



Understanding Best Practices

1.0 INTRODUCTION

Project management has evolved from a set of processes that were once considered “nice to have” to a structured methodology that is considered mandatory for the survival of the firm. Companies are now realizing that their entire business, including most of the routine activities, can be regarded as a series of projects. Simply stated, we are managing our business through projects.

Project management is now regarded as both a project management process and a business process. Therefore, project managers are expected to make business decisions as well as project decisions. The necessity of achieving project management excellence is now readily apparent to almost all businesses.

As the relative importance of project management permeates each facet of the business, knowledge of best practices in project management is captured. Some companies view this knowledge as intellectual property to be closely guarded in the vaults of the company. Others share this knowledge in hope of discovering other best practices. Companies are now performing strategic planning for project management because of the benefits and its contribution to sustainable business value.

One of the benefits of performing strategic planning for project management is that it usually identifies the need for capturing and retaining best practices. Unfortunately, this is easier said than done. One of the reasons for this difficulty, as is seen later in the chapter, is that companies today are not in agreement on the definition of a best practice, nor do they understand that best practices lead to continuous improvement, which in turn leads to the capturing of more best practices. Many companies also do not recognize the value and benefits that can come from best practices.

Today, project managers are capturing best practices in both project management activities and business activities. The reason is simple: The best practices are intellectual property that encourages companies to perform at higher levels. Best practices lead to added business value, greater benefits realization, and better benefits management activities. Project management and business thinking are no longer separate activities.

Project management is now regarded as the vehicle that provides the deliverables that create business benefits and business values. In the last few years, there has been a tremendous growth in the need for capturing best practices related to benefits realization management and value creation.

1.1 WÄRTSILÄ¹

Benefits Management in Operational Development Projects in Wärtsilä

Wärtsilä has a strong tradition of project-based businesses and project management practices. Because of this, a corporate-wide project management office (PMO) was established in 2007 to further strengthen the focus on project management competence within the group and to develop a project management culture, processes, competencies, and tools.

Today, project management structures and ways of working have become a fundamental part of Wärtsilä's business thinking. The business process model has gradually shifted from being a somewhat disordered process to a harmonized model, enabling the implementation of unified guidelines, targets, and terminology. The company has approached this implementation of project management practices from two different but equally important aspects. First, a project management tool providing, inter alia, more effective resource and schedule planning has been introduced and implemented. Second, the organization has been encouraged to actively participate in professional project management training and certification paths.

As the project management processes have become well-defined and have gained maturity, the emphasis has gradually shifted toward benefits management in operational development projects. The initiative to improve benefits management processes stems from the mission of the Wärtsilä PMO for Operational Development, which is to ensure synergies between Wärtsilä's business units that would help enable businesses to transform their strategic ambitions into daily operations. This would be achieved by providing management and expertise in terms of change management, business processes, and application development.

In traditional project management, projects are often measured in terms of budget, schedule, scope, or quality. Benefits management as a concept, however, focuses more on the actual value that the projects are able to deliver to the end customer. In other words, project success is not measured solely in terms of time or money. Quite the opposite, measuring the success of a project comes from the end user: Did this solution fulfill the user's needs? As the concept of value is rather vague, it is of the utmost importance that the benefits have concrete metrics and measurements. This concerns also so-called soft, intangible benefits. Although they cannot be quantified financially, they must be measured. Another important aspect of benefits planning is creating a valid

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baseline to compare the results with. Instead of comparing only to a business-as-usual situation, the results gained from the benefit realization measurements should be compared to other alternative scenarios (“Could this have been achieved some other way?”).

In operational development projects, the output of the project can be, for example, an information technology (IT) tool made to improve resource planning. The most crucial part of the project, however, is making the *output* into a project *outcome*. This means that the project output (in this case, an IT tool) should become a part of the end user’s way of working. In order to make this happen, the benefits planning must consider two important aspects:

1. What does the end user want and need?
2. What has to change in order to make this happen?

With proper end-user expectation management and change management, the risk of the project output becoming just another tool in the toolbox can be avoided.

In a nutshell, the benefits management system should consist of the following elements:

- *Identifying the driver for the project.* Do we really need this investment? Who else is going to benefit from it?
- *Identifying the key benefits.* What are the benefits and when will they occur? What is their proximity (how likely are they to happen)?
- *Estimating the benefits.* Defining a clear baseline for the measurements allows us to define clear metrics (which apply to the entire portfolio of projects) and provides us with consistency throughout all life-cycle phases, from project initiation to benefit realization. The critical question we must ask is: Do these metrics tolerate changes in the business environment?
- *Linking the benefits with change.* How does the organization have to change in order to enable the benefits realization? How can we enable this change? Plan the deployment and adjust it to (business) environmental changes (organizational changes, market situation changes, etc.).
- *Who is accountable for the benefit?* Define a person/organization responsible for the benefits realization.
- *Monitoring benefits.* Monitor your performance with the established metrics, improve it if needed toward the defined goal, and acknowledge risks in a proactive way.
- *Doing a postproject evaluation.* Ensure a successful deployment by communicating about the project output and honestly promoting it. Imagine yourself in the end user’s position: Would you like to use this tool?
- *Learning from your mistakes.* Ensure that project success points and failures are equally handled. Focus on honest communication and learning, not blaming. Examples should come all the way from the executive level.

1.2 PROJECT MANAGEMENT BEST PRACTICES: 1945–1960

During the 1940s, line managers functioned as project managers and used the concept of over-the-fence management to manage projects. Each line manager, temporarily wearing the hat of a project manager, would perform the work necessitated by his or her line organization and, when that was completed, would throw the “ball” over the fence in the hope that someone would catch it. Once the ball was thrown over the fence, the line managers would wash their hands of any responsibility for the project because the ball was no longer in their yard. If a project failed, blame was placed on whichever line manager had the ball at that time.

The problem with over-the-fence management was that the customer had no single contact point for questions. The filtering of information wasted precious time for both the customer and the contractor. Customers who wanted firsthand information had to seek out the manager in possession of the ball. For small projects, this was easy. However, as projects grew in size and complexity, this became more difficult.

During this time, very few best practices were identified. If there were best practices, then they would stay within a given functional area, never to be shared with the remainder of the company. Suboptimal project management decision-making was the norm.

Following World War II, the United States entered into the Cold War with the Soviet Union. To win the Cold War, the United States had to compete in an arms race and rapidly build weapons of mass destruction. The victor in a cold war is the side that can retaliate with such force as to obliterate the enemy. Development of weapons of mass destruction involved very large projects involving potentially thousands of contractors.

The arms race made it clear that the traditional use of over-the-fence management would not be acceptable to the Department of Defense (DoD) for projects such as the B52 bomber, the Minuteman intercontinental ballistic missile, and the Polaris submarine. The government wanted a single point of contact, namely, a project manager who had total accountability through all project phases. In addition, the government wanted the project manager to possess a command of technology rather than just an understanding of technology, which mandated that the project manager be an engineer, preferably with an advanced degree in some branch of technology. The use of project management was then mandated for some smaller weapon systems, such as jet fighters and tanks. The National Aeronautics and Space Administration (NASA) mandated the use of project management for all activities related to the space program.

Many projects in the aerospace and defense industries were having cost overruns in excess of 200–300 percent. Blame was erroneously placed on improper implementation of project management when, in fact, the real problem was the inability to forecast technology, resulting in numerous scope changes occurring. Forecasting technology is extremely difficult for projects that could last 10–20 years.

By the late 1950s and early 1960s, the aerospace and defense industries were using project management on virtually all projects, and they were pressuring their suppliers to use it as well. Project management was growing, but at a relatively slow rate, except for aerospace and defense.

Because of the vast number of contractors and subcontractors, the government needed standardization, especially in the planning process and the reporting of information. The government established a life-cycle planning and control model and a cost-monitoring system and created a group of project management auditors to make sure that the government's money was being spent as planned. These practices were to be used on all government programs above a certain dollar value. Private industry viewed these practices as an overmanagement cost and saw no practical value in project management. If any best practices were captured at that time, they were heavily focused on improvements to the standardized forms the DoD used.

Because many firms saw no practical value in project management in their early years, there were misconceptions about it. Some of the misconceptions included:

- Project management is a scheduling tool like PERT/CPM (program evaluation and review technique/critical path method) scheduling.
- Project management applies to large projects only.
- Project management is designed for government projects only.
- Project managers must be engineers, preferably with advanced degrees.
- Project managers need a command of technology to be successful.
- Project success is measured in technical terms only. (Did it work?)

1.3 PROJECT MANAGEMENT BEST PRACTICES: 1960–1985

Between 1960 and 1985, a better understanding of project management existed. Growth in the field had come about more through necessity than through desire, but at a very slow rate. Its slow growth can be attributed mainly to lack of acceptance of the new management techniques necessary for successful implementation of project management. An inherent fear of the unknown acted as a deterrent for both managers and executives.

Other than aerospace, defense, and construction, the majority of companies in the 1960s managed projects informally. In informal project management, just as the words imply, projects were handled on an informal basis, and the authority of the project manager was minimized. Most projects were handled by functional managers and stayed in one or two functional lines, and formal communications were either unnecessary or handled informally because of the good working relationships between line managers. Those individuals who were assigned as project managers soon found that they were functioning more as project leaders or project monitors than as real project managers. Many organizations today, such as low-technology manufacturing, have line managers who have been working side by side for 10 years or more. In such situations, informal project management may be effective on capital equipment or facility development projects, and project management is not regarded as a profession.

By 1970 and through the early 1980s, more companies departed from informal project management and restructured to formalize the project management process, mainly because the size and complexity of their activities had grown to a point where they were unmanageable within the current structure.

Not all industries need project management, and executives must determine whether there is an actual need before making a commitment. Several industries with simple tasks, whether in a static or a dynamic environment, do not need formalized project management. Manufacturing industries with slowly changing technology do not need project management, unless, of course, they have a requirement for several special projects, such as capital equipment activities, that could interrupt the normal flow of work in the routine manufacturing operations. The slow growth rate and acceptance of project management were related to the fact that the limitations of project management were readily apparent, yet the advantages were not completely recognizable. Project management requires organizational restructuring. The question, of course, is “How much restructuring?” Executives avoided the subject of project management for fear that “revolutionary” changes would have to be made in the organization.

Project management restructuring has permitted companies to:

- Accomplish tasks that could not be effectively handled by the traditional structure
- Accomplish one-time activities with minimum disruption of routine business

The second item implies that project management is a “temporary” management structure and, therefore, causes minimal organizational disruption. The major problems identified by those managers who endeavored to adapt to the new system all revolved around conflicts in authority and resources. Companies began to recognize the need for capturing best practices, especially those that could reduce some human behavior issues. Improvements in the methodologies were also taking place.

Another major concern was that project management required upper-level managers to relinquish some of their authority through delegation to middle managers. In several situations, middle managers soon occupied the power positions, even more so than upper-level managers.

Project management became a necessity for many companies as they expanded into multiple product lines, many of which were dissimilar, and organizational complexities grew. This growth can be attributed to four factors:

1. Technology increasing at an astounding rate
2. More money being invested in research and development (R&D)
3. More information being available
4. Shortening of project life cycles

To satisfy the requirements imposed by these four factors, management was “forced” into organizational restructuring; the traditional organizational form that had survived for decades was inadequate for integrating activities across functional “empires.”

By 1970, the environment began to change rapidly. Companies in aerospace, defense, and construction pioneered the implementation of project management, and other industries soon followed, some with great reluctance. NASA and the DoD “forced” subcontractors to accept project management.

Because current organizational structures are unable to accommodate the wide variety of interrelated tasks necessary for successful project completion, the need for

project management has become apparent. It is usually first identified by those lower-level and middle managers who find it impossible to control their resources effectively for the diverse activities within their line organization. Quite often, middle managers feel the impact of changing environment more than upper-level executives.

Once the need for change is identified, middle management must convince upper-level management that such a change is actually warranted. If top-level executives cannot recognize the problems with resource control, then project management will not be adopted, at least formally. Informal acceptance, however, is another story.

As project management developed, some essential factors for its successful implementation were recognized. The major factor was the role of the project manager, which became the focal point for integrative responsibility. The need for integrative responsibility was first identified in complex R&D projects.

The R&D technology has broken down the boundaries that used to exist between industries. Once-stable markets and distribution channels are now in a state of flux. The industrial environment is turbulent and increasingly hard to predict. Many complex facts about markets, production methods, costs, and scientific potentials are related to investment decisions in R&D.

All of these factors have combined to produce a king-size managerial headache. There are just too many crucial decisions to have them all processed and resolved at the top of the organization through regular line hierarchy. They must be integrated in some other way.

Providing the project manager with integrative responsibility resulted in:

1. Total project accountability being assumed by a single person
2. Project rather than functional dedication
3. A requirement for coordination across functional interfaces
4. Proper utilization of integrated planning and control

Without project management, these four elements have to be accomplished by executives, and it is questionable whether these activities should be part of an executive's job description. An executive in a Fortune 500 corporation stated that he was spending 70 hours each week working as both an executive and a project manager, and he did not feel that he was performing either job to the best of his abilities. During a presentation to the staff, the executive stated what he expected of the organization after project management implementation:

- Push decision-making down in the organization.
- Eliminate the need for committee solutions.
- Trust the decisions of your peers.

Those executives who chose to accept project management soon found the advantages of the new technique:

- Easy adaptation to an ever-changing environment
- Ability to handle a multidisciplinary activity within a specified period of time

- Horizontal as well as vertical workflow
- Better orientation toward customer problems
- Easier identification of activity responsibilities
- A multidisciplinary decision-making process
- Innovation in organizational design

As project management evolved, best practices became important. Best practices were learned from both successes and failures. In the early years of project management, private industry focused on learning best practices from successes. The government, however, focused on learning about best practices from failures. When the government finally focused on learning from successes, the knowledge of best practices came from its relationships with both prime contractors and subcontractors. Some of these best practices that came out of the government included:

- Use of life-cycle phases
- Standardization and consistency
- Use of templates (e.g., for statement of work [SOW], work breakdown structure [WBS], and risk management)
- Providing military personnel in project management positions with extended tours of duty at the same location
- Use of integrated project teams
- Control of contractor-generated scope changes
- Use of earned value measurement

1.4 PROJECT MANAGEMENT BEST PRACTICES: 1985–2016² ---

By the 1990s, companies had begun to realize that implementing project management was a necessity, not a choice. By 2016, project management had spread to virtually every industry, and best practices were being captured. In the author's opinion, the appearance of best practices by industry can be summarized as follows:

- 1960–1985: Aerospace, defense, and construction
- 1986–1993: Automotive suppliers
- 1994–1999: Telecommunications
- 2000–2003: Information technology
- 2004–2006: Health care
- 2007–2008: Marketing and sales
- 2009–Present: Government agencies, small businesses, and global acceptance of project management

2. Many of the comments made by executives in the remainder of this chapter and throughout the book have been taken from earlier editions of this book. The dates of the comments are not critical. But it is important to recognize how executives are now and have been viewing the growth of project management practices and the accompanying benefits.

The question now is not how to implement project management, but how fast can it be done? How quickly can we become mature in project management? Can we use the best practices to accelerate the implementation of project management?

Table 1–1 shows the typical life-cycle phases that an organization goes through to implement project management. In the first phase—the embryonic phase—the organization recognizes the apparent need for project management. This recognition normally takes place at the lower and middle levels of management, where the project activities actually take place. The executives are then informed of the need and assess the situation.

Six driving forces lead executives to recognize the need for project management:

1. Capital projects
2. Customer expectations
3. Competitiveness
4. Executive understanding
5. New project development
6. Efficiency and effectiveness

Manufacturing companies are driven to project management because of large capital projects or a multitude of simultaneous projects. Executives soon realize the impact on cash flow and that slippages in the schedule could end up idling workers.

Companies that sell products or services, including installation, to their clients must have good project management practices. These companies are usually non-project-driven but function as though they were project-driven. These companies now sell solutions to their customers rather than products. It is almost impossible to sell complete solutions to customers without having superior project management practices, because what you are actually selling is your project management expertise (i.e., your project management processes).

TABLE 1–1. FIVE PHASES OF THE PROJECT MANAGEMENT LIFE CYCLE

Embryonic	Executive Management Acceptance	Line Management Acceptance	Growth	Maturity
Recognize need	Get visible executive support	Get line management support	Recognize use of life-cycle phases	Develop a management cost/schedule control system
Recognize benefits	Achieve executive understanding of project management	Achieve line management commitment	Develop a project management methodology	Integrate cost and schedule control
Recognize applications	Establish project sponsorship at executive levels	Provide line management education	Make the commitment to planning	Develop an educational program to enhance project management skills
Recognize what must be done	Become willing to change your way of doing business	Become willing to release employees for project management training	Minimize creeping scope Select a project tracking system	

There are two situations where competitiveness becomes the driving force: internal projects and external (outside customer) projects. Internally, companies get into trouble when they realize that much of the work can be outsourced for less than it would cost to perform the work themselves. Externally, companies get into trouble when they are no longer competitive on price or quality or when they simply cannot increase their market share.

Executive understanding is the driving force in those organizations that have a rigid traditional structure that performs routine, repetitive activities. These organizations are quite resistant to change, unless it is driven by the executives. This driving force can exist in conjunction with any of the other driving forces.

New product development is the driving force for those organizations that are heavily invested in R&D activities. Given that only a small percentage of R&D projects ever make it to commercialization, where the R&D costs can be recovered, project management becomes a necessity. Project management can also be used as an early-warning system that a project should be canceled.

Efficiency and effectiveness, as driving forces, can exist in conjunction with any other driving forces. Efficiency and effectiveness take on paramount importance for small companies experiencing growing pains. Project management can be used to help such companies remain competitive during periods of growth and to assist in determining capacity constraints.

Because of the interrelatedness of these driving forces, some people contend that the only true driving force is survival. This is illustrated in Figure 1–1. When the company recognizes that survival of the firm is at stake, the implementation of project management becomes easier.

Enrique Sevilla Molina, PMP, formerly corporate PMO director, discusses the driving forces at Indra that necessitated the need for excellence in project management:

The internal forces were based on our own history and business experience. We soon found out that the better the project managers, the better the project results. This realization came together with the need to demonstrate in national and international

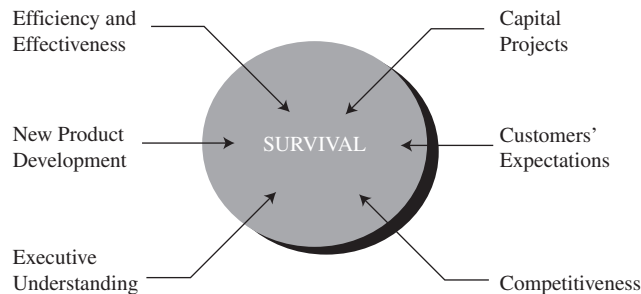


Figure 1–1. The components of survival.

Source: Reproduced from H. Kerzner, *In Search of Excellence in Project Management* (Hoboken, NJ: Wiley, 1998), p. 51/ John Wiley & Sons.

contracts, with both US and European customers, our real capabilities to handle big projects. These big projects required world-class project management, and for us managing the project was a greater challenge than just being able to technically execute the project. Summarizing, these big projects set the pace to define precise procedures on how handling stakeholders, big subcontractors and becoming a reliable main point of contact for all issues related with the project.

The speed at which companies reach some degree of maturity in project management is most often based on how important they perceive the driving forces to be. This is illustrated generically in Figure 1–2. Non-project-driven and hybrid organizations move quickly to maturity if increased internal efficiencies and effectiveness are needed. Competitiveness is the slowest path because these types of organizations do not recognize that project management affects their competitive position directly. For project-driven organizations, the path is reversed. Competitiveness is the name of the game, and the vehicle used is project management.

Once the organization perceives the need for project management, it enters the second life-cycle phase of Table 1–1, executive acceptance. Project management cannot be implemented rapidly in the near term without executive support. Furthermore, the support must be visible to all.

The third life-cycle phase is line management acceptance. It is highly unlikely that any line manager would actively support the implementation of project management without first recognizing the same support coming from above. Even minimal line management support will still cause project management to struggle.

The fourth life-cycle phase is the growth phase, where the organization becomes committed to the development of the corporate tools for project management. This includes the processes and project management methodology for planning, scheduling, and controlling, as well as selection of the appropriate supporting software. Portions of this phase can begin during earlier phases.

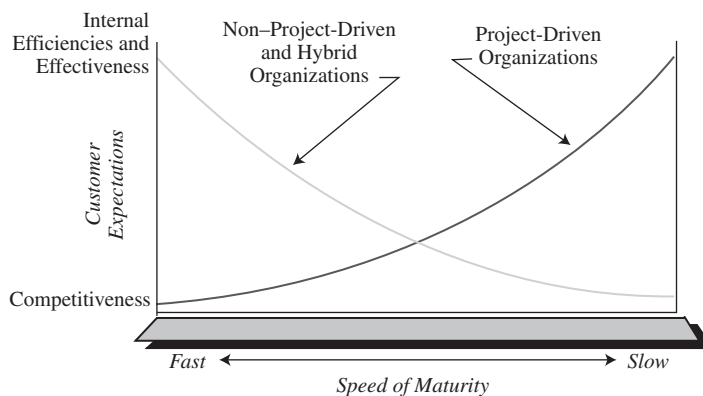


Figure 1–2. Speed of maturity.

The fifth life-cycle phase is maturity. In this phase, the organization begins using the tools developed in the previous phase. Here, the organization must be totally dedicated to project management. The organization must develop a reasonable project management curriculum to provide the appropriate training and education in support of the tools as well as the expected organizational behavior.

By the 1990s, companies finally began to recognize the benefits of project management. Table 1–2 shows the critical success factors (CSFs) and critical failure factors (CFFs) that have led to changes in our view of project management. Many of these factors were identified through the discovery and implementation of best practices.

By the 1990s, companies finally began to recognize the benefits of project management. Table 1–2 shows the critical success and CFFs that have led to changes in our view of project management. Many of these factors were identified through the discovery and implementation of best practices.

Recognizing that the organization can benefit from the implementation of project management is just the starting point. The question now becomes: How long will it take us to achieve these benefits? This can be partially answered by Figure 1–3. In the beginning of the implementation process, there will be added expenses to develop the project management methodology and establish the support systems for planning, scheduling, and control. Eventually, the cost will level off and become pegged. The question mark in Figure 1–3 is the point at which the benefits equal the cost of implementation. This point can be pushed to the left through training and education.

During the first decade of the twenty-first century, the understanding and acceptance of the benefits permeated all levels of senior management rather than just

TABLE 1–2. CRITICAL FACTORS IN THE PROJECT MANAGEMENT LIFE CYCLE

Critical Success Factors	Critical Failure Factors
Executive Management Acceptance Phase	
Consider employee recommendations	Refuse to consider ideas from associates
Recognize that change is necessary	Unwilling to admit that change may be necessary
Understand the executive role in project management	Believe that project management control belongs at executive levels
Line Management Acceptance Phase	
Willing to place company interest before personal interest	Reluctant to share information
Willing to accept accountability	Refuse to accept accountability
Willing to see associates advance	Not willing to see associates advance
Growth Phase	
Recognize the need for a corporate-wide methodology	View a standard methodology as a threat rather than as a benefit
Support uniform status monitoring/reporting	Fail to understand the benefits of project management
Recognize the importance of effective planning	Provide only lip service to planning
Maturity Phase	
Recognize that cost and schedule are inseparable	Believe that project status can be determined from schedule alone
Track actual costs	See no need to track actual costs
Develop project management training	Believe that growth and success in project management are the same

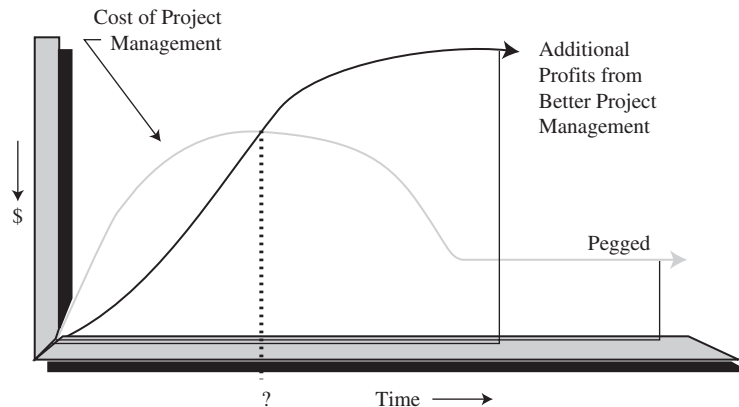


Figure 1-3. Project management costs versus benefits.

those executives that interfaced with projects on a daily basis. Three comments from senior management at American Greetings Corporation illustrate this point:

Through project management, we've learned how to make fact-based decisions. Too often in the past we based our decisions on what we thought could happen or what we hoped would happen. Now we can look at the facts, interpret the facts honestly and make sound decisions and set realistic goals based on this information.

Zev Weiss, formerly chief executive officer, American Greetings

The program management office provides the structure and discipline to complete the work that needs to get done. From launch to completion, each project has a roadmap for meeting the objectives that were set.

Jeff Weiss, formerly president and chief operating officer, American Greetings

Through project management, we learned the value of defining specific projects and empowering teams to make them happen. We've embraced the program management philosophy and now we can use it again and again to reach our goals.

Jim Spira, retired president and chief operating officer, American Greetings

When all of the executives are in agreement as to the value and benefits of project management, continuous improvements in project management occurs at a rapid pace.

1.5 PROJECT MANAGEMENT BEST PRACTICES: 2016–PRESENT ---

As more and more companies recognized the benefits of using project management, capturing best practices became commonplace. Perhaps the biggest change in how people viewed project management was the realization that completed projects could provide business value rather than merely deliverables. Completing projects within the

traditional triple constraints of time, cost, and scope is not necessarily success if the deliverables do not bring business value to the company.

Businesses changed the traditional perception of project management. Business cases for projects now include a benefits realization plan and are often accompanied by a detailed description of the business value expected at the conclusion of the project or shortly thereafter.

Project selection practices and the building of the project portfolio are now predicated on the desire to maximize benefits and business value. Projects that were once considered pet projects for the benefit of a single individual are being removed from the queue and replaced with those that can benefit the organization as a whole. Benefits realization planning, benefits management, and business value management are now prime focuses at the executive levels of management.

1.6 BENEFITS MANAGEMENT PRACTICE AT DUBAI CUSTOMS³

At Dubai Customs (DC), where projects cover both core and noncore domains, effective benefits realization is critical to the achievement of the business outcomes desired from investments.

Mohammad Rashed Bin Hashim and Ajith Kumar Nair, specialists heading the IT Demand and Benefits Management section at DC, a part of the Project Delivery Department, spearheaded the work of developing a Benefits Management Framework for the Customs Development Division. Through extensive research on global benefits realization best practices, they set up a working governance process with an established methodology to capture and measure all financial and nonfinancial benefits that encapsulate overall outcomes. This process is applied in the development of business cases, benefit realization plans, and portfolio-level benefit management. It also provides decision-making support for DC Executive Development Committee in overseeing all project-related investments.

The objectives of benefits realization management at DC are to:

- Ensure benefits are identified, defined clearly at the outset, and linked to strategic outcomes (Business Needs document—Demand Outline and Business Case)
- Ensure business areas are committed to realizing their defined benefits with assigned ownership and responsibility for adding value through the realization process (Benefit Realization Plan and Activity Tracker for monitoring and measurement)
- Drive the process of realizing benefits, including benefit measurement, tracking, and recording benefits as they are realized, and manage benefits at a portfolio level to better budget and prioritize future initiatives (Benefit Realization Plan and Benefit Quadrant)

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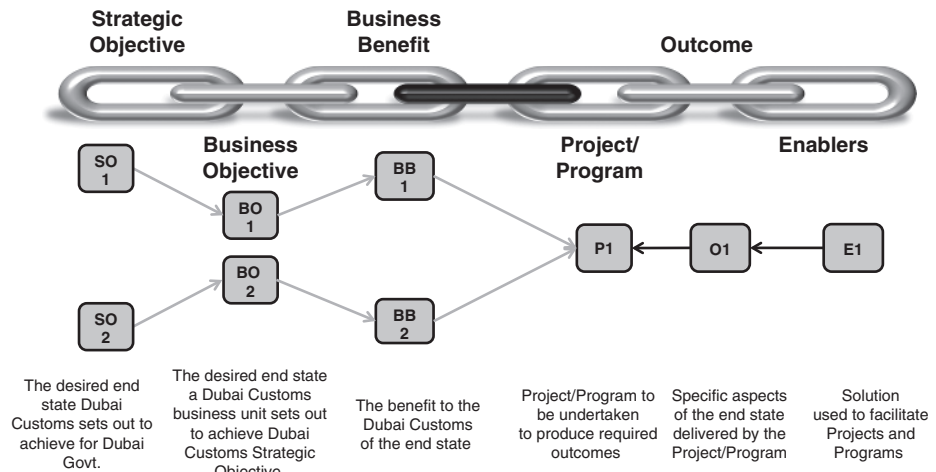


Figure 1–4. Benefits alignment map.

- Use the defined, expected benefits as a roadmap for the project/program, providing a focus for delivering change (Benefit Quadrant feeding into Portfolio Management)
- Provide alignment and clear links between the project/program (its objectives and desired benefits) as per Figure 1–4 with the strategic objectives (DC Strategic Alignment with Benefits—Benefits Alignment Map)

Benefits Realization Management Framework

The purpose of the Benefits Realization Management Framework developed at DC is:

- To provide a framework of best practice principles and concepts drawn from the latest experiences and proven best practices (Cranfield Process Model for Benefits Management and APMG International Managing Benefits: Optimizing the Return from Investments) in setting up and managing benefits for projects and programs across the project delivery department.
- To provide a standard approach for benefits realization management with the business subject matter experts (SMEs), directors, business owners, domain managers, change managers, project/program managers, business analysts, and PMO staff across Dubai Customs.
- To provide consistent terminology and benefits categorization (Revenue increase, Cost savings, Increased efficiency, Revenue Protection, and Customer Satisfaction)
- To provide an introduction and guidance for business sponsors and business benefit owners.
- Aimed at those who are involved in benefits realization, enabling them to adapt and tailor the guidance to their specific needs highlighted in Figure 1–5.

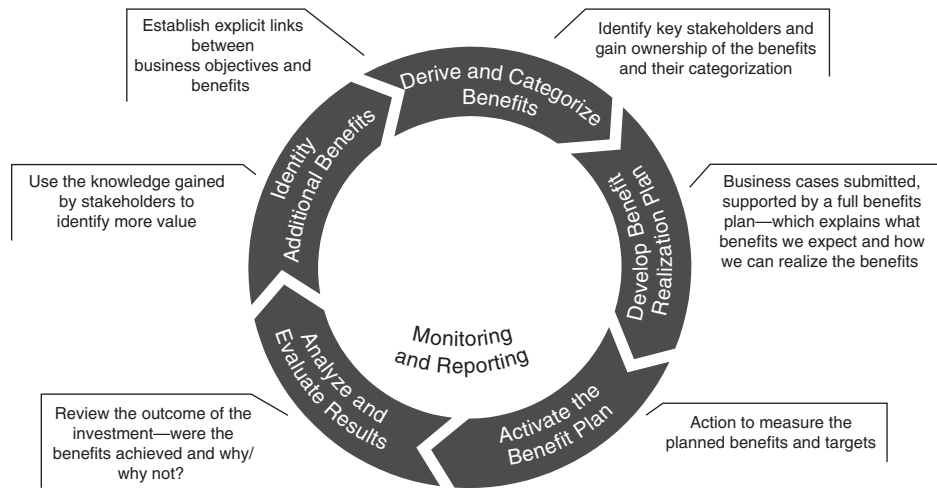


Figure 1-5. Benefits realization management framework.

- Accessible to strategy, operational business areas, and program/project teams as well as to individual practitioners and business benefit owners.
- Aimed at helping practitioners improve their decision-making and become better at implementing beneficial change.

To determine whether an initiative has succeeded and achieved its purpose, benefits management processes look at setting up an overall governance process to plan, measure, review, and evaluate results for quantifiable benefits. The processes also look at measuring qualitative benefits internally and at defining and measuring external partner benefits to DC.

The key to applying the framework is to understand the starting point.

- Have you got an approved business case, or are you still in the process of developing a business case for your project or program?
- All tasks and deliverables relevant to program or project use this standard approach to focus on developing benefits, as depicted in Figure 1-5.

Benefits Management Maturity Level

Determining the maturity level of an organization will help tailor the framework to help ensure adoption and continued use of benefits processes and templates. Low benefit management maturity will resist the introduction of a complex and comprehensive benefits framework. DC realized the need to distill the framework, processes, and templates to gain the essential mechanisms required to improve overall organization's benefits management and perform required governance reporting to plan the continued improvement of benefits management.

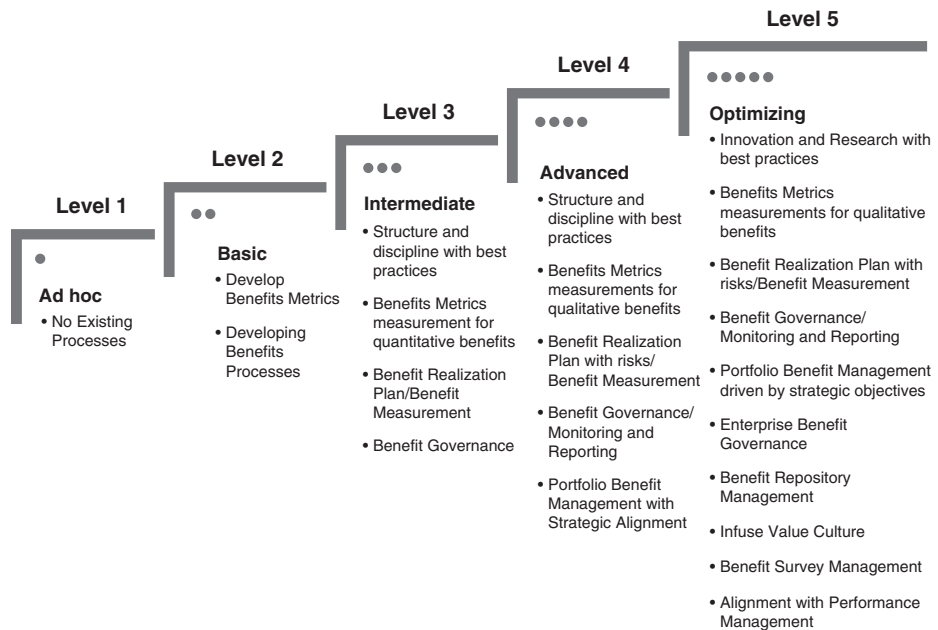


Figure 1-6. Benefits realization maturity model.

An assessment of the adequacy and effectiveness of DC benefits management practices was conducted by Stephen Jenner, a world-renowned benefits management consultancy expert in collaboration with the consultancy group International Institute for Learning, Inc. here in Dubai to gauge our maturity level. With the workshops held here at DC, we developed an internal maturity model for benefits management, depicted in Figure 1-6, to identify maturity areas achieved, to be improved, and to be further developed.

Portfolio Benefits Management (Benefits Quadrant)

For many initiatives, benefits realization will only commence after project implementation is complete. At DC, benefits realization is being monitored after project completion by assigning ongoing responsibility for benefits realization to the Demand Management Section, where realizations are analyzed across the portfolio to optimize and report on a continuous basis to our higher-level governance board (Customs Development Committee). Highlighted in Figure 1-7 is a quadrant built within DC for managing benefits for the portfolio as a whole based on the ideas obtained from the managing benefits best practice of APMG. International benefits are maintained at a portfolio level and plotted with a point allocation depicting the bubble size that represents the cost of the investment around the twin dimensions of attractiveness and achievability of the benefits; this serves as a tool for management in reporting and planning future investments.

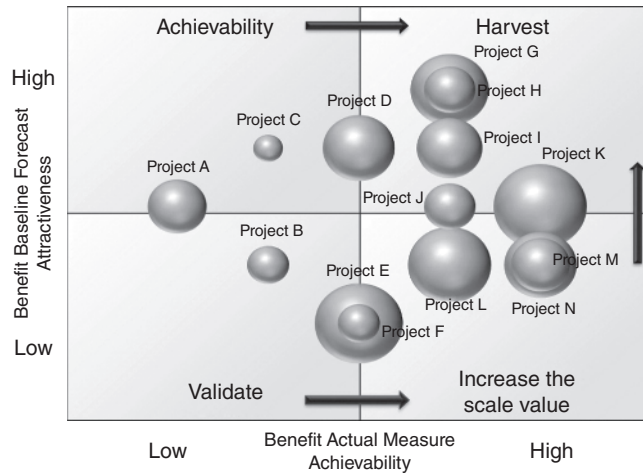


Figure 1-7. Portfolio benefits quadrant.

Key Lessons Learned

- Think about what the benefits are that you want to achieve, then come up with a program of projects that will allow you to deliver those benefits. Thinking of the projects first and then trying to align them with the corporate strategy is just wrong.
- Beware of “rogue” projects that are not strategic in nature, consume valuable resources, and distract attention from helping us deliver the organization’s strategy.
- Focus on benefits with ongoing participative stakeholder management.
- Benefits forecasts and practices are driven by evidence.
- Benefits must be transparent based on open and honest forecasting and reporting, with a clear line of sight from strategic objectives to business benefits.
- Benefits must be forward-looking and evolve through learning and continuous improvement.
- Benefits must focus more on actual realization of benefits.
- Active sponsorship is essential for successful delivery of projects/programs and the expected benefits. The business owner needs to ensure that the project/program delivers the expected benefits.
- Organizations must infuse a value culture to effectively mature in the benefits realization realm.
- Benefits are often realized sometime after project completion. Even if the benefits start coming straightaway, it is essential that the long-term effectiveness of the benefits must be monitored by the business owner.
- Benefits must be managed for the full business life cycle, from identification to realization and application of lessons learned.

1.7 AN EXECUTIVE'S VIEW OF PROJECT MANAGEMENT ---

Today's executives have a much better understanding of and appreciation for project management than did their predecessors. Early on, project management was seen as simply scheduling a project and then managing the project using network-based software. Today, this parochial view has changed significantly. Project management is now a necessity for survival.

Although there are several drivers for this change, three significant reasons seem to stand out. First, as businesses downsize due to poor economic conditions or stiff competition, the remaining employees are expected to do more with less. Executives expect the employees to become more efficient and more effective when carrying out their duties. Second, business growth today requires the acceptance of significant risks, specifically in the development of new products and services for which there may not be reasonable estimating techniques or standards. Simply stated, we are undertaking more jobs that are neither routine nor predictable. Third, and perhaps most important, is that we believe we are managing our business as though it were a series of projects. Projects now make up a significant part of people's jobs. For that reason, all employees are actually project managers to some degree and are expected to make business as well as project decisions.

The new breed of executives seems to have a much broader view of the value of project management, ranging from its benefits to the selection criteria for project managers to organizational structures that can make companies more effective. This is apparent in the next comments, which were provided in an earlier edition of the book by Tom Lucas, formerly chief information officer for the Sherwin-Williams Company:

- We have all managed projects at one time or another, but few of us are capable of being project managers.
- The difference between managing projects and professional project management is like the difference between getting across the lake in a rowboat versus a racing boat. Both will get you across the lake, but the rowboat is a long and painful process. But how do people know until you give them a ride?
- Don't be misguided into thinking professional project management is about process. It is about delivering business results.
- If you don't appreciate that implementing a PMO is a cultural transition, you are destined to fail.

The next comments from other executives clearly indicate their understanding and appreciation of project management:

Over the past 15 years, ongoing transformation has become a defining characteristic of IBM—and a key factor in our success. Effective change in process and IT transformation doesn't just happen, it must be enabled by highly skilled project managers. Our project managers analyze processes, enabled by IT, in a way that allows us to innovate

and eliminate unnecessary steps, simplify and automate. They help us become more efficient and effective by pulling together the right resources to get things done—on time and on budget. They are invaluable as we continue to make progress in our transformation journey.

**Linda S. Sanford, formerly senior vice president,
Enterprise Transformation, IBM Corporation**

Project managers are a critical element of our end-to-end development and business execution model. Our goal is to have sound project management practices in place to provide better predictability in support of our products and offerings. As a team, you help us see challenges before they become gating issues and ensure we meet our commitments to STG [System and Technology Group] and clients. . . . We continue to focus on project management as a career path for high-potential employees and we strongly encourage our project managers to become certified, not only [by] PMI, but ultimately IBM certified. . . . End-to-end project management must become ingrained in the fabric of our business.

**Rod Adkins, formerly senior vice president,
IBM's System and Technology Group**

Successful project management is mission critical to us from two points of view:

First, as we define and implement PLM (product life cycle management) solutions, we help customers to streamline their entire product life cycle across all functional units. This can make any large PLM project an intricate and even complex undertaking. To live up to our company mantra of “we never let a customer fail,” robust and reliable project management is often the most critical component we provide aside from the PLM platform itself; the combination of the two enables our customers to achieve the business benefits they strive for by investing in PLM.

Second, Siemens itself is one of our largest customers. This is a great opportunity and, at the same time, a great challenge. Keeping a project's objectives and scope under control with our “internal” customer is at least as challenging as with external customers; yet it is critical in order to keep our development roadmaps and deployment schedules on track. Our job is to continue to successfully develop and deploy the first and only true end-to-end industry software platform. This comprehensive platform covers the entire product lifecycle from initial requirements, through product development, manufacturing planning, controlling the shop floor and even managing the maintenance, repair and overhaul of the product in question. As a result, effective project management is vital to our success.

Dr. Helmuth Ludwig, formerly Chief Information Officer, Siemens

In this age of instant communications and rapidly evolving networks, Nortel continues to maximize use of its project management discipline to ensure the successful deployment of increasingly complex projects. We foster an environment that maintains a focus on sharing best practices and leveraging lessons learned across the organization, largely driven by our project managers. We are also striving to further integrate project management capabilities with supply chain management through the introduction of SAP business management software. Project management remains an integral part of Nortel's business and strategy as it moves forward in a more services- and solutions-oriented environment.

Sue Spradley, formerly president, Global Operations, Nortel Networks

In the services industry, how we deliver (i.e., the project management methodology) is as important as what we deliver (i.e., the deliverable). Customers expect to maximize their return on IT investments from our collective knowledge and experience when we deliver best-in-class solutions. The collective knowledge and experience of HP [Hewlett-Packard] Services is easily accessible in HP Global Method. This integrated set of methodologies is a first step in enabling HPS [Hewlett-Packard Services] to optimize our efficiency in delivering value to our customers. The next step is to know what is available and learn how and when to apply it when delivering to your customers. HP Global Method is the first step toward a set of best-in-class methodologies to increase the credibility as a trusted partner, reflecting the collective knowledge and expertise of HP Services. This also improves our cost structures by customizing predefined proven approaches, using existing checklists to ensure all the bases are covered and share experiences and learning to improve Global Method.

**Mike Rigodanzo, formerly senior vice president,
HP services operations and information technology**

In 1996, we began looking at our business from the viewpoint of its core processes. . . . As you might expect, project management made the short list as one of the vital, core processes to which quality principles needed to be applied.

Martin O'Sullivan, retired vice president, Motorola

These comments clearly indicate that today's executives recognize that project management is a strategic or core competency needed for survival because it interfaces with perhaps all other business processes, including quality initiatives.

There are three business factors that have occurred in the past decade that have led to executive-level appreciation and support by senior management. First, there has been a significant increase in the growth of nontraditional projects needed to sustain the growth of the business. Believing in a business-as-usual approach is an invitation for failure. The nontraditional projects are heavily oriented around strategic business goals and objectives, as well as innovation necessities, to maintain the firm's future. Due to limited funding, executives cannot work on all the projects they desire. For the projects that are prioritized and implemented, executives need more information than in the past to assess project performance and make necessary strategic changes in direction if necessary. Effective use of project management practices accompanied by continuous improvement efforts increases the chances of success.

Second, today's business environment is heavily based on uncertainty and complexity. Decisions must be made and implemented quickly, often based on imperfect information and higher than normal levels of risk. Once again, effective project management practices improve the chances of success.

Third, a crisis such as the COVID-9 pandemic has shown many companies that they cannot expect the business to survive with a business-as-usual mentality. Hierarchical command and control from the top floor of the building will not necessarily resolve crises. When crises occur, there are usually changes in strategies. Strategies are implemented using projects, and thus the importance and need for effective project management practices appear once again.

These three topics will be discussed in detail in Sections 1.8–1.10.

1.8 THE GROWTH OF NONTRADITIONAL PROJECTS

For decades, most project managers were responsible for traditional projects with a well-defined business case and statement of work. Project managers were taught in the classroom not to begin the planning and execution phases of a project until the requirements were understood and agreed to by all parties, including stakeholders. Having well-defined requirements was believed to minimize the need for detailed risk management and tend to minimize the project's complexity. Companies created a "one-size-fits-all" methodology for managing projects. There were forms, guidelines, templates, and checklists for risk management activities, but they were all predicated upon usage on traditional projects with well-defined requirements.

Project management performance was measured by "obedience" to the singular methodology, even if the project was not a partial or complete success. Excellence in project management was defined by the continuous use of four components, namely

- The one-size-fits-all methodology
- Other organizational process assets supporting the methodology
- Project initiation using a well-defined statement of work
- Realistic assumptions, constraints, and expectations

The ability to effectively manage risk, uncertainty, and complexity was usually not one of the critical characteristics because excellence was measured only against performance of traditional projects that were evident.

Most executives were reluctant to trust project managers and were afraid that project managers would make decisions that were reserved for the senior levels of management. Therefore, using a singular methodology for all traditional projects minimized the risks somewhat and provided senior management with effective command and control from the top floor of the building. Project managers were permitted to make some decisions related to technical risk complexity, but most decisions that impacted business risk complexity were made by the project sponsors.

Projects that were strategic or complex, and with a great deal of risk, were becoming increasingly more important to executives by the turn of the century. Strategic projects, especially those involving innovation, were a necessity for sustaining the business. Unfortunately, these projects were most often assigned to functional managers because senior management trusted functional managers more than project managers. Functional managers were given the freedom to use whatever tools and techniques they wished to manage the complexity of their projects. There were no handcuffs placed on functional managers, and, as such, there were often no guidelines or standards on how to manage the complexities of nontraditional projects such as strategic or innovation projects.

As project management evolved, literature appeared discussing the best practices and lessons learned attributed to the effective use of project management. Executives began questioning whether project managers were better suited to manage nontraditional and strategic projects than functional managers.

There were several reasons for using project managers rather than functional managers. First, functional managers were receiving year-end bonuses based on the performance of their functional group. As such, they were assigning their most qualified employees to the short-term projects that impacted their bonuses, thus possibly unfavorably impacting the strategic projects that now did not have the resources with required skills. Second, functional managers were hiding some of the complexities of their projects for fear that it might impact their bonuses or, even worse, invite executives to micromanage their projects.

By the turn of the century, nontraditional and strategic projects, because of their growing importance, became the responsibility of the project managers. What became evident almost immediately was that the one-size-fits-all approach could not be used on many of the nontraditional projects. Some of the critical differences between these two types of projects are shown in Table 1–3.

Articles began appearing stating that multiple methodologies or frameworks, such as an Agile or Scrum approach, should be used that could be adapted to fit the needs of each project rather than forcing the project to use a one-size-fits-all approach that may be inappropriate. Companies understood the changes that were taking place and soon realized that all projects could have different levels of complexity and that effective risk management practices could become the most important knowledge area for future project managers.

Project managers now had a much deeper and clearer understanding of the situation at hand could make more effective decisions. More trust was being placed in the hands of the project managers, and they could not rely solely upon the project sponsors or the project's governance committees to analyze the complexity of each situation and make the appropriate decisions. Understanding risk, uncertainty, and complexity had become critical intellectual assets for project managers, along with the use of flexible methodologies.

TABLE 1–3. DIFFERENCES BETWEEN TRADITIONAL AND NONTRADITIONAL PROJECTS

Factor	Traditional Project	Nontraditional or Strategic Project
Business case	Usually well-defined	May not exist in the early stages of the project and may be subject to change throughout the project
Statement of work	Usually well-defined	May not exist; may have only strategic goals to work with. The SOW can change throughout the project
WBS	May be developed for the entire project	May be known only for work needed for the next few weeks and subject to change
EVMS	Somewhat helpful	May have limited use based upon the number of unknowns and introduction of competing constraints
Specifications	Usually known	May not exist
Schedule	Known	Unknown and possibly subject to continuous changes
Cost	Known	Unknown at the start and may be subject to continuous changes
Risks	Usually known and can be quantified	May be unknown and subject to new risks appearing without warning
Complexity	Known with some degree of confidence	May not be known and is subject to change

1.9 THE GROWTH OF THE VUCA ENVIRONMENT

By the turn of the century, companies were realizing that project complexity was increasing on many of their projects and needed a way to better understand, define, and manage complexity. The acronym VUCA first appeared in 1987 in the writings on leadership theories by Warren Bennis and Burt Nanus to describe the environment in which leaders must make decisions. VUCA stands for volatility, uncertainty, complexity, and ambiguity. In 2002, the acronym was accepted in military education programs and began being discussed as part of risk management practices on government and military projects.

At the beginning of a project, PMs were traditionally trained to look at the enterprise environmental factors (EEFs) that could impact project decision-making. Most PMs assumed that the EEFs, once identified, would possibly remain constant for the duration of the project.

VUCA environments, which are part of the EEFs, can change continuously, and each of the four components can and will impact the other three components. Because of this interconnectivity between components, it is difficult to separate them since they can change continuously. This mandates that PMs constantly observe the VUCA environment and determine the impact it can have on project decision-making.

There are several interpretations and applications for VUCA and its components. The VUCA environment can be looked at on a global basis or just in the environment of how one company competes and makes decisions. The consensus belief is that all companies in the future must plan on how to compete and survive in a VUCA environment, regardless of the industry.

We all seem to agree that the world in which we live is dictated by VUCA, but there still exists confusion on the meaning of the components of VUCA. Some companies prefer to look at just one or two components, such as volatility and complexity, and downplay or avoid considering uncertainty and ambiguity. The application and definition of the components of VUCA are therefore industry- or even company-specific.

PMI published a study in 2014 entitled “Navigating Complexity – A Practice Guide.” In the document, PMI proposed a set of 48 questions that made the project management community of practice aware that the future landscape for projects may be dictated by VUCA. Typical questions included:⁴

- Can the project requirements be clearly defined at this stage?
- Can the project scope and objectives be clearly defined?
- Are the project constraints and assumptions likely to remain stable?
- Are the stakeholder requirements likely to remain unchanged?

4. For an excellent discussion around some of these questions and VUCA, see Pells, D.L. (2019). Six Fresh Eggs: A half dozen new ideas for managing projects in a rapidly changing VUCA world; presented at the 13th Annual UT Dallas Project Management Symposium, Richardson, Texas, USA in May 2019; *PM World Journal*, Vol. VIII, Issue VIII, September.

The meaning of the VUCA components can change from industry to industry, company to company, and possibly project to project. In a project management environment, VUCA can be described as:

- *Volatility*. An understanding of changes that can occur, usually unfavorable changes, and the forces or events that might cause the changes. The changes could be the need for additional time or funding, poor quality, or inability to meet specifications.
- *Uncertainty*. An understanding of the issues and events that might occur but being unable to accurately predict if they will happen and when. Uncertainty could be knowing that you need more money or more time but not knowing how much.
- *Complexity*. An understanding of the interconnectivity of the events discussed under volatility and uncertainty, and any relationships between them. The greater the number of possible events, the greater the complexity. The team can become overwhelmed with information such that they are unable to decide upon a course of action. Complexity might be knowing that time is money, but not knowing the exact relationship between them.
- *Ambiguity*. Not being able to fully describe the events or misreading the risk events that can affect the outcome of the project. This may be the result of a lack of precedence, the existence of haziness, or mixed meanings concerning the events. This occurs when we are dealing with “unknown unknowns.” As an example, ambiguity occurs when we do not fully understand the individual events that may cause budget and schedule issues.

The definition of the terms in VUCA analysis can change from project to project as well as in the environment in which the project takes place. The enterprise environment factors in a project can have a serious impact on VUCA analysis. Also, in the example above, only time and cost were considered. There could be 15–20, or more, different events that could create complexity and impact project leadership and decision-making.

A fifth element should be included, namely crises. In a project environment, volatility, uncertainty, and ambiguity are categorized by events, and the project managers study these events to determine their interconnectivity or complexity and the potential impact on the project. The events could be activities defined in the risk register. But what if a crisis occurs, such as product tampering or misuse, that could lead to serious health issues or even deaths? Now, the events that led up to the crisis must also be considered as part of its complexity, and you may have much less time than you thought for analyses and decision-making.

VUCA is forcing leaders and decision-makers to become managers of change. Today, there is nowhere to go where you can avoid the VUCA environment. Making long-term decisions in an environment that has an abundance of complexity and can change continuously is difficult. This will require managers at all levels, including project managers, to develop new skills necessitated by the VUCA environment and to

learn how to think nonlinearly to manage complexity. Some of the new skills that managers as well as business leaders must learn are:

- Brainstorming
- Design thinking
- Creative problem-solving
- Strategic/innovation leadership
- Managing diversity
- Conflict resolution
- Understanding emotional intelligence
- Supply chain management

Reducing Complexity and Uncertainty

Reducing complexity and uncertainty requires looking at ways to minimize the unfavorable impact of all the VUCA components because of their interconnectivity. Some of the actions the project manager may perform include:

- *Volatility*. Closely monitor the EEFs using a worst-case scenario approach and build in slack if possible.
- *Uncertainty*. Continuously seek information that can support or negate the assumptions and constraints that might change the direction of the project.
- *Complexity*. Understand the connectivity and dependencies between elements of work and staff the project with highly qualified resources that can perform in a complex environment.
- *Ambiguity*. Have a willingness to conduct meaningful experimentation and understand cause-and-effect relationships.

Another activity that project managers can perform is a validation of the assumptions. For decades, we took it for granted that the assumptions identified in the business case or SOW were correct and did not need to be validated or even tracked over the duration of the project. In a VUCA environment, especially if there does not exist a business case or SOW, the more unproven assumptions you have, the greater the complexity. Also, the assumptions will most likely change over the duration of the project.

1.10 THE IMPACT OF THE COVID-19 PANDEMIC ON PROJECT MANAGEMENT _____

In 2020, hundreds of thousands of people across the globe were affected by the COVID-19 pandemic. Public sector, private sector, and government leaders across all businesses had to respond quickly to the effects of the crisis, often with very little time to prepare. All of this was taking place in a rapidly changing VUCA environment characterized by a high degree of risk and uncertainty and accompanied by a lack of complete information needed for decision-making.

Dealing with the crisis required that many projects be implemented quickly without having the luxury of sufficient time to use many of the traditional project management tools, techniques, and processes. The impact of the crisis affected project management leadership practices as well, especially the way that leadership should be applied and how decisions should be made. Most project teams had never been trained in how to deal with crises like this when executing both traditional and nontraditional projects. The information learned from managing projects during the pandemic has generated many best practices that are now being applied to all types of projects.

Leadership

In the early years of project management, companies believed that “business-as-usual” meant the utilization of a one-size-fits-all methodology accompanied by bureaucratic leadership. Project management was driven by rigid policies and procedures so that senior management would maintain command and control over all projects. The goal of leadership was the profitability of the project, often with little concern for the workers. It was not uncommon for workers to be treated as an expense to the project, and the goal of the PMs was to stop workers from using project charge numbers as quickly as possible. This sometimes limited the ability of the project manager to motivate workers and to be creative. Workers often did as little as possible on projects to receive their paychecks. This leadership approach was often dictated by senior management or project sponsors.

The project management community of practice wanted a project leadership template that listed all the characteristics of effective leadership needed in a project environment. Instead, the literature abounded with leadership styles such as authoritarian, participative, laissez-faire, and situational leadership styles. Each leadership style came with advantages and disadvantages. The PM made the decision as to what leadership style to use most often based upon what was in the best interest of the PM for a particular type of project and with little regard for the project team’s needs or desires.

By the turn of the century, changes began to take place that would alter our view of the characteristics of effective project leadership. First and foremost, more and more projects that PMs were asked to manage were nontraditional projects to fulfill the growth in strategic and innovation needs. Second, the introduction of flexible methodologies such as Agile and Scrum made it clear that “business-as-usual” leadership may be ineffective on many types of nontraditional projects. The new methodologies required a different perception of project leadership. Third, the durations of the projects were getting longer, which meant that project managers would need to spend significantly more time collaborating with workers and stakeholders. Fourth, the importance of most of the nontraditional projects required that many workers be assigned full-time to these activities and to interface with the PMs more frequently than in the past. Fifth, project team members were allowed to evaluate the effectiveness of the PMs and project governance personnel at the end of the project.

The common bond in the five changes just described is the word “collaboration.” The project management community and academia began looking at the characteristics of effective project management leadership for the future that could be described by a listing of characteristics supporting the need for better collaboration among all players.

The result is a growth in the concept of “social project management leadership,” which contains the following characteristics:⁵

- Acting and interacting with the team in a socially responsible manner
- Inspiring team spirit and keeping the team energized
- Managing complexity in a VUCA environment
- Managing cultural transformation
- Participating in change management efforts
- Encouraging design thinking practices
- Understanding nonverbal cues and emotional intelligence applications
- Employ active listening practices
- Demonstrate respect for everyone
- Support quality of life factors important to team members

The pandemic has accelerated the recognition and need for significant changes in human behavior in project leadership. These characteristics are now seen as best practices and are becoming part of project management educational programs.

Trust

One of the biggest challenges in project management leadership is getting the team to trust that the decisions made by the project managers are based upon honesty, fairness, and ethical practices that consider the best interests of both the projects and the workers. Trust will encourage workers to become more engaged in the project and make it easier for the PMs to obtain their commitment. Trust can be destroyed if the PMs act in an unethical manner, abuse the power of their position, or demonstrate toxic emotions toward the team.

The pandemic placed workers under significantly higher levels of stress. Many workers quickly recognized the added complexities of their job with the reality of having to work from home. Working on virtual teams was a new experience for many workers. There was now a much heavier reliance on the project managers to provide guidance to the team members for their day-to-day activities as well as keep them updated on how the company was planning to recover the business during the crisis, especially if there was a lockdown. The need for effective collaboration to establish trust is now seen as a best practice.

To build up and maintain trust, project management leadership had to provide emotional and interpersonal support for the team on a continuous basis. This was a new experience for many project managers, who were just beginning to realize the importance of obtaining worker trust and its impact during a crisis.

5. For additional information on social project management leadership, see Harold Kerzner, Al Zeitoun and Ricardo Vargas, *Project Management Next Generation: The Pillars for Organizational Excellence*, 2022, Hoboken, John Wiley & Sons, Chapter 6.

Communications

Leadership during a crisis must focus on persuasion rather than formal authority and coercion. This is best achieved through effective communication. Active listening concepts should be used to understand workers' concerns.

When team members work from home for an extended amount of time, they rely on media interaction and engagement to understand what is happening during the crisis. The greater the uncertainty during the media engagement, the greater the anxiety in the listeners.

Project managers must be willing to give up the idea that information is power and support the transparency of making information available. The information should provide a clear and realistic view of what is currently happening and possibly an optimistic view of future expectations. This is now becoming a best practice on all projects.

Decision-Making

On traditional projects, PMs often adopt a wait-and-see attitude before making decisions, with the belief that all possible scenarios must be considered, including the worst-case scenario. Unfortunately, all of this takes time. During a crisis, delaying or not making a decision in a timely manner is generally a bad idea and can lead to a potentially worse outcome than expected by missing project opportunities. Decision delays can also create an environment where workers no longer have any credibility in the PM's leadership ability.

The pandemic has taught us that we must be willing to make project decisions rapidly based upon whatever information we have, even if the information is imperfect or incomplete. PMs must do the best they can with the information available to anticipate what can go wrong.

During a crisis, strategic decisions are usually made for both the long-term and short-term benefits, whereas project decisions may require a different focus. Some decisions may be designed around the organization's core values, which may be in contrast with the project's objectives. Other types of decisions may need to focus on the beliefs and values of the people affected by the decision. But regardless of the decisions made, the PM must spend sufficient time with all players, even if one-on-one in virtual meetings, to explain the meaning of the decision and what actions are expected from them.

Project Control Center

In traditional project management, with well-defined scope and expectations, critical decisions are most often made by the team in open meetings and then reviewed as needed with just the PM and either the sponsor or governance committee. However, during a crisis, executives often believe that they must take control, resulting in the removal of leadership responsibility from the project manager and possibly the project sponsor. Meetings are held behind closed doors, with only a select few in attendance. These secretive meetings often do not include the PMs or project team members, even though the resulting decisions may have a serious impact on the direction of the projects.

Using the hierarchical approach for making critical decisions during a crisis runs the risk of making bad decisions by overlooking critical information. The result is most often mistrust by the key players and a lack of commitment to the decisions.

Effective decision-making during a crisis should be done through brainstorming sessions. By selecting the right people for the session, the greater the likelihood that critical information will not be overlooked, and more perspectives will be considered. Many of the participants may not have been part of the original project team if the crisis concerned just your project. The brainstorming sessions should include suppliers, distributors, and other strategic partners that may be experiencing the same risks and uncertainties as you and must understand the rationale for whatever decisions are made and how they impact them. Their support may be essential.

There may be frequent brainstorming sessions, and workers will want to know what decisions are being made and if they will be impacted. It may be beneficial to establish a project control center or project nerve center for the control of information to the workers.

Change Management

The result of crisis decisions frequently leads to change management activities as strategies based on new or promising ideas are designed for implementation. During a crisis, companies try to reduce costs, and they often begin by abandoning teaching and educational activities. This can lead to detrimental results if the training and education are essential to fulfill and implement a strategy, especially if there is a resulting organizational change where people are removed from their comfort zone.

Conclusions

The magnitude and speed of crises are often unpredictable, as we have seen during the COVID-19 pandemic. Many of the actions that companies have taken during a crisis are now becoming standard practices when managing many types of projects and are treated as best practices.

1.11 GENERAL MOTORS AND VENTILATORS⁶

When one thinks of project risk management, the thought of a pandemic usually isn't at the top of the list, if it is on the list at all. In 2020, things really turned upside-down when the COVID-19 virus hit the world. In March 2020, General Motors idled most of its world-wide workforce in order to slow the spread of the virus and protect its workers. So here was one of the largest companies in the world, with one of the most versatile workforces, all sidelined, waiting for the next bit of news.

6. Material in this section was graciously provided by Jim Trela, Corp Staffs Lead Planner and Chief of Staff, and Jeffrey J. Hall, PMP, GM SPSC, Sr. Development Lead. ©2022 by General Motors Corporation. All rights reserved. Reproduced with permission.

What happened next was a brilliant pivot requiring the use of project management talent and application of manufacturing resources to help respond to the very pandemic that sidelined most of its workforce. GM's mobilization of the same project and program management resources that manufacture vehicles produced incredibly fast results for a corporate social responsibility (CSR) initiative.

Companies like General Motors today maintain a self-regulated strategy called corporate social responsibility (CSR) that is integrated into the firm's business model and identifies the ethically oriented activities the firm will undertake for the benefit of consumers, society, ecology, and government regulations. Traditional CSR activities in many companies focus upon the consumption of certain natural and renewable resources, such as water, energy, and other materials. However, as General Motors (GM) has admirably demonstrated, there are other ways to demonstrate CSR.

Included in the description of a firm's CSR is usually the term "social," which may be defined as improving or showing concern for human life without impacting the capacity of the supporting ecosystems. This leads us to the term "social innovation," which is the creation of new or innovative products and services that support CSR. The outcomes of social innovation often focus more on a concern for society instead of profitability.

GM's CSR effort regarding ventilators began on March 17 after they were approached by stopthespread.org, a coalition of CEOs, trying to organize companies to help stop the spread of the COVID-19 pandemic. The coalition contacted Mary Barra, GM's CEO, and suggested that GM team up with Ventec, a company located in Bothell, Washington, and a manufacturer of small portable ventilators. Within 24 hours, executives from GM and Ventec had their first conference call, and the following day, a team from GM flew to Seattle to meet with Ventec and begin the joint venture.

Senior stakeholders were quickly on board with the overall objective and remained in contact with all project workstreams on a daily basis. Empowered teams met daily and were loosely coupled to coordinate dependencies, understand the timeline, and resolve issues quickly. Issues were documented on shared folders, triaged, and resolved.

Roadblocks did not exist for long. Decisions were made and the team moved ahead. Deliverables and approvals that would normally take weeks, only took minutes, due to the clear communication paths, team focus and executive priority. Capital was approved and contracts were put in place with minimal executive oversight/approval being required.

All of this was possible due to the clarity of the GM vision established up front and unwavering commitment of GM people at all levels of the organization to deliver ventilators. There was plenty of inspiration to get this done, as if someone in our family depended on it. People were excited to be involved. Each shipment was a celebration, down to the last one shipped just before midnight on the contract deadline.

By March 20, GM had engaged its global supply base, and within 72 hours, suppliers had plans to get all the necessary parts. The UAW's national and local leadership signed off on the project, and by March 25, crews began preparing GM's 272-acre complex in Kokomo, Indiana, for production.⁷ About 800 full-time and part-time GM

7. <https://www.freep.com/story/money/cars/general-motors/2020/08/14/no-shortfall-supply-ventilators-gm-ventec-stockpile/3366678001/>

employees were assigned to the project to produce 30,000 ventilators. According to a GM spokesperson:

The Detroit automaker will produce and deliver the [30,000] ventilators to the government by the end of August, with the first 6,132 ventilators being delivered by June 1, [2020].⁸

Senior management at GM was committed to the CSR ventilator effort. “Our commitment to build Ventec’s high-quality critical care ventilator, VOCSN, has never wavered,” GM said. “The partnership between Ventec and GM combines global expertise in manufacturing quality and a joint commitment to safety to give medical professionals and patients access to life-saving technology as rapidly as possible. The entire GM team is proud to support this initiative.”⁹

GM Information Technology (IT) group was a critical piece of the Ventilator production. While significantly scaling up the Ventec process to meet GM’s volume expectations, each ventilator part had to be tracked through the manufacturing steps. GM reached out to Ventec’s IT partners immediately and quickly worked through the contracting and architecture required to meet the business needs for quality, tracking, and throughput. This was done in parallel with setting up the initial manufacturing space to start building ‘non-saleable’ units within 3 weeks of GM’s initial visit to Ventec.

GM and its partner, Ventec Life Systems, delivered the last of the 30,000 ventilators owed to the U.S. government as planned. GM said the full federal order was completed in 154 days, with one ventilator made about every seven minutes.¹⁰ According to GM CEO Mary Barra:

... “the automaker’s motivation to produce the critical care ventilators was fueled by thousands of people at GM, Ventec and our suppliers who all wanted to do their part to help save lives during the pandemic. It was inspiring to see so many people achieve so much so quickly.”¹¹

GM transitioned out of the Ventilator business after 5 months and enabled Ventec to take over the production line immediately upon completing the government contract. There was minimal down time in the transition due to careful planning. Ventec continued to build ventilators on that same production line until the ventilator demand diminished later in 2020.

GM’s commitment to CSR did not end with the delivery of the last ventilator. GM was still making face masks. The company said it will donate 2 million face masks

8. https://www.cnn.com/2020/04/08/gm-to-build-30000-ventilators-for-us-for-489point4-million.html?__source=sharebarlemail&par=

9. https://www.cnn.com/2020/03/27/trump-orders-general-motors-to-make-ventilators-under-defense-production-act.html?__source=sharebarlemail&par=sharebar

10. <https://www.freep.com/story/money/cars/general-motors/2020/09/01/gm-and-ford-deliver-last-ventilators-amid-coronavirus/3449490001/>

11. Ibid.

to Michigan public schools as part of the State of Michigan's MI Mask Aid partnership. GM's contribution includes 750,000 child-size masks for elementary students. Those will be ready for delivery by September 14, GM said. Also, 1.25 million adult-size masks for high school students, faculty, and staff will be ready for delivery by September 28.¹²

Nobody knows what will happen in the future. There could be another pandemic, acts of God, or wars that require companies to be able to pivot and redirect their resources from their primary purpose to one focused on the benefit of humanity, as did GM with the ventilators and masks. This ability will bring more than just financial benefits to the company. People will turn to GM when innovation and ingenuity are needed to solve CSR-related challenges, even on a global scale.

1.12 BEST PRACTICES PROCESS

Why capture best practices? The reasons or objectives for capturing best practices might include:

- Continuous improvements (efficiencies, accuracy of estimates, waste reduction, etc.)
- Enhanced reputation
- Winning new business
- Survival of the firm

Survival of the firm has become the most important reason today for capturing best practices. In the last few years, customers have put pressure on contractors in requests for proposals by requesting:

- A listing of the number of PMP® credential holders¹³ in the company and how many will be assigned to this project
- A demonstration that the contractor has an enterprise project management methodology, whether rigid or flexible, that is acceptable to the customer, or else the contractor must use some other methodology approved by the customer
- Supporting documentation identifying the contractor's maturity level in project management, possibly using a project management maturity model for assessments
- A willingness to share lessons learned and best practices discovered on this project and perhaps previous projects from other customers

Recognizing the need for capturing best practices is a lot easier than actually doing it. Companies are developing processes for identifying, evaluating, storing, and

12. Ibid.

13. PMP is a registered mark of the Project Management Institute.

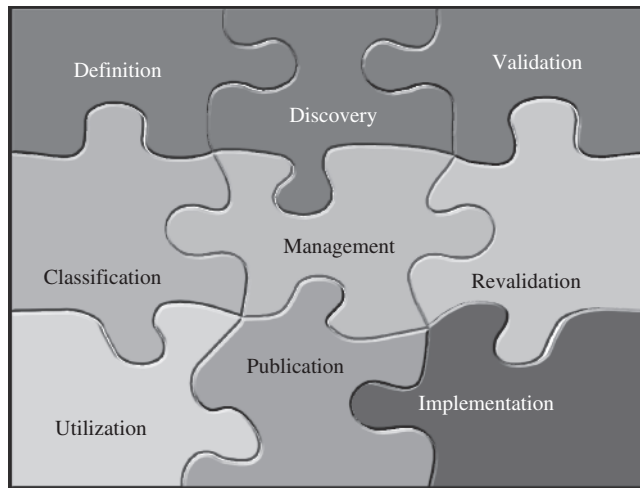


Figure 1–8. Best practices processes.

disseminating information on best practices. There are nine best practices activities, as shown in Figure 1–8, and most companies that recognize the value of capturing best practices accomplish all of these steps.

The processes answer nine questions:

1. What is the definition of a best practice?
2. Who is responsible for identifying the best practices, and where do we look?
3. How do we validate that something is a best practice?
4. Are there levels or categories of best practices?
5. Who is responsible for the administration of the best practice once approved?
6. How often do we reevaluate whether something is still a best practice?
7. How do companies use best practices once they are validated?
8. How do large companies make sure that everyone knows about the existence of the best practices?
9. How do we make sure that the employees are using the best practices and using them properly?

Each of these questions is addressed in the sections that follow.

1.13 STEP 1: DEFINITION OF A BEST PRACTICE _____

For more than two decades, companies have been fascinated by the expression “best practices.” But now, after two decades or more of use, we are beginning to scrutinize the term, and perhaps better expressions exist.

A best practice begins with an idea that there is a technique, process, method, or activity that can be more effective at delivering an outcome than any other approach and provides us with the desired outcome with fewer problems and unforeseen complications. As a result, we supposedly end up with the most efficient and effective way of accomplishing a task based on a repeatable process that has been proven over time for a large number of people and/or projects.

But once this idea has been proven to be effective, we normally integrate the best practice into our processes so that it becomes a standard way of doing business. Therefore, after acceptance and proven use of the idea, the better expression possibly should be a “proven practice,” “smart practice,” “good practice,” or “promising practice” rather than “best practice.” Saying that something is a best practice may lead people to believe that this is the best approach and cannot be improved upon. This is just one argument why a “best practice” may be just a buzzword and should be replaced by “proven practice.”

Another argument is that the identification of a best practice may lead some to believe that we were performing some activities incorrectly in the past, and that may not have been the case. The new practice may simply be a more efficient and effective way of achieving a deliverable. Another issue is that some people believe that best practices imply that there is one and only one way to accomplish a task. This may also be a faulty interpretation.

Perhaps in the future, the expression “best practices” will be replaced by “proven practices.” Although for the remainder of this text, we use the expression “best practices,” the reader must understand that other terms may be more appropriate. This interpretation is necessary here because most of the companies that have contributed to this book still use the expression “best practices.”

As project management evolved, so did the definitions of a best practice. Some definitions of a best practice are highly complex, while others are relatively simplistic. Yet they both achieve the same purpose of promoting excellence in project management throughout the company. Companies must decide on the amount of depth to go into the best practice—should it be generic and at a high level or detailed and at a low level? High-level best practices may not achieve the efficiencies desired, whereas highly detailed best practices may have limited applicability.

Every company can have its own definition of a best practice, and there might even be industry standards on the definition. Typical definitions of a best practice might be:

- Something that works
- Something that works well
- Something that works well on a repetitive basis
- Something that leads to a competitive advantage
- Something that can be identified in a proposal to generate business
- Something that differentiates us from our competitors
- Something that keeps the company out of trouble and, if trouble occurs, the best practice will assist in getting the company out of trouble

Every company has its own definition of a best practice. There appear to be four primary reasons for capturing best practices:

1. To improve efficiency
2. To improve effectiveness
3. To achieve standardization
4. For consistency

In each of the following definitions, you should be able to identify which of the four, or combination thereof, the company targets:

At Orange Switzerland, a best practice is defined as an experience based, proven, and published way of proceeding to achieve an objective.

Spokesperson at Orange Switzerland

We do have best practices that are detailed in our policies/procedures and workflows. These are guidelines and templates as well as processes that we all [members of the EPMO—enterprise project management office] have agreed to abide by as well as that they are effective and efficient methods for all parties involved. In addition, when we wrap up (conclude) a project, we conduct a formal lessons learned session (involving the project manager, sponsors, core team, and other parties impacted by the project), which is stored in a collective database and reviewed with the entire team. These lessons learned are in effect what create our best practices. We share these with other health care organizations for those vendors for which we are reference sites. All of our templates, policies/procedures, and workflows are accessible by request and, when necessary, we set meetings to review as well as explain them in detail.

Nani Sadowski, formerly manager of the Enterprise Project Management Office at Halifax Community Health Systems

Any tool, template, or activity used by a project manager that has had a positive impact on the *PMBOK® Guide*¹⁴ knowledge and/or process areas and/or the triple constraint. An example of a best practice would be: Performing customer satisfaction assessments during each phase of a project allows adjustments during the project life cycle, which improves deliverables to the client, and improves overall project management. [This would be accompanied by a template for a customer satisfaction survey.]

Spokesperson for AT&T

Generally, we view a best practice as any activity or process that improves a given situation, eliminates the need for other more cumbersome methods, or significantly enhances an existing process. Each best practice is a living entity and subject to review, amendments, or removal.

For Churchill Downs Incorporated, a best practice is any method or process that has been proven to produce the desired results through practical application. We do not

14. PMBOK is a registered mark of the Project Management Institute.

accept “industry” or “professional standards” as best practices until we have validated that the method or process works in our corporate environment.

Examples of some of our best practices include:

- *Charter signatures:* One of our best practices is requiring stakeholder signatures on project and program charters. This seems basic, but my experience is that a formal review and approval of a project’s business objectives and goals is rarely documented. By documenting business objectives and their associated metrics, we have been able to proactively manage expectations and ensure alignment between various stakeholders.
- *Process definition:* In addition to defining the organization’s project, program, and portfolio management processes, the PMO has also taken an active role in mapping all of the financial processes for Churchill Downs Incorporated, from check requests and employee reimbursement requests to procedures for requesting capital expenses and purchase orders. This practice has increased corporate-wide awareness of how standardizing processes can enhance efficiency.
- *Access to information:* The PMO developed process maps, procedures, and policies for the end-to-end budgeting processes and associated workflows and templates. These have been made available company-wide via CCN, the company’s intranet site.

**Comments by Chuck Millhollan, formerly director of program management,
Churchill Downs Incorporated**

At Indra, we consider a “best practice” in project management as a management action or activity that usually generates a positive outcome. As such, it is accepted by the management community and eventually becomes a recommended or required way of performing the task. We also consider as a “best practice,” the use of predefined indicators, thresholds or metrics to make or facilitate decisions with regard to project management processes.

**Comments by Enrique Sevilla Molina, PMP,
formerly corporate PMO director, Indra**

1.14 STEP 2: SEEKING OUT BEST PRACTICES ---

Best practices can be captured either within your organization or externally to it. Benchmarking is one way to capture external best practices, possibly by using the PMO as the lead for external benchmarking activities. However, there are other external sources other than benchmarking for identifying best practices:

- Project Management Institute (PMI) publications
- Forms, guidelines, templates, and checklists that can affect the execution of the project
- Forms, guidelines, templates, and checklists that can affect the definition of success in a project

- Each of the *PMBOK® Guide* areas of knowledge or domain areas
- Within company-wide or isolated business units
- Seminars and symposiums on general project management concepts
- Seminars and symposiums specializing in project management best practices
- Relationships with other professional societies
- Graduate-level theses

With more universities offering master's and doctorate-level work in project management, graduate-level theses can provide up-to-date research on best practices.

The problem with external benchmarking is that best practices discovered in one company may not be transferable to another company. In the author's opinion, most of the best practices are discovered internally and are specifically related to the company's use of its project management methodology and processes. Good project management methodologies allow for the identification and extraction of best practices. However, good ideas can come from benchmarking as well.

Sometimes it is easier to identify the drivers or metrics that affect each best practice than the best practice itself. Metrics and drivers can be treated as early indicators that a best practice may have been found. It is possible to have several drivers for each best practice. It is also possible to establish a universal set of drivers for each best practice, such as:

- Reduction in risk by a certain percentage, cost, or time
- Improve estimating accuracy by a certain percentage or dollar value
- Cost savings of a certain percentage or dollar value
- Efficiency increases by a certain percentage
- Reduction in waste, paperwork, or time by a certain percentage

There are three advantages of this approach for searching for drivers.

1. The drivers can change over time, and new drivers can emerge rapidly.
2. The best practices process is more of a science than an art.
3. We can establish levels of best practices such as those shown in Figure 1–9. In this figure, a level 4 best practice, which is the best, would satisfy 60 percent or more of the list of drivers or characteristics of the ideal best practice.

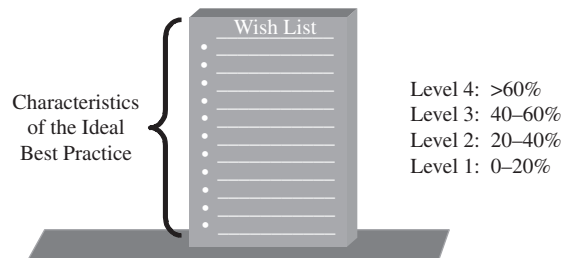


Figure 1–9. Best practices levels. Each level contains a percentage of the ideal characteristics.

Best practices may not be transferable from company to company, nor will they always be transferable from division to division within the same company. As an example, consider the following best practice discovered by a telecommunications company:

- A company institutionalized a set of values that professed that quality was everything. The result was that employees were focusing so much on quality that there was a degradation in customer satisfaction. The company then reprioritized its values, with customer satisfaction being the most important, and quality actually improved.

In this company, an emphasis on customer satisfaction led to improved quality. However, in another company, emphasis on quality could just as easily have led to an improvement in customer satisfaction. Care must be taken during benchmarking activities to make sure that whatever best practices are discovered are in fact directly applicable to your company.

Best practices need not be overly complex. As an example, the next list of best practices is taken from companies discussed in this textbook. As you can see, some of the best practices were learned from failures rather than successes:

- Changing project managers in midstream is bad, even if the project is in trouble. Changing project managers inevitably elongates the project and can make it worse.
- Standardization yields excellent results. The more standardization placed in a project management methodology, usually, the better the results are. However, this is dependent on the type of project. Some projects are better implemented with highly flexible methodologies.
- Maximization of benefits occurs with a methodology, whether rigid or flexible, based on templates, forms, guidelines, and checklists rather than policies and procedures.
- Methodologies must be updated to include the results of discovering best practices. The more frequently the methodology is updated, the quicker the benefits are realized.

As noted, best practices need not be complex. Even though some best practices seem simplistic and based on common sense, their constant reminder and use lead to excellence and customer satisfaction.

Another way to identify sources of best practices is through the definition of project success, CSFs, and key performance indicators (KPIs). Extracting best practices through the definition of success on a project may be difficult and misleading, especially if we have a poor definition of success.

Over the years, many of the changes that have taken place in project management have been the result of the way we define project success. As an example, consider the next chronological events that took place over the past several decades:

- *Success is measured by the triple constraints or competing constraints.* The triple constraints are time, cost, and performance (which include quality, scope, and technical performance). This was the basis for defining success during the birth of project management. Competing constraints can include safety, aesthetic value, benefits, safety, level of acceptable risk, and others.
- *Customer satisfaction must be considered as well.* Managing a project within the triple constraints is always a good idea, but the customer must be satisfied with the end result. A contractor can complete a project within the triple constraints and still find that the customer is unhappy with the end result.
- *Other (or secondary) factors must be considered as well.* These additional competing constraints include using the customer's name as a reference, corporate reputation and image, compliance with government regulations, strategic alignment, technical superiority, ethical conduct, business realization, value management, and other such factors. The secondary factors may end up being more important than the primary factors of the triple constraints.
- *Success must include a business component.* Project managers are managing part of a business rather than merely a project and are expected to make sound business decisions as well as project decisions. There must be a business purpose for each project. Each project is considered as a contribution of business value to the company when completed.
- *Prioritization of constraints must occur.* Not all project constraints are equal. The prioritization of constraints is done on a project-by-project basis. Sponsorship involvement in this decision is essential.
- *The definition of success must be agreed on between the customer and the contractor.* Each project can have a different definition of success. There must be up-front agreement between the customer and the contractor at project initiation or at the first meeting between them on what constitutes success.
- *The definition of success must include a "value" component.* Why work on a project that does not provide the correct expected business value at completion?

The problem with defining success as on time, within cost, and at the desired quality or performance level is that this is an internal definition of success only. Bad things can happen on projects when the contractor, customer, and various stakeholders all focus on different definitions of project success. There must be an up-front agreement on what constitutes project success. The ultimate customer or stakeholder should have some say in the definition of success, and ultimately, numerous best practices may be discovered that relate to customer/stakeholder interfacing.

Today, we recognize that the customer rather than the contractor defines quality. The same holds true for project success. Customer and stakeholder acceptance must be included in any definition of project success. You can complete a project internally within your company within time, within cost, and within quality or specification limits and yet find the project is not fully accepted by the customer or stakeholders.

Although some definitions of project success seem quite simple, many companies have elaborated on the primary definition of project success. At Churchill Downs Incorporated (CDI), success is defined more rigorously than in most companies. According to Chuck Millhollan, formerly director of program management:

Project success is defined in our PMO charter as follows.

Based on input from CDI's executive management, the PMO considers a project to be a success when the following are true:

- a. Predefined business objectives and project goals were achieved or exceeded.
- b. A high-quality product is fully implemented and utilized.
- c. Project delivery met or beat schedule and budget targets.
- d. There are multiple winners:
 - i. Project participants have pride of ownership and feel good about their work.
 - ii. The customer's (internal and/or external) expectations are met.
 - iii. Management has met its goals.
- e. Project results helped build a good reputation.
- f. Methods are in place for continual monitoring and evaluation (benefit realization).

We do not use project management "process" indicators to define project success. While schedule and budget targets are part of the criteria, sponsor acceptance, project completion, and ultimately project success, is based on meeting defined business objectives.

Enrique Sevilla Molina, PMP, formerly corporate PMO director at Indra, provides us with his company's definition of project success and program success:

Project success is based on achieving the proposed project targets in budget, scope, performance and schedule. Many times, the economic criteria appears as the main driving factor to measure project success, but there are other factors just as important such as building a durable relationship with the customer and building strong alliances with selected partners. Another significant criteria for project success measurement is the reliability of the project data forecast. It may be the case that, when the economic results of the project are not as good as they should be, if the fact is pointed out and reported soon enough, the success of the project is equally achieved.

Program success is based on achieving the program's overall strategic targets defined during program definition and, at this level, the success is measured not only by achieving the expected economic outcomes but, most of all, reaching the expected position in the market with regard to a product or a line of products, and establishing a more advantageous position with regard to our competitors. Leadership in a product line constitutes the ultimate measure of success in a program. It is worthwhile to mention that, quite often, the success of a program is based on the partnership concept developed with our major subcontractors at the project level.

Project success is defined at a business unit level by the responsible director, in accordance with the strategic goals assigned to the project.

Program success is defined at the company level by the chief operations management in accordance with the program's defined mission.

AT&T defines project and program success in a similar manner. According to a spokesperson for AT&T:

Project success is defined as a Client Satisfaction rating of “Very Satisfied” and On-Time Performance of Project Delivery of 98% or greater. The Project Management Organizational Leadership Team sets the objectives, which are tracked to determine project success. Program success is defined and tracked the same way as project success.

Excellence [in project management] is defined as a consistent Project Management Methodology applied to all projects across the organization, continued recognition by our customers, and high customer satisfaction. Also, our project management excellence is a key selling factor for our sales teams. This results in repeat business from our customers. In addition, there is internal acknowledgement that project management is value-added and a must have.

Project success can be measured intermittently throughout the phase or gate review meetings that are part of the project management methodology. This allows a company to establish interim metrics for measuring success. An example of this appears in Chapter 4, “Project Management Methodologies.”

Another element that is becoming important in the definition of success is the word *value*.

The ultimate definition of success might very well be when the customer is so pleased with the project that the customer allows you to use his or her name as a reference. This occurred at one company that bid on a project at 40 percent below its cost of doing the work. When asked why the bid was so low, company representatives responded that they knew they were losing money, but what was really important was getting the customer’s name on the corporate resume of clients. Therefore, secondary factors may be more important than primary factors.

The definition of success can also change based on whether a company is project- or non-project-driven. In a project-driven firm, the entire business of the company is projects. But in a non-project-driven firm, projects exist to support the ongoing business of production or services. In a non-project-driven firm, the definition of success also includes completion of the project *without* disturbing the firm’s ongoing business. It is possible to complete a project within time, within cost, and within quality and at the same time cause irrevocable damage to the organization. This occurs when the project manager does not realize that the project is *secondary* in importance to the ongoing business.

Some companies define success in terms of CSFs and KPIs. CSFs identify those factors necessary to meet the desired deliverables of the customer. CSFs and KPIs do not need to be elaborate or sophisticated metrics. Simple metrics, possibly based on the triple constraints, can be quite effective. According to a spokesperson from AT&T:

The critical success factors include Time, Scope, Budget, and Customer Satisfaction. Key performance indicators include on-time performance for key deliverables. These include customer installation, customer satisfaction and cycle-time for common milestones.

Typical CSFs for most companies include:

- Adherence to schedules
- Adherence to budgets
- Adherence to quality
- Appropriateness and timing of signoffs
- Adherence to the change control process
- Add-ons to the contract

CSFs measure the end result, usually as seen through the eyes of the customer. KPIs measure the quality of the process to achieve the end results. KPIs are internal measures and can be reviewed on a periodic basis throughout the life cycle of a project. Typical KPIs include:

- Use of the project management methodology
- Establish control processes
- Use of interim metrics
- Quality of resources assigned versus planned for
- Client involvement

KPIs answer such questions as: Did we use the methodology correctly? Did we keep management informed, and how frequently? Were the proper resources assigned, and were they used effectively? Were there lessons learned that could necessitate updating the methodology or its use? Companies that are excellent in project management measure success both internally and externally using KPIs and CSFs. As an example, consider the following remarks provided by a spokesperson from Nortel Networks:

Nortel defines project success based on schedule, cost, and quality measurements, as mutually agreed upon by the customer, the project team, and key stakeholders. Examples of key performance indicators may include completion of key project milestones, product installation/integration results, change management results, completion within budget, and so on. Project status and results are closely monitored and jointly reviewed with the customer and project team on a regular basis throughout a project to ensure consistent expectations and overall success. Project success is ultimately measured by customer satisfaction.

Here are additional definitions of CSFs and KPIs:

CSFs

Success factors are defined at the initial stages of the project or program, even before they become actual contracts, and are a direct consequence of the strategic goals allocated to the project or program. Many times, these factors are associated with expanding the market share in a product line or developing new markets, both technically and geographically.

Enrique Sevilla Molina, PMP, formerly corporate PMO director, Indra

Obviously, CSFs vary with projects and intent. Here are some that apply to a large variety of projects:

- Early customer involvement
- High-quality standards
- Defined processes and formalized gate reviews
- Cross-functional team organizational structure
- Control of requirements, prevention of scope creep
- Commitment to schedules—disciplined planning for appropriate level of detail and objective and frequent tracking
- Commitment of resources—right skill level at necessary time
- Communication among internal teams and with customers
- Early risk identification, management, and mitigation—no surprises
- Unequaled technical execution based on rigorous engineering.

Comments provided by a spokesperson at Motorola

KPIs

Our most common KPIs are associated to the financial projects results, for instance, project margin compliance with the allocated strategic target, new contracts figure for the business development area goals, etc. Success factors are translated into performance indicators so they are periodically checked.

By default, a first indication of projects health is provided by the schedule and cost performance indices (SPI and CPI) embedded into the PM tools. They are provided monthly by the project management information system and they are also available for historical analysis and review. These indicators are also calculated for each department, so they constitute an indicator of the overall cost and schedule performance of the department or business unit.

Enrique Sevilla Molina, PMP, formerly corporate PMO director, Indra

Postship acceptance indicators:

- Profit and loss
- Warranty returns
- Customer reported unique defects
- Satisfaction metrics

In-process indicators:

- Defect trends against plan
- Stability for each build (part count changes) against plan

Feature completion against plan:

- Schedule plan versus actual performance
- Effort plan versus actual performance
- Manufacturing costs and quality metrics
- Conformance to quality processes and results of quality audits
- System test completion rate and pass/fail against plan
- Defect/issue resolution closure rate

- Accelerated life-testing failure rates against plan
 - Prototype defects per hundred units (DPHU) during development against plan
- Provided by a spokesperson at Motorola**

The SOW provides a checklist of basic indicators for the success of the project, but client satisfaction is also important. The SOW will indicate what the deliverables are and will provide information on costs and timelines that can be easily tracked.

Most people seem to understand that CSFs and KPIs can be different from project to project. However, there is a common misbelief that CSFs and KPIs, once established, must not change throughout the project. As projects go through various life-cycle phases, these indicators can change.

In the author's experience, more than 90 percent of the best practices that companies identify come from analysis of the KPIs during the debriefing sessions at the completion of a project or at selected gate review meetings. Because of the importance of extracting these best practices, some companies are now training professional facilitators capable of debriefing project teams and capturing the best practices.

Before leaving this section, it is necessary to understand who discovers the best practices. Best practices are discovered by the people performing the work, namely the project manager, project team, and possibly the line manager. According to a spokesperson from Motorola:

The decision as to what is termed a best practice is made within the community that performs the practice. Process capabilities are generally known and baselined. To claim best practice status, the practice or process must quantitatively demonstrate significant improvements in quality, efficiency, cost, and/or cycle time. The management of the organization affected as well as process management must approve the new practice prior to institutionalization.

Generally, the process of identification begins with the appropriate team member. If the team member believes that he or she has discovered a best practice, they then approach their respective line manager and possibly project manager for confirmation. Once confirmation is agreed upon, the material is sent to the PMO for validation. After validation, the person who identified the best practice is given the title of "Best Practice Owner" and has the responsibility of nurturing and cultivating the best practice.

Some companies use professional facilitators to debrief project teams in order to extract best practices. These facilitators may be assigned to the PMO and are professionally trained in how to extract lessons learned and best practices from both successes and failures. Checklists and templates may be used as part of the facilitation process.

1.15 DASHBOARDS AND SCORECARDS ---

In our attempt to go to paperless project management, emphasis is being given to visual displays such as dashboards and scorecards utilizing and displaying CSFs and KPIs. Executives and customers desire a visual display of the most critical project performance

information in the least amount of space. Simple dashboard techniques, such as traffic light reporting, can convey critical performance information. As an example:

- *Red traffic light.* A problem exists that may affect time, cost, quality, or scope. Sponsorship involvement is necessary.
- *Yellow or amber light.* This is a caution. A potential problem may exist, perhaps in the future, if not monitored. The sponsor is informed, but no action by the sponsor is necessary at this time.
- *Green light.* Work is progressing as planned. No involvement by the sponsor is necessary.

While a traffic light dashboard with just three colors is most common, some companies use many more colors. The IT group of a retailer had an eight-color dashboard for IT projects. An amber color meant that the targeted end date had passed and the project was still not complete. A purple color meant that this work package was undergoing a scope change that could have an impact on the triple constraint.

Some people confuse dashboards with scorecards. There is a difference between dashboards and scorecards. According to Eckerson:¹⁵

- Dashboards are visual display mechanisms used in an *operationally* oriented performance measurement system that measure performance against targets and thresholds using real-time data.
- Scorecards are visual displays used in a *strategically* oriented performance measurement system that chart progress toward achieving strategic goals and objectives by comparing performance against targets and thresholds.¹⁶

Both dashboards and scorecards are visual display mechanisms within a performance measurement system that convey critical information. The primary difference between dashboards and scorecards is that dashboards monitor operational processes such as those used in project management, whereas scorecards chart the progress of tactical goals. Table 1–4 and the description following it show how Eckerson compares the features of dashboards and scorecards.

TABLE 1–4. COMPARING FEATURES

Feature	Dashboard	Scorecard
Purpose	Measures performance	Charts progress
Users	Supervisors, specialists	Executives, managers, and staff
Updates	Right-time feeds	Periodic snapshots
Data	Events	Summaries
Display	Visual graphs, raw data	Visual graphs, comments

Source: W. Eckerson, *Performance Dashboards: Measuring, Monitoring and Managing Your Business* (Hoboken, NJ: Wiley, 2006), p. 13/John Wiley & Sons.

15. W. Eckerson, *Performance Dashboards: Measuring, Monitoring and Managing Your Business* (Hoboken, NJ: Wiley, 2006, p. 293). Chapter 12 provides an excellent approach to designing dashboard screens.

16. *Ibid.*, p. 295.

Dashboards: Dashboards are more like automobile dashboards. They let operational specialists and their supervisors monitor events generated by key business processes. But unlike automobiles, most business dashboards do not display events in “real time,” as they occur; they display them in “right time,” as users need to view them. This could be every second, minute, hour, day, week, or month depending on the business process, its volatility, and how critical it is to the business. However, most elements on a dashboard are updated on an intraday basis, with latency measured in either minutes or hours.

Dashboards often display performance visually, using charts or simple graphs, such as gauges and meters. However, dashboard graphs are often updated in place, causing the graph to “flicker” or change dynamically. Ironically, people who monitor operational processes often find the visual glitz distracting and prefer to view the data in the original form, as numbers or text, perhaps accompanied by visual graphs.

Scorecards: Scorecards, on the other hand, look more like performance charts used to track progress toward achieving goals. Scorecards usually display monthly snapshots of summarized data for business executives who track strategic and long-term objectives, or daily and weekly snapshots of data for managers who need to chart the progress of their group of projects toward achieving goals. In both cases, the data are fairly summarized so users can view their performance status at a glance.

Like dashboards, scorecards also make use of charts and visual graphs to indicate performance state, trends, and variance against goals. The higher up the users are in the organization, the more they prefer to see performance encoded visually. However, most scorecards also contain (or should contain) a great deal of textual commentary that interprets performance results, describes action taken, and forecasts future results.

Summary: In the end, it does not really matter whether you use the term “dashboard” or “scorecard” as long as the tool helps to focus users and organizations on what really matters. Both dashboards and scorecards need to display critical performance information on a single screen so users can monitor results at a glance.¹⁷

Although the terms are used interchangeably, most project managers prefer to use dashboards and/or dashboard reporting. Eckerson defines three types of dashboards, as shown in Table 1–5 and the description that follows.

- *Operational dashboards* monitor core operational processes and are used primarily by front-line workers and their supervisors who deal directly with customers or manage the creation or delivery of organizational products and

TABLE 1–5. THREE TYPES OF PERFORMANCE DASHBOARDS

	Operational	Tactical	Strategic
Purpose	Monitor operations	Measure progress	Execute strategy
Users	Supervisors, specialists	Managers, analysts	Executives, managers, staff
Scope	Operational	Departmental	Enterprise
Information	Detailed	Detailed/summary	Detailed/summary
Updates	Intraday	Daily/weekly	Monthly/quarterly
Emphasis	Monitoring	Analysis	Management

Source: W. Eckerson, *Performance Dashboards: Measuring, Monitoring and Managing Your Business* (Hoboken, NJ: Wiley, 2006), p. 18/John Wiley & Sons.

17. *Ibid.*, p. 13.

services. Operational dashboards primarily deliver detailed information that is only lightly summarized. For example, an online Web merchant may track transactions at the product level rather than the customer level. In addition, most metrics in an operational dashboard are updated on an intraday basis, ranging from minutes to hours depending on the application. As a result, operational dashboards emphasize monitoring more than analysis and management.

- *Tactical dashboards* track departmental processes and projects that are of interest to a segment of the organization or a limited group of people. Managers and business analysts use tactical dashboards to compare performance of their areas or projects, to budget plans, forecasts, or last period's results. For example, a project to reduce the number of errors in a customer database might use a tactical dashboard to display, monitor, and analyze progress during the previous 12 months toward achieving 99.9 percent defect-free customer data by 2007.
- *Strategic dashboards* monitor the execution of strategic objectives and are frequently implemented using a balanced scorecard approach, although total quality management, Six Sigma, and other methodologies are used as well. The goal of a strategic dashboard is to align the organization around strategic objectives and get every group marching in the same direction. To do this, organizations roll out customized scorecards to every group in the organization and sometimes to every individual as well. These "cascading" scorecards, which are usually updated weekly or monthly, give executives a powerful tool to communicate strategy, gain visibility into operations, and identify the key drivers of performance and business value. Strategic dashboards emphasize management more than monitoring and analysis.¹⁸

Three critical steps must be considered when using dashboards: (1) the target audience for the dashboard, (2) the type of dashboard to be used, and (3) the frequency with which the data will be updated. Some project dashboards focus on the KPIs that are part of earned-value measurement. These dashboards may need to be updated daily or weekly. Dashboards related to the financial health of the company may be updated weekly or quarterly. Figures 1–10 and 1–11 show the type of information that would be tracked weekly or quarterly to view corporate financial health.

1.16 KEY PERFORMANCE INDICATORS

Most often, the items that appear in the dashboards are elements that both customers and project managers track. These items are referred to as KPIs and were discussed previously. According to Eckerson: "A KPI is a metric measuring how well the organization or individual performs an operational, tactical or strategic activity that is critical for the current and future success of the organization."¹⁹

18. Ibid., pp. 17–19.

19. Ibid., p. 294.

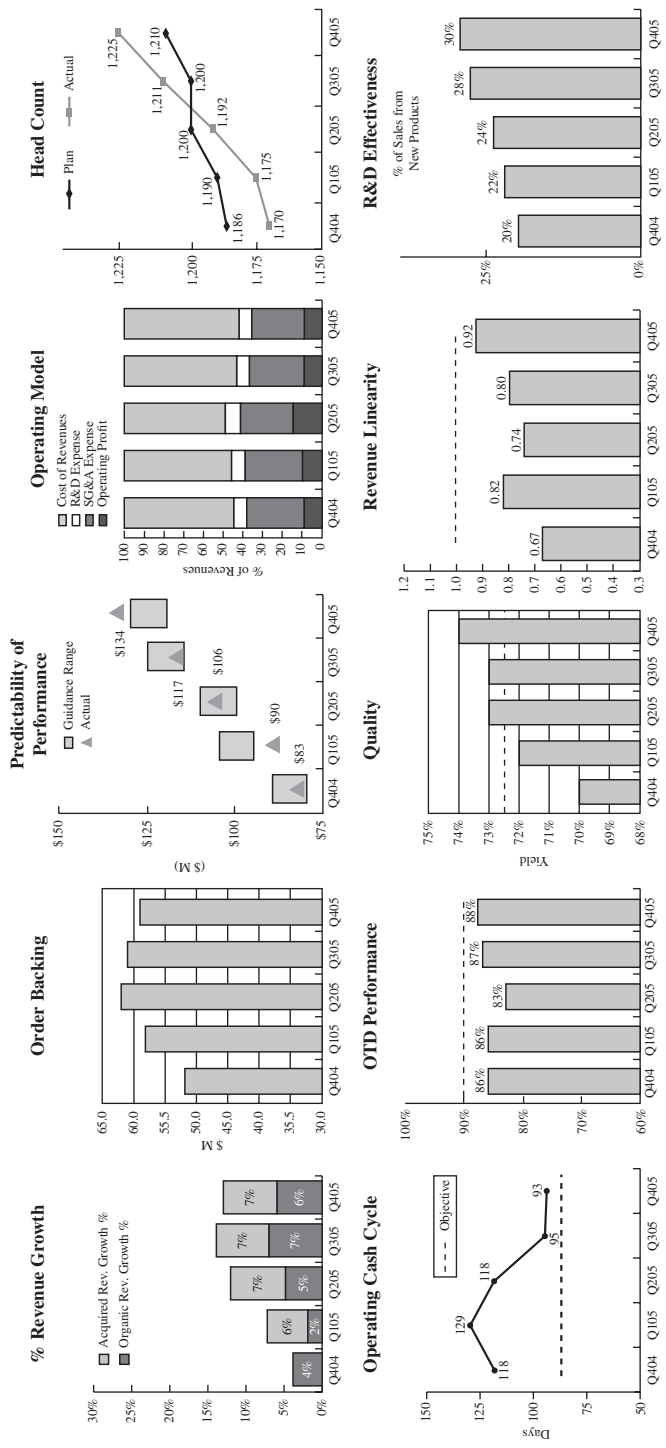
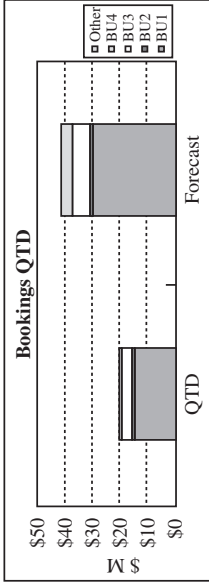


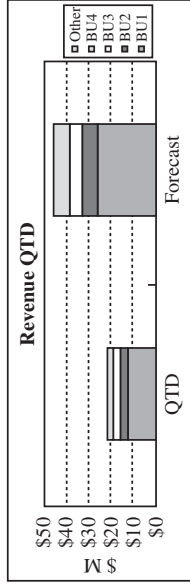
Figure 1-10. Typical financial health dashboards.
 Source: Reproduced from J. Alexander, *Performance Dashboards and Analysis for Value Creation* (Hoboken, NJ: Wiley, 2007), pp. 87-88/with permission of John Wiley & Sons.

XYZ Company
Q4' 05 Week #7 of 13/54% of Q4
 (\$ in Millions)

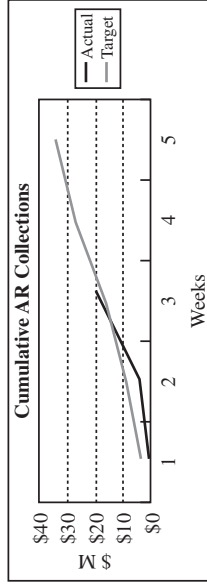
Bookings	Week	Unit	QTD	Forecast	% Achieved	\$ Required
	0.7	BU 1	15.0	30.0	50%	15.0
	—	BU 2	0.9	1.0	89	0.1
	0.5	BU 3	4.0	6.0	67	2.0
	0.4	BU 4	1.7	4.7	37	2.9
	0.0	Other	0.1	—	(0.1)	(0.1)
	1.6	Totals	21.7	41.7	52%	\$20.0



Revenue	Week	Unit	QTD	Forecast	% Achieved	Backlog	Req'd Fill
	2.0	BU 1	13.0	28.0	46%	5.0	10.00
	0.4	BU 2	3.0	5.0	60	1.0	1.00
	0.0	BU 3	3.0	6.0	50	2.0	1.00
	2.6	BU 4	3.0	7.0	43	1.0	3.00
	—	Other	—	—	—	—	—
	5.0	Totals	22.0	46.0	48%	9.0	15.0



Receivable Collections (Cumulative)	Week	1	2	3	4	5
Actual		1.0	5.0	19.0		
Target		4.0	9.0	17.0	28.0	35.0



Process Yield	Day	1	2	3	4	5
		77%	80%	81%	68%	82%

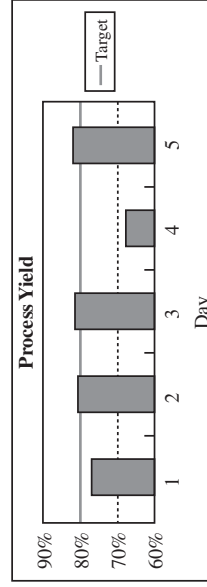


Figure 1-11. Typical financial health dashboards.
 Source: Reproduced from J. Alexander, *Performance Dashboards and Analysis for Value Creation* (Hoboken, NJ: Wiley, 2007), pp. 87-88/with permission of John Wiley & Sons.

Some people confuse KPIs with leading indicators. A leading indicator is actually a KPI that measures how the work one is doing now will affect the future.

KPIs are critical components of all earned-value measurement systems. Cost variance, schedule variance, schedule performance index, cost performance index, and time/cost at completion are actually KPIs but are not referred to as such. The need for these KPIs is simple: What gets measured gets done! If the goal of a performance measurement system is to improve efficiency and effectiveness, then the KPI must reflect controllable factors. There is no point in measuring an activity if the users cannot change the outcome.

Eckerson identifies 12 characteristics of effective KPIs:

1. *Aligned*. KPIs are always aligned with corporate (or project) strategy and objectives.
2. *Owned*. Every KPI is “owned” by an individual or group on the business (or project) side that is accountable for its outcome.
3. *Predictive*. KPIs measure drivers of business (or project) value. Thus, they are “leading” indicators of performance desired by the organization.
4. *Actionable*. KPIs are populated with timely, actionable data so users can intervene to improve performance before it is too late.
5. *Few in number*. KPIs should focus users on a few high-value tasks, not scatter their attention and energy on too many things.
6. *Easy to understand*. KPIs should be straightforward and easy to understand, not based upon complex indices that users do not know how to influence directly.
7. *Balanced and linked*. KPIs should balance and reinforce each other, not undermine each other and suboptimize processes.
8. *Trigger changes*. The act of measuring a KPI should trigger a chain reaction of positive changes in the organization (or project), especially when it is monitored by the CEO (or customers or sponsors).
9. *Standardized*. KPIs are based on standard definitions, rules, and calculations so they can be integrated across dashboards throughout the organization.
10. *Context-driven*. KPIs put performance in context by applying targets and thresholds to it so users can gauge their progress over time.
11. *Reinforced with incentives*. Organizations can magnify the impact of KPIs by attaching compensation or incentives to them. However, they should do this cautiously, applying incentives only to well-understood and stable KPIs.
12. *Relevant*. KPIs gradually lose their impact over time, so they must be periodically reviewed and refreshed.²⁰

There are several reasons why the use of KPIs often fails on projects, including:

- People believe that the tracking of a KPI ends at the first-line manager level.
- The actions needed to regulate unfavorable indications are beyond the control of the employees doing the monitoring or tracking.

20. Ibid., p. 201.

- The KPIs are not related to the actions or work of the employees doing the monitoring.
- The rate of change of the KPIs is too slow, thus making them unsuitable for managing the daily work of the employees.
- Actions needed to correct unfavorable KPIs take too long.
- Measurement of the KPIs does not provide enough meaning or data to make them useful.
- The company identifies too many KPIs, to the point where confusion reigns among the people doing the measurements.

Years ago, the only metrics that some companies used were those identified as part of the earned-value measurement system. The metrics generally focused only on time and cost and neglected metrics related to business success as opposed to project success. Therefore, the measurement metrics were the same for each project and for each life-cycle phase. Today, metrics can change from phase to phase and from project to project. The hard part is, obviously, deciding which metrics to use. Care must be taken that whatever metrics are established do not end up comparing apples and oranges. Fortunately, several good books in the marketplace can assist in identifying proper or meaningful metrics.²¹

Selecting the right KPIs is critical. Since a KPI is a form of measurement, some people believe that KPIs should be assigned only to those elements that are tangible. Therefore, many intangible elements that should be tracked by KPIs never get looked at because someone believes that measurement is impossible. Anything can be measured, regardless of what some people think. According to Hubbard:

- Measurement is a set of observations that reduces uncertainty where the results are expressed as a quantity.
- A mere reduction, not necessarily elimination, of uncertainty will suffice for a measurement.²²

Therefore, KPIs can be established even for intangibles like those discussed later in this book in the chapter on value-driven project management (Chapter 16).

Hubbard believes that five questions should be asked before we establish KPIs for measurement:

1. What is the decision this (KPI) is supposed to support?
2. What really is the thing being measured (by the KPI)?
3. Why does this thing (and the KPI) matter to the decision being asked?

21. Three books that provide examples of metric identification are P. F. Rad and G. Levin, *Metrics for Project Management: Formalized Approaches* (Vienna, VA: Management Concepts, 2006); M. Schnapper and S. Rollins, *Value-Based Metrics for Improving Results: An Enterprise Project Management Toolkit* (Fort Lauderdale, FL: J. Ross Publishing, 2006); and D. W. Hubbard, *How to Measure Anything* (3rd ed.) (Hoboken, NJ: Wiley, 2014).

22. Hubbard, *How to Measure Anything*, p. 21.

4. What do you know about it now?
5. What is the value of measuring it further?²³

Hubbard also identifies four useful measurement assumptions that should be considered when selecting KPIs:

1. Your problem (in selecting a KPI) is not as unique as you think.
2. You have more data than you think.
3. You need less data than you think.
4. There is a useful measurement that is much simpler than you think.²⁴

Selecting the right KPIs is essential. On most projects, only a few KPIs are needed. Sometimes we seem to select too many KPIs and end up with some KPIs that provide us with little or no information value, and the KPI ends up being unnecessary or useless in assisting us in making project decisions.

Sometimes, companies believe that the measures that they have selected are KPIs when, in fact, they are forms of performance measures but not necessarily KPIs. David Parmenter discusses four types of performance measures:

These four measures are in two groups: result indicators and performance indicators.

I use the term result indicators to reflect the fact that many measures are a summation of more than one team's input. These measures are useful in looking at the combined teamwork but, unfortunately, do not help management fix a problem as it is difficult to pinpoint which teams were responsible for the performance or nonperformance.

Performance indicators, on the other hand, are measures that can be tied to a team or a cluster of teams working closely together for a common purpose. Good or bad performance is now the responsibility of one team. These measures thus give clarity and ownership. With both these measures some are more important, so we use the extra word "key." Thus, we now have two measures for each measure type:

1. Key result indicators (KRIs) give the board an overall summary of how the organization is performing.
2. Result indicators (RIs) tell management how teams are combining to produce results.
3. Performance indicators (PIs) tell management what teams are delivering.
4. Key performance indicators (KPIs) tell management how the organization is performing in their critical success factors and, by monitoring them, management is able to increase performance dramatically.²⁵

23. *Ibid.*, p. 43.

24. *Ibid.*, p. 31.

25. David Parmenter, *Key Performance Indicators*, (3rd ed.) (Hoboken, NJ: Wiley, 2014), pp. 3–4.

Parmenter believes that:

There are seven foundation stones that need to be laid before we can successfully develop and utilize key performance indicators (KPIs) in the workplace. Success or failure of the KPI project is determined by the presence or absence of these seven foundation stones.

1. Partnership with the staff, unions, key suppliers, and key customers
2. Transfer of power to the front line
3. Integration of measurement, reporting, and improvement of performance
4. Linkage of performance measures to strategy
5. Abandon processes that do not deliver
6. Appointment of a homegrown chief measurement officer
7. Organization-wide understanding of the winning KPIs definition²⁶

In a project environment, the performance measures can change from project to project and phase to phase. The identification of these measures is performed by the project team, including the project sponsor. Project stakeholders may have an input as well. Corporate performance measures are heavily financially oriented and may undergo very little change over time. The measurements indicate the financial health of the corporation.

Establishing corporate performance measures related to strategic initiatives or other such activities must be treated as a project in itself, and supported by the senior management team (SMT).

The SMT attitude is critical—any lack of understanding, commitment, and prioritizing of this important process will prevent success. It is common for the project team and the SMT to fit a KPI project around other competing, less important firefighting activities.

The SMT must be committed to the KPI project, to driving it down through the organization. Properly implemented, the KPI project will create a dynamic environment. Before it can do this, the SMT must be sold on the concept. This will lead to the KPI project's being treated as the top priority, which may mean the SMTs allow some of those distracting fires to burn themselves out.²⁷

1.17 MANUFACTURING BEST PRACTICES IN ACTION²⁸

Not all best practices have to be difficult or costly to find and implement. Many simple actions can be taken that will greatly improve efficiency, productivity, and quality. Take, for example, reducing Set-up Time. We are all aware that frequent set-up changes

26. *Ibid.*, p. 26.

27. *Ibid.*, p. 260. Chapter 5 of this book has excellent templates for reporting KPIs.

28. This section, "Manufacturing Best Practices in Action", has been provided by Rick Titone. ©2022 by Rick Titone. All rights reserved. Reproduced with permission.

to machinery or processes are necessary in most manufacturing operations. In such instances, the machine tool or die, the process, or the material being used must be shut down to accomplish the change. During the time that this shutdown and changeover occurs, there is no production taking place, or no product is being produced. Therefore, such time is totally wasted time. By reducing the amount of this downtime, both efficiency and productivity can be improved. However, accomplishing such a reduction involves changes to the current equipment and/or methods being used in the process.

Such changes may sometimes meet with resistance from several different sources, such as the machine or process operator, product engineers or financial personnel. We have all encountered the initial response to change, which is, “We’ve always done it this way.” That may have been satisfactory in the past. But there may be a better way now and in the future. Therefore, we must find innovative ways to overcome such resistance and get the change implemented.

Now, some given facts are: People are naturally and inherently resistant to change. It upsets their routines or causes disruptions in their normal operations. However, there are several soundly proven methods that can be applied to overcome resistance to the innovative implementation of change that work in almost any area: People will accept change if it is their idea. There will be immediate acceptance, with no resistance. So, when change is required, talk to the people involved. Explain the change and the reasons why. Try to get their “By-In” ahead of time. Then there will be no resistance to the change itself.

People will accept change if there is something in it for them. For example, a financial or job position improvement. If the change results in such circumstances. Be sure to explain such benefits when explaining the change.

People will accept change if there is benefit to them in their current position. Will the change make their job easier, cleaner, less physical, or provide similar improvements? Include these benefits when explaining the change.

Lastly, people will accept change if it is mandated or required by a higher authority, either from corporate offices or outside forces, such as governmental authorities. Then the change will have to be implemented. Here is where the most resistance to change will occur. In some cases, operators or set-up operators will sometimes even take actions to make sure that the change, once implemented, doesn’t work.

Now, let’s talk about machine set-up reduction. Set-up time begins from the last good piece to the first good piece of a part on any machine. It is pure downtime, wasted nonproductive time, and all efforts must be exercised to eliminate as much of it as possible in all operations.

Back in 1988, Dr. Shigeo Shingo, working for Toyota, authored a book outlining a process for reducing machine and tool changeovers entitled; “Single Minute Exchange of Die”, which won a Nobel Prize. “Single Minute of Exchange of Die” meant that all machine tool or die changes in any manufacturing operation should be able to be changed over from one part being produced to the new part to be made in less than one minute. Now, that may seem like a very short period. But just look at your wristwatch and see how long it takes for the second hand to go all the way around the dial. You probably couldn’t hold your breath for that long.

Not only did Shingo propose such a feat, but he also explained how it could be accomplished. Some of his methods involve: Having tools or dies re-located from tool cribs, sometimes located far away from the machines they served, to a rack directly adjacent to the machines that used them, greatly reduced changeover times. Modifying tools or dies makes them easier to remove and reinstall by using large clamps instead of bolts, studs, and nuts. If such fasteners are absolutely required, employ breakaway bolts that will fold over after loosening just one turn of the nut. Modifying tools or dies to facilitate quick accurate insertion by employing dowel pins or adding insert tracks to eliminate any adjustments to the tool or die once it is inserted. Having duplicate tools or dies available that can be preset-up prior to the need to change over the current set-up. Teaching machine operators to make their own set-ups. Most of these simple, innovative changes can be accomplished for very little money and the modifications can usually be made in-house.

Shingo's books and methods are still actively being applied in manufacturing operations worldwide, now combined with the Just-In-Time manufacturing methods also established by Toyota.

A Case Study

At an electronic device manufacturing factory in Singapore, there was a bank of 20 winding machines winding gold wire thinner than a human hair around a ceramic core. There were many different codes being produced, each having a different number of turns or layers of wire that would designate the code number of the device and the function it served in the end product. At the end of each run of a particular code, the center section of the winding machine had to be removed by a set-up operator, taken to his bench, and the center section adjusted to accommodate the winding requirements of the next code to be manufactured. Then returned and reinstalled into the winding machine. Set-up times ranged from 12 to 15 minutes during which time the winding machine stood idle, and the operator just sat and waited for the center section of the machine to be returned and reinstalled.

After a review of the operation, the question was asked; "How much does a new center section for a winding machine cost?" The first reply was, "A lot." Which was typical of the oriental mindset. Additional inquiries resulted in a price of approximately US\$1,000 each, obtained from the US machine manufacturer. A request was made to purchase five new winding machine center sections for the additional cost of approximately US\$6,000 delivered. Once received, a master schedule system for tracking which codes were scheduled to be produced on each machine allowed the set-up operators to pre-set up a duplicate center section for that winding machine before the run of that code was completed. Then the exchange of the center section of that particular machine could be made in less than one minute, and production of the new code could begin. In addition, dowel pins were installed on the back of each winding machine center section to provide for immediate lock-in of the section upon reinstallation thereby eliminating any adjustments needed after the initial installation. Both set-up times and production efficiency increased tremendously for a very minimal investment.

1.18 STEP 3: VALIDATING THE BEST PRACTICE

Previously, we stated that seeking out a best practice is done by the project manager, project team, functional manager, and/or possibly a professional facilitator trained in how to debrief a project team and extract best practices. Any or all of these people must believe that what they have discovered is, in fact, a best practice. When project managers are quite active in a project, emphasis is placed on the project manager to make the final decision on what constitutes a best practice. According to a spokesperson for AT&T, the responsibility for determining what is a best practice rests with “the individual project manager that shows how it had a positive impact on their project.”

Although this is quite common, there are other validation methods that may involve a significant number of people. Sometimes project managers may be removed from where the work is taking place and may not be familiar with activities that could lead to the identification of a best practice. Companies that have a PMO place a heavy reliance on the PMO for support because the approved best practices are later incorporated into the methodology, and the PMO is usually the custodian of the methodology based upon the type of PMO.

Once the management of the organization affected initially approves the new best practice, it is forwarded to the PMO, or process management for validation and then institutionalization. The PMO may have a separate set of checklists to validate the proposed best practice. The PMO must also determine whether or not the best practice is company proprietary, because that will determine where the best practice is stored and whether the best practice will be shared with customers.

The best practice may be placed in the company’s best practice library or, if appropriate, incorporated directly into the company’s stage gate checklist. Based on the complexity of the company’s stage gate checklist process and enterprise project management methodology, the incorporation process may occur immediately or on a quarterly basis.

According to Chuck Millhollan, formerly director of program management at Churchill Downs Incorporated: “We do not label our processes or methods as ‘best practices’. We simply learn from our lessons and ensure that learning is incorporated into our methodology, processes, templates, etc.”

Some organizations have committees not affiliated with the PMO that have as their primary function the evaluation of potential best practices. Anyone in the company can provide potential best practices data to the committee, and the committee in turn does the analysis. Project managers may be members of the committee. Other organizations use the PMO to perform this work. These committees and the PMO most often report to the senior levels of management.

The fourth, fifth, and sixth editions of the *PMBOK® Guide* emphasize the importance of stakeholder involvement in projects. This involvement may also include the final decision on whether or not a discovery is a best practice. According to Chuck Millhollan:

Ultimately, the final decision resides with our stakeholders, both internal and external. Another way of putting this is that the PMO does not make the decision if a method or process works. We actively seek feedback from our project stakeholders and use

their inputs to determine if our processes are “best practices” for Churchill Downs Incorporated. The specific best practices identified previously, among others, have even been accepted outside of the PMO as generally accepted practices.

Another example of stakeholder involvement is provided by Enrique Sevilla Molina, PMP, formerly corporate PMO director, Indra:

The decision is taken by the corporate PMO responsible, the business unit manager, the local PMO authority, or even the cognizant authority, if it is the case. It depends on the subject and the scope of the task. Some of the management best practices have been established at corporate level, and they have been incorporated into the PM methodology. Many of them have also been incorporated into the Project Management Information Systems and the corporate PM tooling.

Evaluating whether something is a best practice is not time-consuming, but it is complex. Simply because someone believes that what he or she is doing is a best practice does not mean that it is in fact a best practice. Some PMOs are currently developing templates and criteria for determining whether an activity may qualify as a best practice. Some items that are included in the template might be:

- Is transferable to many projects
- Enables efficient and effective performance that can be measured (i.e., can serve as a metric)
- Enables measurement of possible profitability using the best practice
- Allows an activity to be completed in less time and at a lower cost
- Adds value to both the company and the clients
- Can differentiate us from everyone else

One company had two unique characteristics in its best practices template:

1. Helps to avoid failure
2. If a crisis exists, it helps us to get out of a critical situation

Executives must realize that these best practices are, in fact, intellectual property that benefits the entire organization. If the best practice can be quantified, then it is usually easier to convince senior management of its value.

1.19 STEP 4: LEVELS OF BEST PRACTICES ---

As stated previously, best practices come from knowledge transfer and can be discovered anywhere within or outside of your organization. This is shown in Figure 1–12.

Companies that maintain best practices libraries that contain a large number of best practices may create levels of best practices. Figure 1–13 shows various levels of

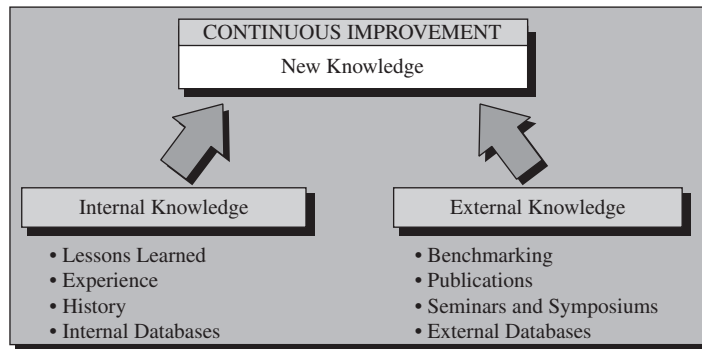


Figure 1–12. Knowledge transfer.

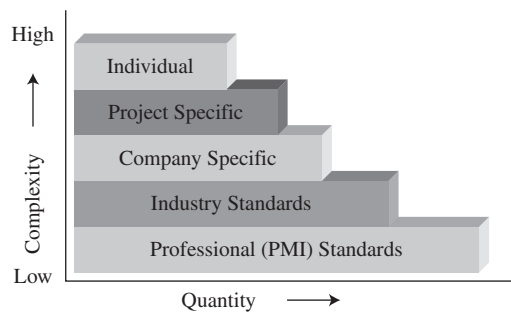


Figure 1–13. Levels of best practices.

best practices. Each level can have categories within the level. The bottom level is the professional standards level, which would include professional standards as defined by PMI. The professional standards level contains the greatest number of best practices, but they are more of a general nature than specific and have a low level of complexity.

The industry standards level would identify best practices related to performance within the industry. The automotive industry has established standards and best practices specific to the auto industry.

As we progress to the individual best practices in Figure 1–13, the complexity of the best practices goes from general to very specific applications, and, as expected, the number of best practices decreases. An example of a best practice at each level might be (from general to specific):

- *Professional standards.* Preparation and use of a risk management plan, including templates, guidelines, forms, and checklists for risk management.
- *Industry specific.* The risk management plan includes industry best practices, such as the best way to transition from engineering to manufacturing.

- *Company specific.* The risk management plan identifies the roles and interactions of engineering, manufacturing, and quality assurance groups during transition.
- *Project specific.* The risk management plan identifies the roles and interactions of affected groups as they relate to a specific product/service for a customer.
- *Individual.* The risk management plan identifies the roles and interactions of affected groups based on their personal tolerance for risk, possibly through the use of a responsibility assignment matrix prepared by the project manager.

Best practices can be extremely useful during strategic planning activities. As shown in Figure 1–14, the bottom two levels may be more useful for project management strategy formulation, whereas the top three levels are more appropriate for the execution or implementation of a strategy.

Not all companies maintain a formal best practices library. In some companies, when a best practice is identified and validated, it is immediately placed into the stage gate process or the project management methodology. In such a case, the methodology itself becomes the best practice. Enrique Sevilla Molina, PMP, states:

In fact, our Project Management methodology constitutes our established library of best practices applicable to every project in the company. There are additional best practices libraries in different business units. There are, for instance, detailed instructions for proposal preparation or for cost and schedule estimation purposes, which are appropriate for the specific business or operations area.

When asked how many best practices they maintain at Indra, he commented:

It is hard to say because of the subject itself and the multiplicity of business areas in the company. If we consider our PM methodology as a set of “best practices,” it would be difficult to count every best practice included.

Besides our internally published *Indra Project Management Methodology Manual*, we have for instance specific guides at corporate level for WBS elaboration, project risk management, and the project’s performance measurement based on earned value techniques. We have also specific instructions published for proposal preparation, costs estimation, and even detailed WBS preparation rules and formats for different business unit levels.

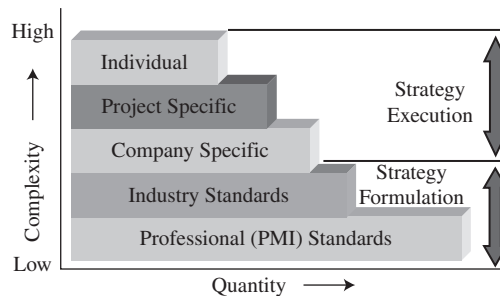


Figure 1–14. Usefulness of best practices.

1.20 STEP 5: MANAGEMENT OF BEST PRACTICES ---

There are three players involved in the management of the best practices:

1. The best practice's owner
2. The PMO
3. The best practices' library administrator, who may reside in the PMO

The owner of the best practice, who usually resides in the functional area, has the responsibility of maintaining the integrity of the best practice. The title "best practice owner" is usually an uncompensated and unofficial one but it is prestigious. Therefore, the owner of the best practice tries to enhance it and keep the best practice alive as long as possible.

The PMO usually has the final authority over best practices and makes the final decision on where to place them, who should be allowed to see them, how often they should be reviewed or revalidated, and when they should be removed from service.

The library administrator is merely the caretaker of the best practice and may keep track of how often people review the best practice, assuming it is readily accessible in the best practice library. The library administrator may not have a good understanding of each best practice and may not have any voting rights on when to terminate a best practice.

1.21 STEP 6: REVALIDATING BEST PRACTICES ---

Best practices do not remain best practices forever. Because best practices are directly related to the company's definition of project success, the definition of a best practice can change and age as the definition of success changes. Therefore, best practices must be periodically reviewed. The critical question is: How often should they be reviewed? The answer to this question is based on how many best practices are in the library. Some companies maintain just a few best practices, whereas large, multinational companies may have thousands of clients and maintain hundreds of best practices in their libraries. If the company sells products as well as services, then there can be both product-related and process-related best practices in the library.

The following two examples illustrate the need for reviewing best practices.

According to a spokesperson from EDS, "Once a practice has been nominated and approved to be a best practice, it is only sanctioned until the next yearly review cycle. Over time, best practices have the tendency to lose value and become ineffective if they are allowed to age."

A spokesperson from Computer Associates said this:

Best practices are reviewed every four months. Input into the review process includes:

- Lessons learned documents from project completed within the past four months
- Feedback from project managers, architects, and consultants

- Knowledge that subject matter experts (i.e., best practices owners) bring to the table; this includes information gathered externally as well as internally
- Best practices library reporting and activity data

There are usually three types of decisions that can be made during the review process:

1. Keep the best practice as is until the next review process.
2. Update the best practice and continue using it until the next review process.
3. Retire the best practice from service.

1.22 STEP 7: WHAT TO DO WITH A BEST PRACTICE ---

Given the definition that a best practice is an activity that leads to a sustained competitive advantage, it is no wonder that some companies have been reluctant to make their best practices known to the general public. Therefore, what should a company do with its best practices if not publicize them? The most common options available include:

- *Sharing knowledge internally only.* This is accomplished by using the company's intranet to share information with employees. There may be a separate group within the company responsible for controlling the information, perhaps even the PMO. Not all best practices are available to every employee. Some best practices may be password protected, as discussed below.
- *Hidden from all but a select few.* Some companies spend vast amounts of money on the preparation of forms, guidelines, templates, and checklists for project management. These documents are viewed as both company-proprietary information and best practices and are provided to only a select few on a need-to-know basis. An example of a "restricted" best practice might be specialized forms and templates for project approval where information contained may be company-sensitive financial data or the company's position on profitability and market share.
- *Advertise to the company's customers.* In this approach, companies may develop a best practices brochure to market their achievements and may also maintain an extensive best practices library that is shared with their customers after contract award. In this case, best practices are viewed as competitive weapons.

Most companies today utilize some form of best practices library. According to a spokesperson from AT&T:

The best practices library is Sharepoint based and very easy to use both from a submission and a search perspective. Any project manager can submit a best practice at any time and can search for best practices submitted by others.

Even though companies collect best practices, not all best practices are shared outside of the company, even during benchmarking studies where all parties are expected to share information. Students often ask why textbooks do not include more information on detailed best practices, such as forms and templates. One company spokesperson commented to the author:

We must have spent at least \$1 million over the last several years developing an extensive template on how to evaluate the risks associated with transitioning a project from engineering to manufacturing. Our company would not be happy giving this template to everyone who wants to purchase a book for \$85. Some best practices templates are common knowledge, and we would certainly share this information. But we view the transitioning risk template as proprietary knowledge not to be shared.

1.23 STEP 8: COMMUNICATING BEST PRACTICES ACROSS THE COMPANY _____

Knowledge transfer is one of the greatest challenges facing corporations. The larger the corporation, the greater the challenge of knowledge transfer. The situation is further complicated when corporate locations are dispersed over several continents. Without a structured approach for knowledge transfer, corporations can repeat mistakes as well as miss valuable opportunities. Corporate collaboration methods must be developed.

There is no point in capturing best practices unless the workers know about them. The problem, as identified earlier, is how to communicate this information to the workers, especially in large, multinational companies. Some of the techniques include:

- Websites
- Best practices libraries
- Community of practice
- Newsletters
- E-mailings
- Internal seminars
- Transferring people
- Case studies
- Other techniques

Nortel Networks strives to ensure timely and consistent communications to all project managers worldwide to help drive continued success in the application of the global project management process. Examples of the various communication methods used by Nortel include:

- The *PM Newsflash* is published on a monthly basis to facilitate communications across the project management organization and related functions.
- Project management communications sessions are held regularly, with a strong focus on providing training, metrics reviews, process and template updates, and so on.

- Broadcast bulletins are utilized to communicate time-sensitive information.
- A centralized repository has been established for project managers to facilitate easy access to and sharing of project management-related information.

The comments by Nortel make it clear that best practices in project management now permeate all business units of a company, especially multinational companies.

One of the reasons for this is that we now view all activities in a company as a series of projects. Therefore, we are managing our business by projects. Given this fact, best practices in project management are now appearing throughout the company.

Publishing best practices in some form seems to be the preferred method of communication. At Indra, Enrique Sevilla Molina, PMP, stated:

They are published at corporate level and at the corresponding level inside the affected business unit. Regular courses and training is also provided for newly appointed project managers, and their use is periodically reviewed and verified by the internal audit teams. Moreover, the PM corporate tools automate the applications of best practices in projects, as PM best practices become requirements to the PM information systems.

According to a spokesperson from AT&T:

We have defined a best practice as any tool, template, or activity that has had a positive impact on the triple constraint and/or any of the *PMBOK® Guide* Process or Knowledge areas. We allow the individual project manager to determine if it is a best practice based on these criteria. We communicate this through a monthly project management newsletter and highlight a best practice of the month for our project management community.

Another strategic importance of best practices in project management can be seen from the comments by Suzanne Zale, formerly global program manager at EDS.

Driven by the world economy, there is a tendency toward an increasing number of large-scale global or international projects. Project managers who do not have global experience tend to treat these global projects as large national projects. However, they are completely different. A more robust project management framework will become more important for such projects. Planning up front with a global perspective becomes extremely important. As an example, establishing a team that has knowledge about geographic regions relevant to the project will be critical to the success of the projects. Project managers must also know how to operate in those geographic areas. It is also essential that all project team members are trained and understand the same overall project management methodology.

Globalization and technology will make sound project management practice even more important.

Zale's comments illustrate the importance of extracting best practices from global projects. This could very well be the future of best practices.

1.24 STEP 9: ENSURING USAGE OF THE BEST PRACTICES ---

Why go through the complex process of capturing best practices if people are not going to use them? When companies advertise to their clients that they have best practices, it is understood that tracking of the best practices and how they are used must be done. This is normally part of the responsibility of the PMO. The PMO may have the authority to regularly audit projects to ensure the usage of a best practice but may not have the authority to enforce the usage. The PMO may need to seek out assistance from the head of the PMO, the project sponsor, or various stakeholders for enforcement.

Maintaining a best practices library is an excellent way of determining workers' interest in the best practices. A company inserted counters into the best practices to see how often workers viewed each of the best practices. For those best practices that appeared most viewed, the PMO worked with the best practice owners to encourage them to update the best practices as often as possible or to help identify other best practices in the same categories.

When best practices are used as competitive weapons and advertised to potential customers as part of competitive bidding, the marketing and sales force must understand the best practices and explain this usage to the customers. Unlike 10–15 years ago, the marketing and sales force today has a good understanding of project management and the accompanying best practices.

1.25 COMMON BELIEFS ---

There are several common beliefs concerning best practices that companies have found to be valid. A partial list follows.

- Because best practices can be interrelated, the identification of one can lead to the discovery of another, especially in the same category or level of best practices. Best practices may be self-perpetuating.
- Because of the dependencies that can exist between best practices, it is often easier to identify categories of best practices rather than individual best practices.
- Best practices may not be transferable. What works well for one company may not work for another company.
- Even though some best practices seem simplistic and based on common sense in most companies, the constant reminder and use of these best practices lead to excellence and customer satisfaction.
- Best practices are not limited exclusively to companies in good financial health. Companies that are cash-rich can make a \$10 million mistake and write it off. But companies that are cash poor must be very careful in how they approve projects, monitor performance, and evaluate whether or not to cancel the project.

Care must be taken that the implementation of a best practice does not lead to detrimental results. One company decided that the organization had to recognize project

management as a profession in order to maximize performance and retain qualified people. A project management career path was created and integrated into the corporate reward system.

Unfortunately, the company made a severe mistake. Project managers were given significantly larger salary increases than line managers and workers. People became jealous of the project managers and applied for transfer into project management, thinking that the “grass was greener.” The company’s technical prowess diminished, and some people resigned when not given the opportunity to become project managers.

Sometimes the implementation of a best practice is done with the best of intentions, but the final result either does not meet management’s expectations or may even produce an undesirable effect. The undesirable effect may not be apparent for some time. As an example, consider the first best practice in Table 1–6. Several companies are now using traffic light reporting for their projects. One company streamlined its intranet project management methodology to include traffic light status reporting. Beside every work package in the WBS was a traffic light capable of turning red, yellow, or green. Status reporting was simplified and easy for management to follow. The time spent by executives in status review meetings was significantly reduced, and significant cost savings were realized.

Initially, this best practice appeared to be beneficial for the company. However, after a few months, it became apparent that the status of a work package, as seen by a traffic light, was not as accurate as the more expensive written reports. There was also some concern as to who would make the decision on the color of the traffic light. Eventually, the traffic light system was enlarged to include eight colors, and guidelines were established for the decision on the color of the lights. In this case, the company was fortunate enough to identify the disadvantage of the best practice and correct it. Not all disadvantages are easily identified, and those that are may not always be correctable.

There are other reasons why best practices can fail or provide unsatisfactory results. These include:

- Lack of stability, clarity, or understanding of the best practice
- Failure to use best practices correctly
- Identifying a best practice that lacks rigor
- Identifying a best practice based on erroneous judgment
- Failing to provide value

TABLE 1–6. IMPROPER APPLICATION OF BEST PRACTICES

Type of Best Practice	Expected Advantage	Potential Disadvantage
Use of traffic light reporting	Speed and simplicity	Poor accuracy of information
Use of a risk management template/form	Forward-looking and accurate	Inability to see all possible risks
Highly detailed WBS	Control, accuracy, and completeness	More control and cost of reporting
Using enterprise project management on	Standardization and consistency	Too expensive on certain projects all projects
Using specialized software	Better decision making	Too much reliance on tools

1.26 THE DARK SIDE OF PROJECT MANAGEMENT BEST PRACTICES ---

The project management community of practice worldwide applauds the use of discovering and implementing best practices as they evolve from new and better solutions to project management practices. But what is usually not discussed in detail are the challenges that must be overcome before discovery and implementation can be successful. Some of the challenges include:

Fear of change. Some people thrive on old habits and refuse to accept a best practice for fear of being removed from their comfort zone. They may also fear the impact that the implementation of the best practice may have on their performance review or advancement opportunities, especially if the new best practice reduces their power base.

Restricted usage. Some best practices may seem appropriate to use, but there are situations where industry best practices must be used instead.

Rushing into acceptance. Sometimes people rush into the acceptance of a best practice when spending a little bit more time into its investigation may lead to a better approach.

Politics and authority. Some best practices change the political landscape in the company and may change who has the authority to make certain decisions. While the intent of a best practice is to improve decision-making, some best practices require authorization from above for certain decisions to be made, whereas previously lower-level employees may have been allowed to make the decision.

Sharing best practices. Not all best practices are appropriate or applicable to multiple projects. Some consulting companies promote the use of their ready-made templates in practices where they may be inappropriate.

Training requirements. Some organizations implement best practices too quickly and raise the bar without considering transition time. Best practice implementation may require training in their use. Rushing into the use of a best practice may lead to unexpected results and demoralize the users.

Funding requirements. Some best practices may require funding for equipment or software before effective implementation.

1.27 BEST PRACTICES LIBRARY ---

With the premise that project management knowledge and best practices are intellectual properties (IPs), how does a company retain this information? The solution is usually the creation of a best practices library. Figure 1–15 shows the three levels of best practices that seem most appropriate for storage in a best practices library.

Figure 1–16 shows the process of creating a best practices library. The bottom level is the discovery and understanding of what is or is not a “potential” best practice. The sources of potential best practices can originate anywhere within the organization.

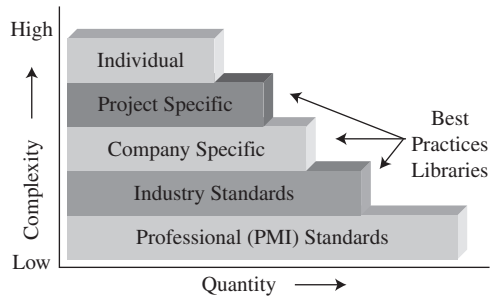


Figure 1-15. Library levels of best practices.

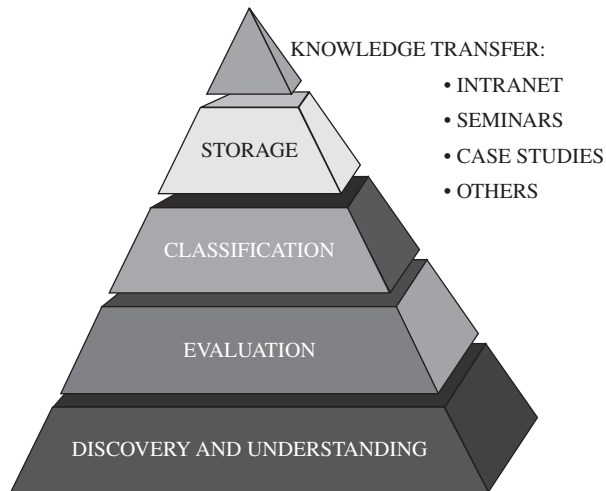


Figure 1-16. Creating a best practices library.

The next level is the evaluation level, which confirms that it is a best practice. The evaluation process can be done by the PMO or a committee, but should have involvement from the senior levels of management. The evaluation process is very difficult because a one-time positive occurrence may not reflect a best practice that will be repetitive. There must exist established criteria for the evaluation of a best practice.

Once a best practice is established, most companies provide a more detailed explanation of the best practice as well as a means for answering questions concerning its use. However, each company may have a different approach to disseminating this critical intellectual property. Most companies prefer to make maximum utilization out of their intranet websites. However, some companies simply consider their current forms and templates as part of their ongoing best practices library.

Figure 1-15 shows the levels of best practices, but the classification system for storage purposes can be significantly different. Figure 1-17 shows a typical classification system for a best practices library.

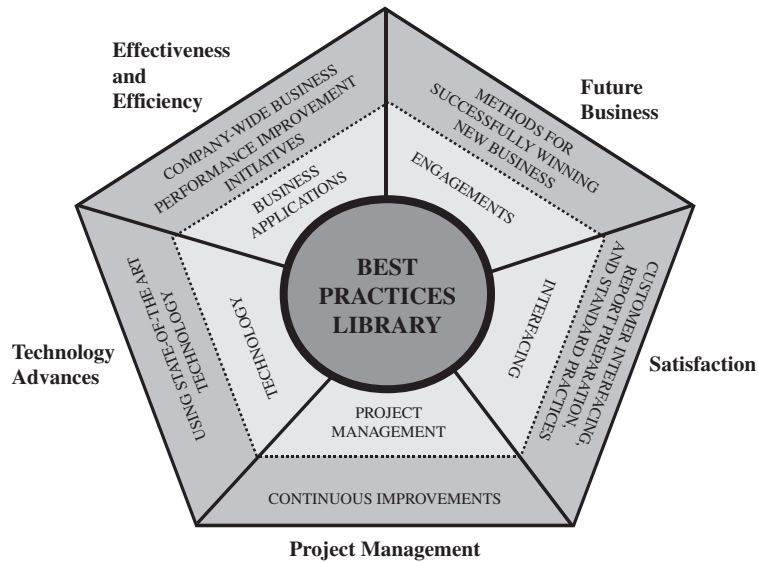


Figure 1–17. Best practices library.

The reason to create a best practices library is to transfer knowledge to the employees. The knowledge can be transferred through the company intranet, seminars on best practices, and case studies. Some companies require that the project team prepare case studies on lessons learned and best practices before the team is disbanded. These companies then use the case studies in company-sponsored seminars. Best practices and lessons learned must be communicated to the entire organization. The problem is determining how to do it effectively.

Another critical problem is best practices overload. One company started up a best practices library and, after a few years, had amassed what it considered to be hundreds of best practices. No one bothered to reevaluate whether all of these were still best practices. After reevaluation had taken place, it was determined that less than one-third were still regarded as best practices. Some were no longer best practices, others needed to be updated, and others had to be replaced with newer best practices.

1.28 DETERMINING THE VALUE OF A BEST PRACTICE

Determining the financial benefit of using a best practice can be difficult. Every industry, every company, and even functional departments within a company can have a wide range of best practices. As such, the value of a best practice is most often expressed qualitatively rather than quantitatively.

The traditional definition of a best practice is a method or technique that is superior to accomplishing the work by other means and therefore becomes the standard way

of doing things. In project management, most if not all of the best practices focus on continuous improvements to the processes, forms, guidelines, templates, and checklists used in the creation of a one-size-fits-all methodology. The methodology is often treated as the most important, or even the only, best practice in project management.

In the early years of project management, best practices focused on the components needed for the creation of the methodology, and the following were identified as best practices:

- Creation of a statement of work
- Development of a work breakdown structure
- Creation of a project plan
- Types and frequency of meetings
- Stakeholder communication practices
- Standardized reporting practices

The value obtained from continuous improvements to the processes included in the methodology is usually expressed qualitatively and includes:

- Greater efficiency and effectiveness
- Less time and cost to complete work packages
- Reduction in waste and streamlining of processes
- Improvements in quality

Project management best practices and their accompanying value were oriented around a rigid framework with the belief that process improvements would increase successes and reduce failures. Unfortunately, this was predicated up traditional project with well-defined requirements at project initiation.

As discussed previously, today we have a significant growth in project management applications for nontraditional activities, including strategic and innovation projects. The result is the identification of new types of best practices that focus on strategic deliverables and outcomes created rather than processes. Examples of the new best practices include:

- Growth in market share
- Penetration into new markets
- Ability to respond to innovation opportunities quicker
- Generation of more creative and innovative ideas
- Creation of innovations that enhance the organization's image and reputation
- Creation of products and services that clearly identify the organization's CSR efforts

Companies today maintain a self-regulated strategy called corporate social responsibility (CSR) that is integrated into the firm's business model and identifies the ethically oriented activities the firm will undertake for the benefit of consumers, society,

ecology, and government regulations. Environmentally friendly outcomes include the consumption of certain natural and renewable resources, such as water, energy, and other materials.

When companies can effectively integrate strategic planning, innovation, and project management practices together, the ideas generated and implemented create outstanding products, services, and a greater likelihood of supporting a CSR effort for the betterment of everyone. The results can be outstanding, as seen with Aramco in Section 1.28.

1.29 ARAMCO BOLSTERS INNOVATION THROUGH CUTTING-EDGE IDEAS²⁹ _____

“Where energy is opportunity” is the strapline of the largest energy company in the world—Saudi Aramco. It has always been assumed by many that innovation is uncommon among energy companies because the process undertaken within is just straightforward. In reality, it is the opposite.

As a global leader in providing energy, Saudi Aramco is required to lead by example and innovate. Whether it is to achieve its carbon-neutrality goal by 2050, as announced by the company’s President and CEO, Amin H. Al-Nasser, or to excel in the production of oil and gas, the company believes that the most important investment is in its people and the community. Saudi Aramco aims to innovate for a better life standard, a cleaner future, and a better world.

Saudi Aramco officially inaugurated innovation in 2001, where it started to focus on IPs and patents. As a firm believer in research, technology, and innovation, the company has built 12 global research centers spreading all the way from Texas, USA to Daejeon, South Korea. Each of which focuses on a different area of interest; for example, the Houston research center focuses on upstream oil and gas technologies. Other research centers like the ones in Scotland, Paris, and Russia focus on achieving the necessary breakthroughs in technology and innovation to efficiently produce reliable and sustainable energy resources. The patents recorded by Saudi Aramco globally have significantly increased in numbers over the past 10 years, mainly due to the significant impact of innovation on the company.

As innovation is key to the Company, Saudi Aramco has established many programs that serve innovation. The largest of which is its Corporate Innovation Portal, which is accessible to all employees and where SMEs lead the efforts, interact with employees, and provide technical insights. The portal has supervisory board to assess and measure innovation. A dedicated team of specialists was brought in to manage and protect IPs.

29. Material in this section, “Aramco Bolsters Innovation Through Cutting-Edge Ideas”, has been provided by Mohammed A. Al-Sadiq, Abdulaziz M. Anbari and Abdullah T. Aljamaan. ©2022 Saudi Arabian Oil Company. All rights Reserved. Reproduced with permission.

In terms of social responsibility, the Company launched Wa'ed Entrepreneurship Center in 2011, which focuses primarily on social welfare, digitalization, and sustainability in the kingdom. It is part of the company's effort to help innovative start-ups flourish in the Company and in the kingdom. The center was created to encourage young innovators in the country by providing them with the necessary guidance and support needed to succeed. It acts as a talent incubator for young talent and as a venture capital investment fund for promising Saudi start-ups, especially during the inception of portfolio.

Other than Wa'ed, Saudi Aramco recently invested heavily in creating LAB7. Considered as a modern research center, this will soon be the place for young, passionate innovators who will be supported and surrounded by SMEs. Adjacent to LAB7 is a green innovation park, which aims to reduce carbon emissions and produce renewable energy sources with the use of AI and machine learning. Commenting on LAB7's creation, Ahmad A. Al-Sa'adi, Senior Vice President of Saudi Aramco's Technical Services, said, "As we enter a new era of innovation, Aramco is seeking to promote prosperity, nurture potential, and encourage the adoption of the latest technologies both inside the company and across the Saudi landscape. LAB7 will help advance technology development, which will in turn provide benefits through increased operational efficiencies, improved productivity and sustainability enhancements."

Indeed, innovation is present at all company levels. Corporate-wide innovations are typically robust resulting in business change. As Saudi Aramco is the most reliable energy supplier in the world, it does not only focus on producing energy from oil and gas. Targeting its 2050 carbon-neutrality goal, the company has expanded its efforts in exploring solutions that can drive clean and sustainable energy, such as blue ammonia and hydrogen technologies. Ahmad O. Al-Khowaiter, Saudi Aramco's Chief Technology Officer, said, "The use of hydrogen is expected to grow in the global energy system, and this world's first demonstration represents an exciting opportunity for Aramco to showcase the potential of hydrocarbons as a reliable source of low carbon hydrogen and ammonia."

For Saudi Aramco, projects are major steppingstones to deploying innovative ideas. Through the execution of mega-scale projects with international partners, many innovative designs, tools, equipment, and ways of doing things are explored and adapted every day. Badr M. Burshaid, Program Manager of Saudi Aramco's Marjan and Zuluf Increment programs and President of the Project Management Institute—Kingdom of Saudi Arabia Chapter (PMI-KSA), opined, "Saudi Aramco is spreading innovative culture both internally and externally through its projects. In today's project management world, the old ways of executing projects are no longer applicable. New project management techniques involve digital solutions, robotics, virtual construction, and many other innovative approaches that preserve the environment, and enhance the safety of people and facilities while increasing efficiency and productivity. We are able to execute projects faster, cheaper, more environmentally friendly, and with zero harm to human life by supporting innovative approaches."

Not every innovative idea turns out to be a huge success. Some ideas fail, and others prove to be ineffective as planned. Whether the innovation turns out to be a huge success or a failure, it should not really matter, as both provide valuable lessons

for learning and for future innovation ideas. For Saudi Aramco, to encourage innovation and promote its culture, the company has put in place incentive programs for high performers in the innovation domain. As excellence and integrity are at the core of its corporate values, the company has provided the necessary attractive environments for its employees to grow, innovate, and excel.

