Change is implemented by and has consequences for stakeholders, and project teams must consider the human impact of change on stakeholders. For example, the application of a project deliverable—a modified process, a new product, a change to service—requires one or more stakeholders to change or adapt in some way. Enabling stakeholder change is part of ensuring that the project delivers the required result as well as the intended outcome.

Enabling change in an organization can be challenging. People may seem inherently resistant to change, or risk averse, and environments may display a conservative culture, among other reasons. Effective change management uses a motivational strategy rather than a forceful one. Engagement and two-way communication create an environment in which adoption and assimilation of change can occur.

Project team members can work with relevant stakeholders to address change resistance, change fatigue, and change absorption and ensure that change will be adopted or assimilated successfully by customers or recipients of project results. This includes communicating the vision and goals associated with the change early in the project to achieve buy-in for the change. The benefits of the change and the impact to work processes should be communicated with all levels of the organization throughout the project.

It is also important to adapt the speed of change to the ability of the stakeholders and the environment to assimilate change. Attempting to create too many changes in too short a time can lead to resistance because of change saturation. Even when stakeholders unanimously agree that change will produce exponentially more value or enhance outcomes, they often still have difficulty working through the actions that will deliver enhanced benefits.

Recognizing and addressing the needs of stakeholders to embrace the need for change throughout the life cycle helps to ensure that the resulting change integration is included in the project work and leads to successful outcomes.