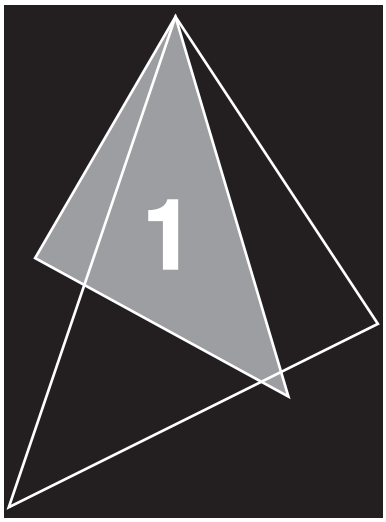

Understanding Best Practices

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 by projects.

Project management is now regarded as both a project management process and a business process. As such, project managers are expected to make business decisions as well as project decisions. The necessity for achieving project management excellence is now readily apparent to almost all businesses. Steven Deffley, Project Management Professional (PMP), Global Product Manager at Tyco Electronics, believes that:

> Achieving Project Management Excellence addresses how Project Management has evolved into a business process, providing concepts that can be employed to improve the effectiveness and financial contribution of an organization. Excellence is driven by a focus on critical success factors and key performance indicators as it relates to a project. Excellence in Project Management illustrates how the intellectual value of lessons learned can lead to a proprietary competitive advantage. Achieving Project Management Excellence demonstrates how Project Management has matured in encouraging and supporting an organization to perform at a higher level.

As the relative importance of project management permeates each facet of the business, knowledge is captured on best practices in project management. 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.

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 will be 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.

1.1 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, wearing the hat of a project manager, would perform the work necessitated by his or her line organization and, when completed, would throw the "ball" over the fence in hopes 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 first-hand information had to seek out the manager in possession of the ball. For small projects, this was easy. But as projects grew in size and complexity, this became more difficult.

During this time period, 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 Word War II, the United States entered into the Cold War. To win a Cold War, one must compete in the arms race and rapidly build weapons of mass destruction. The victor in a Cold War is the one who can retaliate with such force as to obliterate the enemy. Development of weapons of mass destruction was comprised of 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 of the 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.

Projects in the aerospace and defense industries were having cost overruns in excess of 200–300 percent. Blame was erroneously placed upon 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.

In the early years of project management, because many firms saw no practical value in project management, there were misconceptions concerning project management. Some of the misconceptions included:

- Project management is a scheduling tool such as 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 and 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?)

1.2 PROJECT MANAGEMENT BEST PRACTICES: 1960–1985

During this time period, with a better understanding of project management, the growth of project management 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 its successful implementation. 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 maintained an informal method for managing projects. In informal project management, just as the words imply, the projects were handled on an informal basis whereby 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 that 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 or more years. 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 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 have avoided the subject of project management for fear that "revolutionary" changes must 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 minimum 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.

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:

- Technology increasing at an astounding rate
- More money invested in research and development (R&D)
- More information available
- 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 in implementing project management, and other industries soon followed, some with great reluctance. NASA and the DoD "forced" subcontractors into accepting 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 in 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:

- Total project accountability assumed by a single person
- Project rather than functional dedication
- A requirement for coordination across functional interfaces
- 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 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 work flow
- 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 their relationships with both their prime contractors and the 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 (IPTs)
- Control of contractor-generated scope changes
- Use of earned-value measurement

1.3 PROJECT MANAGEMENT BEST PRACTICES: 1985–2010

By the 1990s, companies had begun to realize that implementing project management was a necessity, not a choice. By 2010, project management had spread to virtually every industry and best practices were being captured. In the author's opinion, the appearance of best practices from an industry perspective might be:

- 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

The question now was not how to implement project management, but how fast could 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

TABLE 1–1. FIVE PHASES OF 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 way of doing business	Become willing to release employees for project management training	Minimize creeping scope Select a project tracking system	

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.

There are six driving forces that lead executives to recognize the need for project management:

- Capital projects
- Customer expectations
- Competitiveness
- Executive understanding
- New project development
- 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.

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 simply cannot increase their market share.

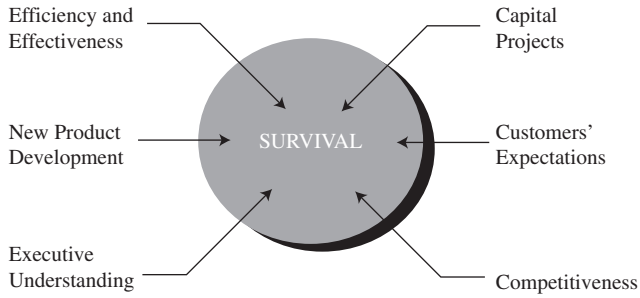

FIGURE 1–1. The components of survival. *Source:* Reprinted from H. Kerzner, *In Search of Excellence in Project Management,* New York: Wiley, 1998, p. 51.

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 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 into 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, 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 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.

Sandra Kumorowski, Marketing and Operations Consultant, discusses the driving forces at Enakta:

The company was a project-based company and it made sense to turn to project management as a tool for continuous improvement. The main issues that also drove the company to use project management were reoccurring time/cost/quality management issues, team productivity issues, and client satisfaction issues. The table shown below [Table 1–2] illustrates the necessity:

The speed by which companies reach some degree of maturity in project management is most often based upon 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.

TABLE 1–2. THE NECESSITY FOR PROJECT MANAGEMENT

Why?	Benefits
We are a project-based company	1. We know how to deliver projects 2. PM is a tool for successful delivery of actionable insights
To build credibility, grow, and compete: We should be perceived as a systematic and organized organization. We have to prevent mistakes	1. Earned reputation for systematic work 2. Focused business strategy 3. PM could be one of our competitive advantages
To control cost, time, resources: We should establish effective project control system	1. Decreased uncertainty 2. Increased product quality 3. Happy people 4. More effective planning (project & company level)
To learn as an organization & individuals:	1. PM concepts as part of our continuous education 2. Learning organization is always ahead of time and its competitors

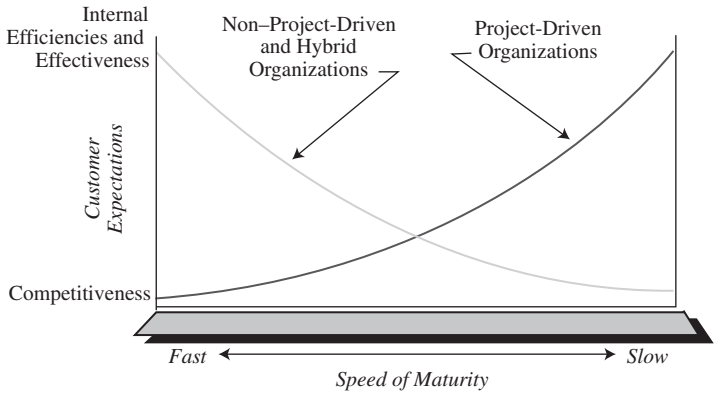

FIGURE 1–2. Speed of maturity.

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.

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 1–3 shows the benefits of project management and how our view of project

TABLE 1–3. CRITICAL FACTORS IN PROJECT MANAGEMENT LIFE CYCLE

Critical Success Factors	Critical Failure Factors
Executive Management Acceptance Phase	
Consider employee recommendations	Refuse to consider ideas of 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

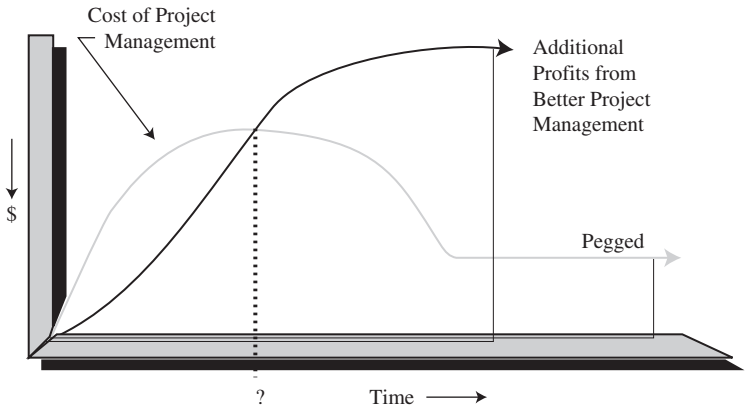

FIGURE 1–3. Project management costs versus benefits.

management has changed. Many of these benefits 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 from 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.

1.4 AN EXECUTIVE'S VIEW OF PROJECT MANAGEMENT

Today's executives have a much better understanding 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. It is now a necessity for survival.

Although there are several drivers for this, three significant reasons seem to stand out. First, as businesses downsize because of poor economic conditions or stiffening competition, the employees remaining in the company 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 is a series of

projects. Projects now make up a significant part of one's jobs. As such, all employees are actually project managers to some degree and are expected to make business as well as project decisions.

The new breed of executive seems to have a much broader view of the value of project management, ranging from the benefits of project management, to the selection criteria for project managers, to organizational structures that can make companies more effective. This is apparent from the four comments below, which were provided by Tom Lucas, 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 comments below from other executives clearly indicate their understanding and appreciation of project management:

> Managing projects successfully is the only way we can be effective for our customers. As our government contracts must stand up to high levels of scrutiny in tight budgetary times and limited resources, it is critical that SENTEL's project manager is empowered and accountable for reporting their status, in good times and bad. SENTEL continues to invest in the development of . . . sustainable and flexible project management methodologies that we support from . . . all parts of our company and we share best practices so that all groups can benefit from the successes of others. (Darrell Crapps, Chief Executive Officer [CEO], SENTEL)
>
> Our Customers, which are multinational industrial groups, expect from Comau Project Managers an international, multicultural and global approach. In the meantime our Shareholder is asking us for high projects governance obtained though a global Project Management effective framework. In 2006 we have adopted a world-class Project Management approach (i.e. PMI) which, together with the implementation of the best practices on the global Comau footprint, allowed us to demonstrate that both Customers and Shareholder goals can be fulfilled. I am sure that we are on the right tracks and that this continuous improvement strategy has to be pursued in the next years with motivation and perseverance. (Riccardo Tarantini, COMAU CEO, Fiat Group)
>
> Program and Project Management expertise is core to our success. It is with these professions as a core competency that we can execute in delivering value to our customers. Whether it is deploying internal IT projects, new product development, cost saving projects or integration services, these are more successful when they are staffed with experienced Program and Project Management personnel. We have invested over the years and we will continue to invest to ensure that we maintain this expertise throughout Rockwell Automation. (Keith Nosbusch, CEO, Rockwell Automation)

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, Senior Vice President, Enterprise on Demand Transformation and Information Technology, 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 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 PMI, but ultimately IBM certified. . . . End-to-end project management must become ingrained in the fabric of our business. (Rod Adkins, Senior Vice President of Development & Manufacturing, IBM's System and Technology Group [STG])

At leading IT software services providers, project management has evolved and matured from a complex process of identifying and meeting a customer's unique requirements to applying a core set of proven, second-generation best practices captured and packaged in standard offerings. The standard offerings deliver repeatable success and accelerated time to value for the customer. They also give the customer and the project manager the ability to take a phased approach to building the customer's comprehensive IT management vision. (Dave Yusuf, SVP Global PMO, Computer Associates Services)

Project Management is a core process at Johnson Controls. The Project Manager is ultimately responsible for the execution, profitability and the quality of our new product launches. We expect high performance from our Project Managers, and we are careful to select the best people to fill these roles. I believe that companies need a profound understanding of this critical discipline to be successful in the century to come. With a steady stream of high quality, profitable projects and products, we can be assured to maintain our competitive advantage. (Dr. Beda Bolzenius, Vice President and President, Automotive Experience, Johnson Controls Inc.)

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

- First, as we define and implement PLM (Product Lifecycle Management) solutions, we help customers to streamline their entire product lifecycle 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, President, Siemens PLM Software)

Project Management is vital to the success of any organization. Whether projects are focused on customer acquisition, loyalty and insight or driven by the need to increase enterprise efficiency, excellence in Project Management ensures that tangible, meaningful results are achieved on time and on budget. (Brad Jackson, CEO, Slalom Consulting)

Projects and Project Management play a vital role in our business of IT Services. While being a key enabler for delighting customers, Project Management also helps in setting the right expectations of stakeholders and more importantly, maintaining a balance between their expectations. Effective Project Management becomes a strong competitive advantage or differentiator for our delivery capabilities. Excelling in Project Management has allowed us not only to increase the quality of our services, reduce our time-to-market, decrease rework costs and increase staff motivation, but also to create a more integrated and agile organization. (A. S. Murthy, CEO, Satyam Computer Services Limited)

Solid project management is the glue that binds a successful implementation together. Each of our project managers is [a] knowledgeable technical experts, but more often than not, our customers need a soft skilled project manager to take control of an unorganized project and turn it around. The challenge is to get everyone motivated and moving in sync like an orchestra, by respecting the complicated and subtle aspects of human dynamics. Turning a project around is no easy feat, but given the correct methodology and executive support, it can be done. (Bruce Cerullo, CEO, Vitalize Consulting Solutions, Inc.)

I believe that operational excellence is achieved when we have the right people, processes, and technology deployed every day in the most efficient and effective way to achieve client satisfaction. One of my top priorities as COO is to establish a single, common culture across the organization—a culture based on excellence. By raising the maturity of our project management people, processes, and tools, and by increasing our focus on adoption of new practices, we have improved consistency in project delivery across Perot Systems and made significant progress toward producing predictable, repeatable, high-quality results for our clients. (Russell Freeman, Chief Operating Officer [COO], Perot Systems Corporation)

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, previously President, Global Operations, Nortel Networks)[1]

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1. H. Kerzner, *Best Practices in Project Management: Achieving Global Excellence*, Wiley, Hoboken, NJ, 2006, p. 17

The PMO process has been essential to the success of several major IS projects within Our Lady of Lourdes Regional Medical Center. This was especially true of our recent conversion from MedCath IS support to Franciscan Missionaries of our Lady Health System (FMOLHS) IS support at our newest physician joint venture: The Heart Hospital of Lafayette. PMO built trust through transparency, accountability and a framework for real-time project assessment. Without this structure I seriously doubt we could have succeeded in bringing the conversion on time and under budget. (W. F. "Bud" Barrow, President and CEO, Our Lady of Lourdes Regional Medical Center)

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, CEO, American Greetings)[2]

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, President and CEO, American Greetings)[3]

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 CEO, American Greetings)[4]

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 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 pre-defined 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)[5]

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)[6]

The disciplines of project management constitute an essential foundation for all initiatives toward business or indeed human advancement. I can't conceive crossing the vision/reality chasm without them. (Keith Thomas, Chairman, ITC [Information Technology & Communications] Business Unit, Neal & Massy Holdings, Ltd.)

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2. H. Kerzner, *Advanced Project Management: Best Practices on Implementation*, Wiley, Hoboken, NJ, 2004, p.273.
3. Ibid.
4. Ibid.
5. Ibid., p. 67.
6. Ibid., p. 184.

The comments by Keith Thomas 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. The following comments by John Walsh, President of Sypris Electronics, are indicative of executives that recognize the broad applications of project management, especially the integration of project management with other processes. Also from John Walsh's comments, you can see that today's executives are taking the lead role in spearheading these initiatives rather than delegating them to subordinates.

- Proper project management is the cornerstone to any successful company. Breaking the paradigm that project management is for customer initiatives is essential. Everything that we do at Sypris Electronics can be classified as a project, whether it is internally or externally focused. Furthermore, the success of our internal policy deployment of hoshin kanri hinges upon proper project management fundamentals.[7]
- Project management is essentially the training ground for presidents and CEO's for tomorrow due to the breadth and depth of experiences that are dealt with. Early on in my career I was fortunate enough to work with some of the best names in project management, including Dr. Harold Kerzner. This early mentoring not only helped from a tactical execution standpoint, but it also stressed the importance of proper project management and the benefits of the right implementation.
- In 1999 I was faced with the opportunity of turning around an automotive occupant safety components business. Challenged with having to implement Lean Manufacturing principles and Six Sigma as the methodology to transform operations, I fell back to my project management training and skills. The end result was co-chairing that year's Six Sigma conference as a key note speaker to describe how essential project management is in deploying Six Sigma and turning around operations.
- In these tough economic times, there is even more scrutiny on project success. So, with less tolerance for project failure it is imperative that the right people, practices, and infrastructure are in place to manage the project for value maximization.

1.5 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

7. *Hoshin kanri* can mean many things to an organization. It can be used as a method of strategic planning and a tool for managing complex projects, a quality operating system geared to ensuring that the organization faithfully translates the voice of the customer into new products, or a business operating system that ensures reliable profit growth. It is also a method for cross-functional management and for integrating the lean supply chain. But, most of all, it is an organizational learning method and competitive resource development system. For additional information, see T. L. Jackson, *Hoshin Kanri for the Lean Enterprise*, Productivity Press, New York, 2006.

- 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 (RFPs) by requesting:

- A listing of the number of PMPs in the company and how many will be assigned to this project
- A demonstration that the contractor has an enterprise project management methodology 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 for 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 disseminating information on best practices. There are nine best practices activities as shown in Figure 1–4, and most companies that recognize the value of capturing best practices accomplish all of these steps.

The processes answer the following nine questions:

- What is the definition of a best practice?
- Who is responsible for identifying the best practice and where do we look?
- How do we validate that something is a best practice?
- Are there levels or categories of best practices?

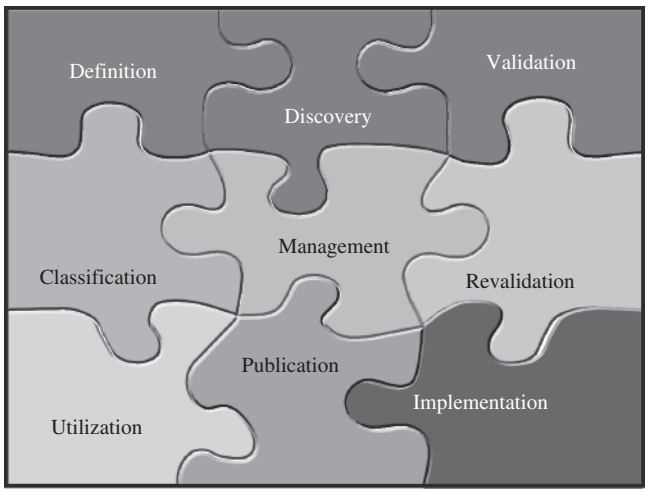

FIGURE 1–4. Best practices processes.

- Who is responsible for the administration of the best practice once approved?
- How often do we re-evaluate that something is still a best practice?
- How do companies use best practices once they are validated?
- How do large companies make sure that everyone knows about the existence of the best practices?
- How do we make sure that the employees are using the best practices and using them properly?

Each of these questions will be addressed in the next several sections.

1.6 STEP 1: DEFINITION OF A BEST PRACTICE

For more than a decade, companies have become fascinated with the expression "best practices." But now, after a decade 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 upon 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" rather than a best practice. 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. This 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 of accomplishing a task. This also may be a faulty interpretation.

Perhaps in the future the expression best practices will be replaced by proven practices. However, for the remainder of this text, we will refer to the expression as best practices, but the reader must understand that other terms may be more appropriate. This interpretation is necessary in this book 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 of a best practice. 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 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:

- Improve efficiency
- Improve effectiveness
- Standardization
- 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.[8]
- 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.[9]
- Any tool, template or activity used by a project manager that has had a positive impact on the *PMBOK® Guide* Knowledge and/or process areas and/or the triple constraint. An example of a best practice would be: Performing customer satisfaction

8. H. Kerzner, *Best Practices in Project Management: Achieving Global Excellence*, Wiley, Hoboken, NJ, 2006, p.12.
9. Ibid.., p.13.

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 of other more cumbersome methods, or significantly enhances an existing process. Each best practice is a living entity and subject to review, amendments, or removal.[10]
- 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 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, associated workflows and templates. These have been made available company-wide via CCN, the company's intranet site.[11]

- 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.[12]
- In the PMO, a best practice is a process, methodology or procedure that is followed in order to ensure a consistent approach and standard is utilized. Best practices within VCS are evaluated for efficiency (internally and externally)

10. Ibid.
11. Comments by Chuck Millhollan, Director of Program Management, Churchill Downs Inc.
12. Comments by Enrique Sevilla Molina, PMP, Corporate PMO Director, Indra.

and updated to reflect the lessons learned and the practical, real world experience from our project management consulting base working in the field with our customers.[13]

- Sandra Kumorowski believes that a best practice is . . . either a method, tactic, or process that has been proven through implementation and tested use to add specific and measurable benefits and long-term value in terms of increased project performance outcome like decreased project cost, increased employee productivity, improved client experience (rate of retention), and an increased number of new projects. Best practices add both short-term and long-term value to the organization.

I was responsible for providing Best Practices updates to all employees. Right after each Post Mortem session and after an idea was confirmed as a best practice, I would send an e-mail update to all employees. Typical best practices included:

- *Workload Distribution and Team Leadership:* Within a team will be equalized among the project lead (senior consultant) and junior consultant who would usually do the hard work of analysis without participating in the composition of the actual strategy. [Many times, junior people felt left out and did not feel they had contributed to the success of the project. They often felt inferior and that became a big issue that greatly decreased team productivity. The issue was part of the senior strategist job description (they were responsible for 80% of strategic thinking on a project) that could have been interpreted differently by different people.]
- *Project Kick-Off Meeting:* All project stakeholders must be in that meeting to discuss project scope and objectives. A specific scope statement format must be followed to clearly define objectives. During the meeting, all milestones dates must be determined and agreed on by all stakeholders.
- *Project Milestones Meetings:* Must be scheduled (some using GoToMeeting software) and included on all stakeholders' calendars right after the Kick-Off Meeting.
- *Project Post Mortem Meeting:* All team members must evaluate the project performance, fill in the Post Mortem questionnaire and discuss it with other team members. Post Mortem meetings must be scheduled no later than one week after the final client presentation to ensure the project issues and/or successes stay fresh in everyone's mind.[14]

Best practices can be implemented on either a formal or an informal basis. For example, Doug Bolzman, Consultant Architect, PMP®, ITIL Service Manager at EDS,

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13. Comments by Marc Hirshfield, PMP, Director, Project Management Office, Vitalize Consulting Solutions, Inc. Vitalize Consulting Solutions, Inc. (VCS) is a health care IT consulting company in the hospital and ambulatory (physician practice) marketspace. The PMO at VCS serves our project management consultants who work on behalf of our customer base in support of implementing their health care IT initiatives. Maybe best stated, we act and service in the role of a virtual PMO to our consultants and customer base.
14. Comments by Sandra Kumorowski, Marketing and Operations Consultant, Enakta.

discusses the approach at EDS for defining a best practice and how the final decision is made[15]:

> Within EDS, specific work activities are identified, promoted and leveraged as best practices. With thousands of clients, many innovative methods are discovered and utilized to support specific client needs. These innovations that can be leveraged are identified and promoted as part of an existing best practice or as a new best practice. By leveraging these efforts, all innovations can benefit all clients, thus improving the maturity of service provision by the organization.
>
> A best practice is a work package comprised of a process, tool (or templates), and people that when used together can enable a project team to produce a consistent and stable deliverable for a client with increased accuracy and efficiency. Best practices are project management–based work types that at the start of a project can be identified during the planning stage and leveraged by the project team.
>
> In order to manage each best practice consistently, each practice is documented following the best practice profile template. Some of the information contained within the profile includes the description of the practice, the type, the value to the company, and a list of practitioners to use the practice. Each practice documents all of the assets and asset status, and finally all of the practices document the business drivers that have been used to develop the practice.
>
> EDS established a Client Facing Best Practice Design Board (comprised of best practice owners) to define and oversee the framework used to manage best practices. EDS has registered and has received a patent for the process and tools used to manage its best practices.
>
> 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. To allow for continuous improvement, a new level of maturity is assigned to all of the sanctioned best practices for a yearly resanctioning. By continually moving the bar higher, it is necessary to prove the value of each best practice and demonstrate improvements from the previous version of the process, tools, and people designs.
>
> Being part of the integrated set of client facing best practices involves an assessment of a "candidate" best practice against a standard set of maturity criteria. Three levels of best practice maturity have been defined with minimum requirements for an "associate" best practice, "best practice," and "mastery" best practice. The requirements are centered on the following sections:
>
> - Value
> - Client
> - User community
> - Training
> - Assets

15. Doug Bolzman has been with EDS more than 20 years and is currently a member of the EDS Project Management Delivery-IT Enterprise Management/ITIL capability. EDS has been awarded a patent on behalf of Doug's processes titled, "System and Method for Identifying and Monitoring Best Practices of an Enterprise."

TABLE 1–4. BEST PRACTICES INCENTIVES

Private Sector	Public Sector
Profit	Minimization of cost
Competitiveness	On-time delivery
Efficiency	Efficiency
Effectiveness	Effectiveness
Customer satisfaction	Stakeholder satisfaction
Partnerships	Sole-source procurement

- Governance
- Release management
- Integration with internal structures
- Integration with external structures, if applicable

Everyone seems to have his or her own definition of a best practice. In the author's opinion, for simplicity sake, *best practices are those actions or activities undertaken by the company or individuals that lead to a sustained competitive advantage in project management while providing value for the company, the client, and the stakeholders.* What is important in this definition is the term "sustained competitive advantage." In other words, best practices are what differentiate you from your competitors.

Another important word in this definition is "value." There is no point in identifying a best practice unless people, specifically the users of the best practice, can see the value in using it. This is critical in getting acceptance in the use of a best practice.

This definition of a best practice discussed above focuses more on the private sector than on the public sector. A comparison of possible incentives for discovery and implementation of best practices in the public and private sectors is shown in Table 1–4.

1.7 STEP 2: SEEKING OUT BEST PRACTICES

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

- Project Management Institute (PMI) publications
- Forms, guidelines, templates, and checklists that can impact the execution of the project
- Forms, guidelines, templates, and checklists that can impact our definition of success on a project
- Each of the *PMBOK® Guide* areas of knowledge or domain areas
- Within companywide or isolated business units
- Seminars and symposiums on general project management concepts

- Seminars and symposiums specializing on project management best practices
- Relationships with other professional societies
- Graduate-level theses

With more universities offering masters- 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, the identification of the drivers or metrics that affect each best practice is more readily apparent 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 increase by a certain percentage
- Reduction in waste, paperwork, or time by a certain percentage

There are several advantages of this approach for searching for drivers. First, the drivers can change over time and new drivers can emerge rapidly. Second, the best practices process is more of a science than an art. And third, we can establish levels of best practices such as shown in Figure 1–5. 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.

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 of customer satisfaction. The company then reprioritized its values with customer satisfaction being the most important, and quality actually improved.

In this company, customer satisfaction emphasis 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 following list of best practices is taken from companies discussed in this textbook, and as you can see, some of the best practices were learned from failures rather than successes:

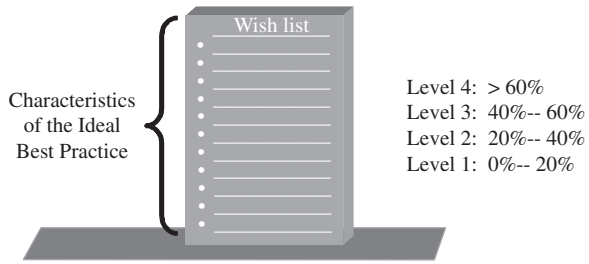


FIGURE 1–5. Best practices levels. Each level contains a percentage of the ideal characteristics.

- 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 are the results.
- Maximization of benefits occurs with a methodology based upon 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 stated previously, best practices need not be complex. Even though some best practices seem simplistic and common sense, the constant reminder and use of these best practices lead to excellence and customer satisfaction. As an example, Antares Management Solutions developed a small handout listing nine best practices. This handout was given to all employees, inserted into proposals during competitive bidding, and also shown to customers. The nine best practices in its brochure are:

- Making use of project management concepts and terminology throughout the enterprise, not just in information systems
- Providing ongoing project management training throughout the enterprise
- Structuring every major project in a consistent manner, including scope, responsibilities, risks, high-level milestones, and project planning
- Communicating and updating project plans on an ongoing basis using online tools when appropriate
- Maintaining an official project issue list, including who is responsible, what are the potential impacts, and how the issues are being resolved
- Using a formal change control process, including an executive steering committee to resolve major change issues
- Concluding every major project with an open presentation of results to share knowledge gained, demonstrate new technology, and gain official closure
- Periodically auditing and/or benchmarking the project management process and selected projects to determine how well the methodology is working and to identify opportunities for improvement
- Adapt to meet the business needs of the client

There is nothing proprietary or classified about these nine best practices. But at Antares Management Solutions, these best practices serve as constant reminders that project management is seen as a strategic competency and continuous improvement is expected.

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

Over the years, a lot 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 following chronological events that took place over the past several decades:

- *Success is measured by the triple constraint:* The triple constraint is time, cost, and performance (which include quality, scope, and technical performance). This was the basis for defining success during the birth of project management.
- *Customer satisfaction must be considered as well:* Managing a project within the triple constraint is always a good idea, but the customer must be satisfied with the end result. A contractor can complete a project within the triple constraint and still find that the customer is unhappy with the end result.
- *Other (or secondary) factors must be considered as well:* These include using the customer's name as a reference, corporate reputation and image, compliance with government regulations, strategic alignment, technical superiority, ethical conduct, and other such factors. The secondary factors may end up being more important than the primary factors of the triple constraint.
- *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 on a project-by-project basis. Sponsorship involvement in this decision is essential.
- *The definition of success must be agreed upon 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 even 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 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 are all focusing on different definitions of project success. There must be an upfront agreement on what constitutes project success. The ultimate customer or stakeholder should have some say in the definition of success, and ultimately there may be numerous best practices discovered that relate to customer/stakeholder interfacing.

TABLE 1–5. COMPARING PROJECT SUCCESS VERSUS FAILURE

MEASURE OF PM PROJECT SUCCESS

Successful =	**ORGANIZATIONAL LEVEL**
❑ More business from the client ❑ Clients contacting us ❑ Client satisfaction during/after the project ❑ Project team happy	● Ratio of successful to unsuccessful projects per year ● Increased number of successful projects per period (ROI) ● Everybody is on board accepting changes, no resistance ● Effective project portfolio management = balanced use of resources ● Increased client satisfaction Number of returning clients Number of recommended clients
Unsuccessful =	**PROJECT LEVEL**
❑ No more business from client ❑ We have to call clients ❑ Client dissatisfaction during/after the project ❑ Project team not happy	● Reduced project costs (working on more than one project at a time effectively, etc.) ● Well-distributed project time, no nights/weekends per project ● Reduced number of unexpected events/changes throughout the project ● Good team dynamics, met expectations ● Reduced number of negative issues per project

Today, we recognize that the customer rather than the contractor defines quality. The same holds true for project success. There must be customer and stakeholder acceptance 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 the project is not fully accepted by the customer or stakeholders.

At Enakta, the definition of project success is compared against the definition of project failure. According to Sandra Kumorowski, Marketing and Operations Consultant, the definition can appear as shown in Table 1–5.

Although companies may maintain a definition of project success (and even project failure), they may not have a clear definition of excellence in project management. This occurs when project management either is fully embedded into all of the company's work flow processes or is seen as a supportive role. Sandra Kumorowski believes:

> At Enakta, we do not have a formal definition of what is excellence in project management. However, our company wanted to view project management as a supportive role in creativity. Excellence is then achieved by complete customization to the current organizational structure and full alignment with long-term organizational goals, as shown in Figure 1–6.

Although some definitions of project success seem quite simple, many companies have elaborated on the primary definition of project success. Consider the comments below provided by Colin Spence, Project Manager/Partner at Convergent Computing (CCO):

> General guidelines for a successful project are as follows:
>
> - Meeting the technology and business goals of the client on time, on budget, and on scope
> - Setting the resource or team up for success, so that all participants have the best chance to succeed and have positive experiences in the process

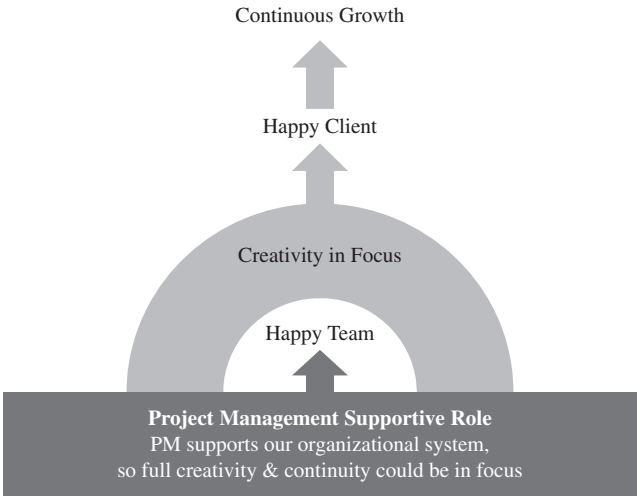


FIGURE 1–6. Project management as a supportive role.

- Exceeding the client's expectations in terms of abilities, teamwork, and professionalism and generating the highest level of customer satisfaction
- Winning additional business from the client and being able to use the client as a reference account and/or agree to a case study
- Creating or fine-tuning processes, documentation, and deliverables that can be shared with the organization and leveraged in other engagements

Another critical question today is, "Who is defining success on a project?" Colin Spence responded to this question by stating:

> Both the client stakeholders and CCO team members ultimately define whether a project is successful.
>
> Success criteria for the project are defined during the initial steps in the engagement by the client and the project team in designing the proposal/scope-of-work (SOW) document. The creation of the scope of work typically involves stakeholders from the client side, a technical consultant from CCO, and an account manager from CCO. Depending on the size and complexity of the project, this process can be completed in one meeting with the client or may involve a more complete discovery and design process. CCO consultants are trained to focus on the business concerns of the client as well as their technology goals and to ensure that the solution recommended meets the full set of requirements.
>
> Once the information has been gathered, the CCO team will create the SOW document that may involve assistance from additional resources (such as a technical writer or other expert on the technologies involved). The draft of the SOW is reviewed by the CCO team, delivered to the client, and then presented to the client. Often a project plan accompanies the SOW, but if not, one is created prior to the commencement of the work.

Once the project starts, regular checkpoint meetings are critical to ensure the project is successful on all fronts and for change management purposes. These meetings involve client stakeholders and members of the CCO team as appropriate. If a project manager is not assigned to the project full time, one will be allocated to attend in an advisory role. Team members are encouraged to raise flags at any time during the project.

Once the project is complete, a satisfaction review meeting is scheduled, where the results of the project are discussed and the client can freely report on what worked and what did not and make suggestions for perfecting the relationship. A project can be successful in that it met the goals set forth in the SOW but still be a failure if the client is not satisfied and chooses to not engage in other projects with CCO. Additionally the client may be satisfied with the results, but the CCO team may not be, so it is important to assess success from both the external point of view and the internal one.

At Churchill Downs Incorporated (CDI), success is defined differently. According to Chuck Millhollan, 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. Pre-defined 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, 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 will appear in a later chapter on project management methodologies.

Another element that is becoming important in the definition of success is the word *value*. Doug Bolzman, Consultant Architect, PMP®, ITIL Service Manager at EDS, believes:

> At one point, customers were measuring project success as being on time and under budget. But if the project provided no real business value, what good is it being on time or under budget? Value for projects are being transformed within the planning of the project to depict the value to the user or the client of the project.
>
> The users or the customers of the project define success. This can be difficult to identify at the start of the project (especially if not the norm). The executives can determine the overall value of how the projects map to the success of a program or initiative, but the users or customers will be the entity to receive the value of the project.

The comments by Doug Bolzman indicate that perhaps the single most important criterion for defining a potential best practice is that it must add value to the company and/or the client. Hewlett-Packard also sees the necessity for understanding the importance

of value. According to a program manager at Hewlett-Packard, the following three best practices are added-value best practices:

- Project Collaboration Portals with standardized PM templates and Integrated tool kits with ability to request additional features by a Support staff.
- Project Retrospectives—very helpful for group learning and eliciting/recognizing/documenting "best practices" but indeed communication beyond the immediate team is the challenge.
- Virtual Projects—given sufficient infrastructure I feel virtual projects are more productive and effective than burning up time and money on travel. I think HP utilizes these capabilities internally very well.

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 in 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, the secondary factors may be more important than the primary factors.

The definition of success can also change based upon whether you are 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 ongoing business of this firm. 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. Critical success factors 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 upon the triple constraint, 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

Critical success factors 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

Key performance indicators 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 which 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[16]:

> 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.

Shown below are additional definitions of CSFs and KPIs:

- CSFs:
  - Typically projects either improve something or reduce something. These improvements come in the form of capability or functionality of the company (through the employees/users). These produce additional productivity, new products and services, or more efficiency for existing products. Critical success factors are mapped to the overall business objectives. (Provided by Doug Bolzman, Consultant Architect, PMP®, ITIL Service Manager, EDS)
  - 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. (Provided by Enrique Sevilla Molina, PMP, Corporate PMO Director, Indra)

16. H. Kerzner, *Best Practices in Project Management: Achieving Global Excellence*, Wiley, Hoboken, NJ, 2006, p. 26.

- Obviously, CSFs vary with projects and intent. Below are some that apply over 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 to appropriate level of detail and objective and frequent tracking
  - Commitment of resources—right skill level at necessary time
  - Communication among internal teams and with customer
  - Early risk identification, management, and mitigation—no surprises
  - Unequaled technical execution based on rigorous Engineering. (Comments provided by a spokesperson at Motorola)[17]
- CCO has identified a number of CSFs involved in delivering outstanding technology services:
  - Have experienced and well-rounded technical resources. These resources need to not only have outstanding technical skills but also be good communicators, work well in challenging environments, and thrive in a team environment.
  - Make sure we understand the full range of the clients' needs, including both technical and business needs, and document a plan of action (the scope of work) for meeting these needs.
  - Have well-defined policies and processes for delivering technology services that leverage "best practice" project management concepts and practices.
  - Have carefully crafted teams, with well-defined roles and responsibilities for the team members, designed to suit the specific needs of the client.
  - Enhance collaborations and communications both internally (within the team and from the team to the CCO) and externally with our clients.
  - Leverage our experience and knowledge base as much as possible to enhance our efficiency and the quality of our deliverables. (Provided by Colin Spence, Project Manager/Partner, Convergent Computing)

- KPIs:
  - Key performance indicators allow the customer to make a series of measurements to ensure the performance is within the stated thresholds (success factors). This is called "keeping the pulse of the company" by the executives. KPIs are determined, measured, and communicated through mechanisms such as dashboards or metrics.(Provided by Doug Bolzman, Consultant Architect, PMP®, ITIL Service Manager, EDS)

17. Ibid., p. 27.

- Vitalize Consulting Solutions (VCS) holds our PMs accountable to a quarterly assignment quality assessment (AQA) score. This survey asks our customers to rate our PMs on a scale of 1–5 using a list of 15 questions regarding performance, customer satisfaction, and overall customer expectations. We measure performance based on our project manager's ability to meet these indicators and our commitment to providing high-quality project management resources. VCS also reviews the typical "on-time and on-budget" metrics through our project review process but avoids penalizing PMs for delays that are outside their control (for example, delays in software being delivered). (Marc Hirshfield, PMP, Director, Project Management Office)
- 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 monthly provided 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. (Provided by Enrique Sevilla Molina, PMP, 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)[18]
- 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

18. Ibid.

deliverables are and will provide information on costs and timelines that are easily tracked.

However, it is also critical that the SOW identify not only the goals of the project but also which are the most important to the client. For example, one client may not be overly concerned about the budget but must have the project meet certain deadlines. Part of the project manager's job is to understand which are the key criteria to meet and manage the project accordingly. If no project manager is assigned, this task is assigned to one of the other team members, typically the consultant.

So the project manager needs to periodically assess whether the project is under/over/on budget, ahead/behind/on schedule, and fulfilling the other goals of the project and to assess whether the client is satisfied with the work and deliverables. Additionally, the project manager needs to assess the internal functions of the team and make adjustments if needed. (Provided by Colin Spence, Project Manager/Partner, Convergent Computing)

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. Carl Manello, PMP, Solutions Lead—Program and Project Management, Slalom Consulting, believes that:

> Establishing the right Critical Success Factors and Key Performance Indicators is crucial. A project's defined success (i.e., defined success means that . . . all stakeholders are in agreement at the earliest stages of the project as to what the end-state will look like) is identified through the Critical Success Factors. A project's selection of the right Key Performance Indicators establishes the measurement metrics for tracking to determine whether the Critical Success Factors will be met. As a starting point, On Time, On Budget and with the agreed upon specifications (or within a tolerance for all three metrics) are good basic KPIs. As projects mature in their ability to deliver results, more sophisticated performance indicators may be implemented. For example, instead of using the loosely defined "agreed upon specifications," projects may choose to use the formality of a requirements volatility measure and some acceptable variation around a baseline.

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 practice. 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[19]:

> 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

19. Ibid., p. 14.

> 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 Project Management Office (PMO) for validation. After validation, the person that 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. As an example, consider the following statements from Sandra Kumorowski, Marketing and Operations Consultant, Enakta:

> After each project, we conduct Post Mortem meetings in order to evaluate the project performance. I have created a standard format—list of questions—and all team members had to prepare their answers ahead of time. If there was an idea, process, or tactic that has added measurable benefit or long-term value to the organization, the top management would then add it to our Library. I was responsible for an update to all employees when a new best practice has been added to our Best Practices Library.

1.8 DASHBOARDS AND SCORECARDS

In our attempt to go to paperless project management, emphasis is being given to visual displays such as dashboard 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 which 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 information technology (IT) group of a retailer had an eight-color dashboard for IT projects. An amber color meant that the targeted end date had past 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[20]:

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

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 1–6 and the description following it show how Eckerson compares the features of dashboards and scorecards.[21]

> *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.

TABLE 1–6. 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

20. W. W. Eckerson, *Performance Dashboards: Measuring, Monitoring and Managing Your Business*, Wiley, Hoboken, NJ, 2006, pp.293, 295. Chapter 12 provides an excellent approach to designing dashboard screens.
21. Ibid., p. 13.

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 project 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.

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 1–7 and the description that follows.[22]

- *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 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

TABLE 1–7. 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

22. Ibid., pp. 17–18.

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.

There are three critical steps that 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 in which the data will be updated. Some project dashboards focus on the key performance indicators 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 1–7 and 1–8 show the type of information that would be tracked weekly or quarterly to view corporate financial health.[23]

1.9 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 key performance indicators (KPIs) that were discussed previously. According to Eckerson[24]:

> 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.

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

KPIs are critical components of all earned-value measurement systems. Terms such as 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

23. J. Alexander, *Performance Dashboards and Analysis for Value Creation*, Wiley, Hoboken, NJ, 2007, pp. 87—88. Reproduced by permission of John Wiley & Sons.
24. W. Eckerson, *Performance Dashboards: Measuring, Monitoring and Managing Your Business*, Wiley, Hoboken, NJ, 2006, p. 294.

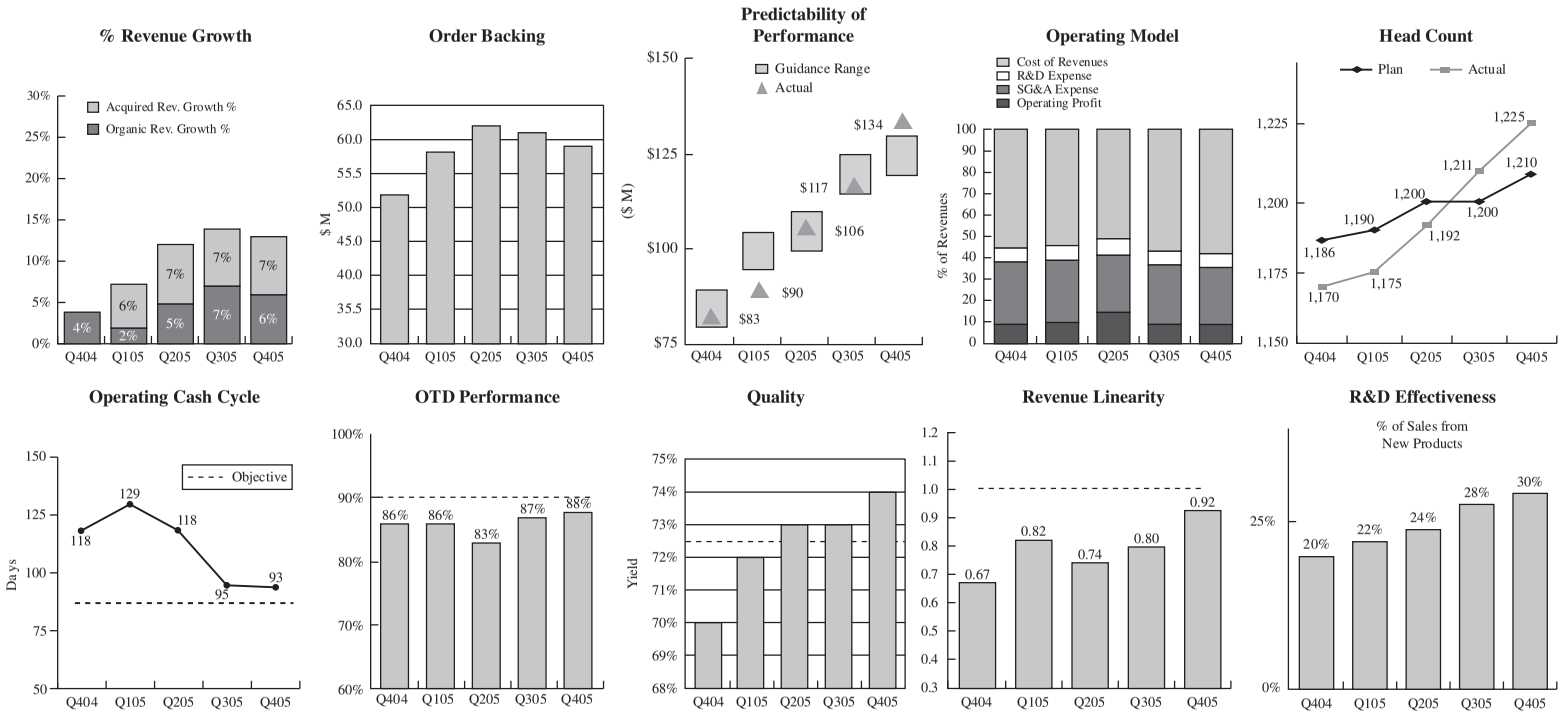
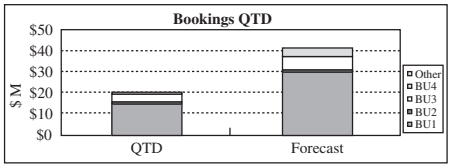


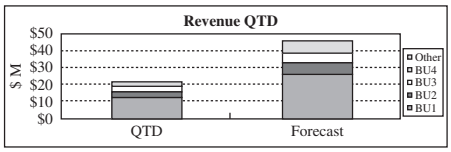
FIGURE 1–7. Typical financial health dashboards.

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

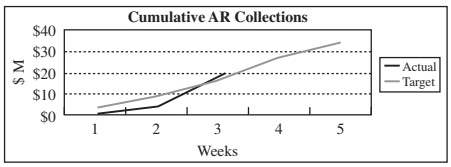
Bookings	Week	Unit	QTD	Forecast	% Achieved	$ Required
	0.7	BU 1	15.0	30.0	50%	15.0
	—	BU 2	0.9	1.0	89	0.1
	0.5	BU 3	4.0	6.0	67	2.0
	0.4	BU 4	1.7	4.7	37	2.9
	0.0	Other	0.1	—		(0.1)
	1.6	Totals	21.7	41.7	52%	$20.0



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%

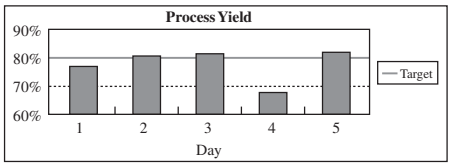


FIGURE 1–8. Typical financial health dashboards.

controllable factors. There is no point in measuring an activity if the users cannot change the outcome.

Eckerson identifies 12 characteristics of effective KPIs[25]:

- *Aligned.* KPIs are always aligned with corporate [or project] strategy and objectives.
- *Owned.* Every KPI is "owned" by an individual or group on the business [or project] side who is accountable for its outcome.
- *Predictive.* KPIs measure drivers of business [or project] value. Thus, they are "leading" indicators of performance desired by the organization.
- *Actionable.* KPIs are populated with timely, actionable data so users can intervene to improve performance before it is too late.
- *Few in number.* KPIs should focus users on a few high-value tasks, not scatter their attention and energy on too many things.
- *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.

25. Ibid., p. 201.

- *Balanced and linked.* KPIs should balance and reinforce each other, not undermine each other and suboptimize processes.
- *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].
- *Standardized.* KPIs are based upon standard definitions, rules, and calculations so they can be integrated across dashboards throughout the organization.
- *Context driven.* KPIs put performance in context by applying targets and thresholds to performance so users can gauge their progress over time.
- *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.
- *Relevant.* KPIs gradually lose their impact over time, so they must be periodically reviewed and refreshed.

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.
- 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. As such, the measurement metrics were the same on each project and the same for each life-cycle phase. Today, metrics can change from phase to phase and from project to project. The hard part is obviously deciding upon which metrics to use. Care must be taken that whatever metrics are established do not end up comparing apples and oranges. Fortunately, there are several good books in the marketplace that can assist in identifying proper or meaningful metrics.[26]

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.

26. Three books that provide examples of metric identification are P. F. Rad and G. Levin, *Metrics for Project Management,* Management Concepts, Vienna, VA, 2006; M. Schnapper and S. Rollins, *Value-Based Metric For Improving Results*, J. Ross Publishing, Ft. Lauderdale, FL, 2006; and D. W. Hubbard, *How To Measure Anything*; Wiley, Hoboken, NJ, 2007.

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[27]:

- 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.

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

Hubbard believes that five questions should be asked before we establish KPIs for measurement[28]:

- What is the decision this [KPI] is supposed to support?
- What really is the thing being measured [by the KPI]?
- Why does this thing [and the KPI] matter to the decision being asked?
- What do you know about it now?
- What is the value to measuring it further?

Hubbard also identifies four useful measurement assumptions that should be considered when selecting KPIs[29]:

- Your problem [in selecting a KPI] is not as unique as you think
- You have more data than you think
- You need less data than you think
- There is a useful measurement that is much simpler than you think

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 three types of performance measures[30]:

- *Key results indicators* (KRIs) tell you how you have done in a perspective
- *Performance indicators* (PIs) tell you what to do
- *KPIs* tell you what to do to increase performance drastically

Parmenter believes that[31]:

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27. D. W. Hubbard, *How To Measure Anything*, Wiley, Hoboken, NJ, 2007, p. 21.
28. Ibid, p. 43.
29. Ibid, p. 31.
30. D. Parmenter, *Key Performance Indicators*, Wiley, Hoboken, NJ, 2007, p. 1.
31. Ibid., p. 19.

> The ultimate success of a change strategy depends greatly on how the change is introduced and implemented, rather than on the merit of the strategy itself. Successful development and utilization of key performance indicators (KPIs) in the workplace is determined by the presence or absence of four foundation stones:
>
> - Partnership with the staff, unions, key suppliers, and key customers
> - Transfer of power to the front line
> - Integration of measurement, reporting, and improvement of performance
> - Linkage of performance measures to strategy

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 SMT's allowing some of those distracting fires to "burn themselves out."[32]

1.10 STEP 3: VALIDATING THE BEST PRACTICE

Previously we stated that seeking out of 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 upon the project manager for 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.

However, 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

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

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. According to Marc Hirshfield, PMP, Director, Project Management Office, Vitalize Consulting Solutions (VCS):

> In the PMO at VCS, we have a change management process that is used to evaluate updates to our methodology. The ultimate decision rests with the change management team. Updates are then made to the methodology and re-distributed to the original author and project management practice so everyone is aware of the updates. This way the original author of the request views their direct impact on improving the PMO methodology.

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 upon 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, 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 edition of the *PMBOK® Guide* emphasizes 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, Director of Program Management, Churchill Downs, Inc.:

> 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, 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 or not 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 that 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 client
- Can differentiate us from everyone else

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

- Helps to avoid failure
- If a crisis exists, helps us to get out of a critical situation

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

1.11 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 1–9.

Companies that maintain best practices libraries that contain a large number of best practices may create levels of best practices. Figure 1–10 shows various levels of 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.

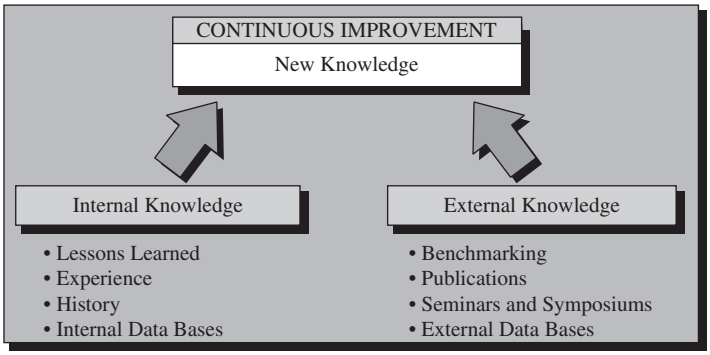

FIGURE 1–9. Knowledge transfer.

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 1–10, the complexity of the best practices goes from general to very specific applications and, as expected, the quantity of best practices is less. 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 upon their personal tolerance for risk, possibly through the use of a responsibility assignment matrix prepared by the project manager.

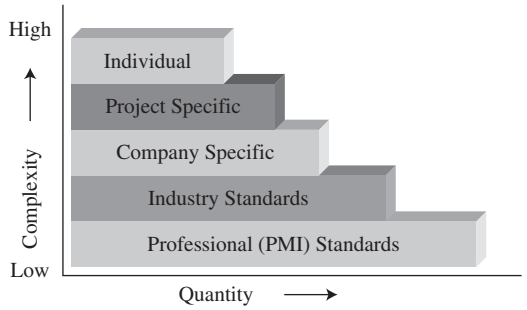

FIGURE 1–10. Levels of best practices.

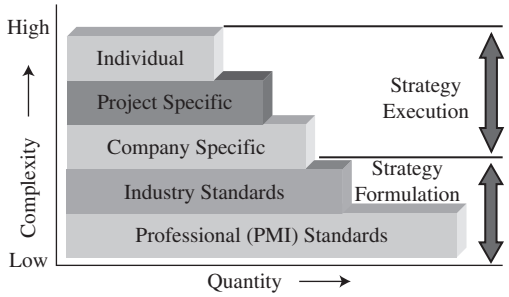

FIGURE 1–11. Usefulness of best practices.

Best practices can be extremely useful during strategic planning activities. As shown in Figure 1–11, 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, Corporate PMO Director at Indra, 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, Enrique 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.

1.12 STEP 5: MANAGEMENT OF BEST PRACTICES

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

- The best practice's owner
- The PMO
- The best practices' library administrator who may reside in the PMO

The best practice's owner, who usually resides in the functional area, has the responsibility of maintaining the integrity of the best practice. Being a best practice owner is usually a noncompensated, unofficial title but does appear as a symbol of prestige. 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 the best practice, who should be allowed to see it, how often it should be reviewed or revalidated, and when it 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 practices library. The library administrator may not have a good understanding of each of the best practices and may not have any voting rights on when to terminate a best practice.

1.13 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 upon 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.

- 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. (EDS)
- 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 (Computer Associates)

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

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

1.14 STEP 7: WHAT TO DO WITH A BEST PRACTICE

With 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 using the company intranet to share information to employees. There may be a separate group within the company responsible for control of 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 Selected 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 within may be company-sensitive financial data or the company's position on profitability and market share.
- *Advertise to Your 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 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.

1.15 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 with 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 missing valuable opportunities. Corporate collaboration methods must be developed. NXP has found a way to overcome several of these barriers. Mark Gray, MBA, PMP, Ph.D. candidate, Senior Project Manager at NXP Semiconductor, discusses this approach. Mark calls this: To grow oaks, you need to start with nuts. . . :

One of the biggest problems facing project managers and their organizations today is how best to get knowledge transferred from the experts (or at least experienced) project managers to the rest of the organization. Much has been written on lessons *ignored* and equally as much has been written on having lessons learned as a value-added component in the toolbox of project management. What seems to be missing is a sound approach for getting the knowledge transmitted (the identified, captured, stored parts are all pretty obvious).

At NXP we noted that there are many lessons that are captured during projects or during their review but very little evidence that these lessons were even being seen by other project managers. One solution we put in place was to use the model of a Community of Practice (CoP) as described by Wenger[33] in his work on the subject. Using the same basic idea as used by Shell in their off-shore drilling platforms, we established local forums of "experts" with the specific mandate to create an arena in which project managers would feel comfortable sharing their findings and learning's from their projects.

The process itself is very simple; Lessons are identified by the project managers either from project debriefs or from peer reviews and these are then presented to the forum as a type of "war story". It's important to note here that we look for both good and "less good" incidents to learn from. In general this leads to a good (sometimes spirited) debate on the topic from which the participants can take away a genuine learning experience. The results are of course somewhat qualitative in nature so to say we have clear measurable improvements as a direct result of these sessions would be difficult, however we have seen a general improvement in the overall performance of projects since we started this initiative.

Now for the hard part—building, and maintaining the CoP. Wenger gives some very good basics of how to construct CoP's, including the need to have a good core team, involvement of executive sponsors, clear outcomes, general house rules etc. He also talks about the need for a high level of energy input from the core team to create and maintain the momentum of the CoP. We have seen this in real life and add our own particular elements to the recipe:

- Start with a nut—You need to have at least one very extroverted and charismatic lead figure. We seek out people that are not just experts in the field but are almost fanatical in their dedication to developing and maturing project management.

33. E. Wenger, R. McDermott, and W. M. Snyder, *Cultivating Communities of Practice: A Guide to Managing Knowledge*, Harvard Business School Press, Cambridge, MA, 2002.

- Plant it in the right place—You need to ensure the CoP does not interfere too much with either normal work or personal time. We generally hold our sessions around the lunch hour with food provided.
- You need occasionally to prune the CoP branches to promote strong growth. Groups can develop in directions which do not really promote the central theme of the CoP, in which case it's a good idea to spin them off to avoid dilution.
- When the members leave, don't panic, this is just seasonal. People come and go as their jobs change, their project pressure changes, etc. They'll be back . . .
- The CoP needs to produce more nuts which can be planted in other sites and thus grow an interlinked community of communities. In NXP's case we created a solid core team over the last few years with active communities sharing and learning in 10 different sites around the world.

There is no point in capturing best practices unless the workers know about it. The problem, as identified above, 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.[34]

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

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34. H. Kerzner, *Best Practices in Project Management: Achieving Global Excellence* Wiley, Hoboken, NJ, 2006, p. 18.

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 communications. At Indra, Enrique Sevilla Molina, PMP, Corporate PMO Director, states:

> 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 below by Suzanne Zale, 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.

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

1.16 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.

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 years ago, the marketing and sales force today has a good understanding of project management and the accompanying best practices.

1.17 COMMON BELIEFS

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

- Because best practices can be interrelated, the identification of one best practice can lead to the discovery of another best practice, 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 for 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 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 are 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 must 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 a project manager.

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 1–8. Several companies are now using traffic light reporting for their projects. One company streamlined its intranet project

TABLE 1–8. 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 all projects	Standardization and consistency	Too expensive on certain projects
Using specialized software	Better decision making	Too much reliance on tools

management methodology to include "traffic light" status reporting. Beside every work package in the work breakdown 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 upon erroneous judgment
- Failing to provide value

1.18 BEST PRACTICES LIBRARY

With the premise that project management knowledge and best practices are intellectual properties, how does a company retain this information? The solution is usually the creation of a best practices library. Figure 1–12 shows the three levels of best practices that seem most appropriate for storage in a best practices library.

Figure 1–13 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 for potential best practices can originate anywhere within the organization.

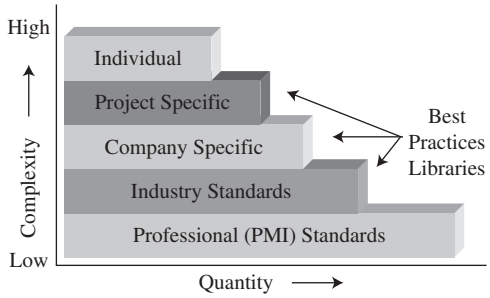

FIGURE 1–12. Levels of best practices.

The next level is the evaluation level to confirm that it is a best practice. The evaluation process can be done by the PMO or a committee but should have involvement by 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 providing a means for answering questions concerning its use. However, each company may have a different approach on how to disseminate this critical intellectual property. Most companies prefer to make maximum utilization out of the company's intranet websites. However, some companies simply consider their current forms and templates as the ongoing best practices library. Consider the following example:

> EDS has a website that lists all of the sanctioned best practices. There are currently 12 best practices listed in the library. The library provides a high-level graphic to depict the

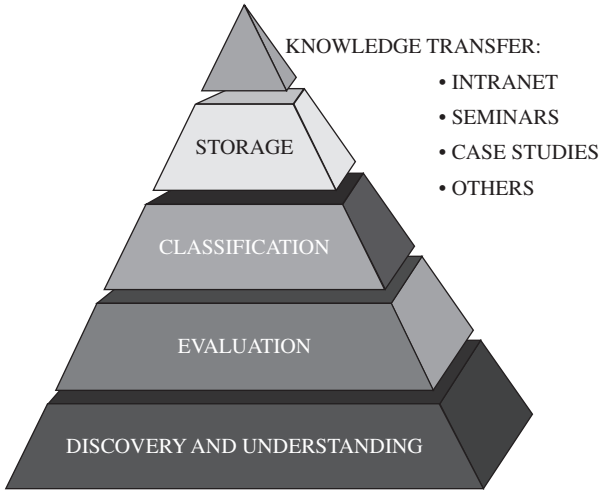

FIGURE 1–13. Creating a best practices library.

relationships of the best practices, a high-level profile of each best practice, and a link to each of the individual best practice websites. All of the best practices are included in a single glossary of terms.

The Client Facing Best Practice website identifies best practices by EDS roles, the situation, problem, or opportunity that one is facing, and from the perspectives of the client relationship life cycle. A best practices grid is provided to the employees with a profile of each best practice, an overview presentation to explain the purpose and uses of the best practice, a link to the training materials, and finally a link to the individual best practice web site. (Provided by Doug Bolzman, Consultant Architect, PMP®, ITIL Service Manager, EDS)

Figure 1–12 showed the levels of best practices, but the classification system for storage purposes can be significantly different. Figure 1–14 shows a typical classification system for a best practices library.

The purpose for creating 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. Nobody bothered to reevaluate whether or not all of these were still best practices. After reevaluation had taken place, it was determined that less

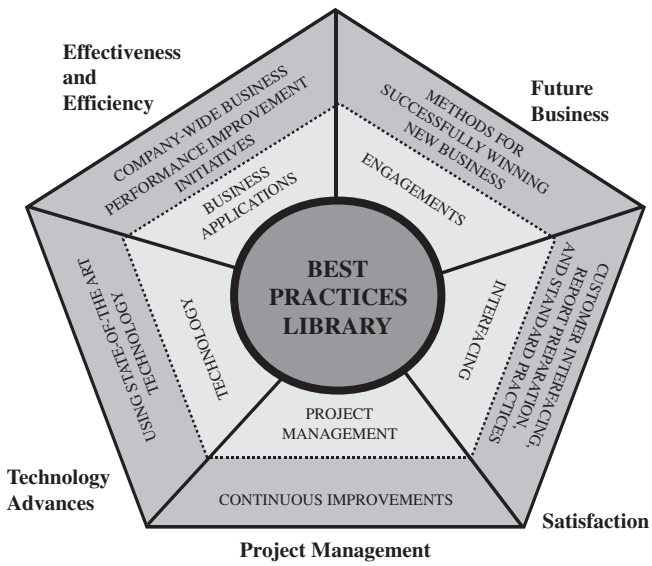

FIGURE 1–14. Best practices library.

than one-third of these 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.

1.19 DTE ENERGY[35]

In 2002, the Information Technology Services (ITS) Organization at DTE Energy initiated an effort to collect and document best practices for project management. Our intent was to publish, communicate, and ensure these best practices were adopted across the culture. We believed this approach would lead to continuous improvement opportunities resulting in higher quality, more timely, and less expensive software-based business solutions.

Rather than describe the ideal state of project management as we could envision it, we decided to describe the current state as it was being practiced by project managers in the organization. The goal was to establish a baseline set of standards that we knew project managers could meet because we were already doing them.

We formed a small team of our most experienced project managers and IT leaders. This team drew upon their recent project experiences to identify a set of best practices. While not every project manager uniformly followed them, the best practices represented the highest common denominator rather than the lowest. We knew that these were feasible since they represented practical experiences of our most successful project managers, and they also characterized the practices we wanted applied consistently across all projects. In this way, the bar was low enough to be achievable but high enough to be a meaningful improvement for most of the projects.

The team agreed to describe the best practices in terms of "what" rather than "how." We wanted to avoid the difficult and time-consuming task of defining detailed procedures with formal documentation. Rather, we described what project managers needed to do and the artifacts that project managers needed to produce. This provided the practicing project managers with some degree of flexibility in the methods (the "how") they employed to produce the results (the "what").

> We published the best practices in a hundred-page "Project Management Standards and Guidelines" manual (Table of Contents, Table 1–9) and also posted them on our Solution Delivery Process Center (SDPC) intranet website (Screen Shot, Figure 1–15). We included references to other resources such as standard forms, templates, and procedures that already existed.

35. Material on DTE Energy provided by Joseph C. Thomas, PMP, Senior Project Manager, and Steve Baker, PMP, CCP, Principal Analyst, Process and Skills Organization.

TABLE 1–9. DFCU FINANCIAL CORPORATE PROJECTS LIST REPORT HEADERS

Priority	1 = Board reported and/or top priority 2 = High priority 3 = Corporate priority, but can be delayed 4 = Business unit focused or completed as time permits
Project	Project name
Description	Brief entry, especially for new initiatives
Requirements document status	R = Required Y = Received N/A = Not needed
Status	Phase (discovery, development, implementation) and percentage completed for current phase
Business owner	Business unit manager who owns the project
Project manager	Person assigned to this role
Projected delivery time	Year/quarter targeted for delivery
Resources	Functional areas or specific staff involved
Project notes	Brief narrative on major upcoming milestones or issues

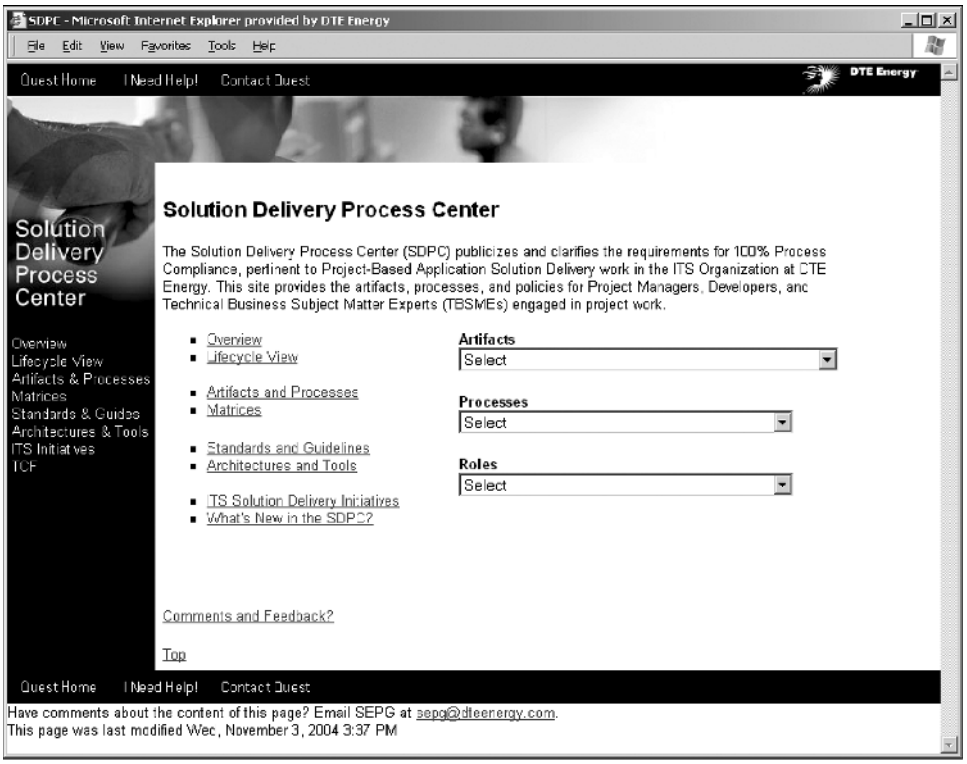

FIGURE 1–15. Solution delivery process center screen shot.

The SDPC is our process asset library containing scores of high-level role and process descriptions, easy-to-access templates and examples, and links to various resources from other departments across ITS. We designed our digital library to be usable for a variety of perspectives, including role-based ("I am a . . ."), milestone-based ("We are at . . ."), artifact-based ("I need a . . ."), and so on.

We launched the Standards and Guidelines materials and the SDPC library with a diverse communication strategy, targeting the right message to the right audience at the right time. We included a feedback process to ensure the evolution and applicability of the standards over time. This continuous improvement process includes (a) an inbound email account for receiving comments, suggestions, and ideas; (b) a review and update process including roles and milestones; and (c) timely updates to the SDPC and targeted printings of the Standards and Guidelines manual.

As a way to capture our lessons learned from each project, we adopted the After Action Review (AAR) process. Every project conducts an AAR upon completion, and we seek improvements to, and innovations beyond, our existing processes and templates. We institutionalize these improvements within our evolving Standards and Guidelines and the SDPC library. We solved our lessons learned dilemma (best practices were dutifully archived but rarely referenced) by incorporating each discovery within our Standards and Guidelines.

Standards and Guidelines, in and of themselves, are a means to an end. We found that simply publishing and communicating them is not enough to meaningfully impact our culture. To that end, we instituted a Quality Management Group (QMG) staffed with a small, diverse team of experts. The QMG both *enables* our projects with consulting services and education, and *ensures* our projects are in compliance with published Standards and Guidelines. With five inspection milestones, the QMG demonstrates our organizational commitment to best practices and continuous improvement.

1.20 A CONSULTANT'S VIEW OF PROJECT MANAGEMENT AND BEST PRACTICES

When companies begin their quest for excellence in project management, emphasis is usually placed upon external benchmarking. While benchmarking studies have merit, the information obtained may have limited or no real value for the company conducting the benchmarking even though they started out with the greatest of intentions. Perhaps the better choice is to hire consultants that can bring to the table expertise from a variety of companies, both large and small. The remainder of this section has been provided by Sandra Kumorowski, Marketing and Operations Consultant for Enakta.

Project Management in the Small Business Environment

Generally, in the small business environment, small business owners are more inclined to use project management practices—sometimes not intentionally and mostly through common sense—than anywhere else. I have seen quite sophisticated project estimating, budgeting, and scheduling practices in the small business environment as small business owners consider it the number one skill to master because their livelihood relies on that skill. Scope and objectives are

very well defined and expectations set at the beginning of the project. That can, however, vary by industry. Let me start with two examples from construction and health care.

Project Management in Construction

My husband has owned his painting (residential and commercial painting) business for over a decade now. Over so many years, there was not a single project on which he had lost money. His precise estimating skills, communication style, and managerial experience enable him to create quite seamless and timely project experiences. When he works with a general contractor, where the success of the construction project lies in the precise alignment of all subcontracting services, accurate project scheduling is critical. When he works with direct clients, precision and time are even more important as clients' lives can be directly impacted by the painting project.

The number one success factor in his business is a very intensive and continuous *training of his employees*. When he hires someone new, the employee goes through an intensive training. All employees are continuously updated and trained on new innovations and techniques in painting.

The number two success factor is *managed team autonomy*. Each team has a team leader who is fully responsible for the project performance and is required to update my husband everyday on project progress. My husband progressed to this managed team autonomy system from the previous system where he personally almost fully controlled each project (which took up too much of his time and was not necessarily more profitable) and found it very effective. The new system was met with very positive response from the employees who felt more empowered and actually started performing better, especially in terms of time. Now, they finish projects in shorter periods of time keeping up the same if not better quality standards.

My husband's natural project management skills are well-refined and he has never used any formal project management concepts or project management software. He has developed his own project management system that has been working well for him. However, there are many project management challenges in the construction industry. Therefore, I believe there is a great opportunity for these small business owners to be introduced to and educated about project management methodology from which they could benefit to a great extent. When surveyed, most of them considered it too time-consuming. But this opinion comes mainly from limited knowledge about project management and often limited computer skills.

Project Management in Health Care/Dental Category

Based on my 7-year experience in a periodontal specialty practice, I have to admit that the project and patient management practices were quite advanced. The practice was run by one doctor and his incredibly time-efficient and advanced surgical skills allowed for a large number of patients to be seen every day. In one day, the practice could see up to 60 patients divided between the doctor, the hygienist, and the postoperative assistant. That required quite sophisticated scheduling and time-monitoring practices. We used dental practice software Eagelsoft, which, although somewhat limited in reports capability, provided effective tracking and monitoring tools. On average, a patient would see us four to six times a year. To avoid cancellations and disruptions in the schedule, we attempted to schedule all appointments in advance for each patient and established a strict cancellation policy—something quite unusual in the dental category.

Each patient was like a miniproject and without the software and methodical scheduling, we would not be able to manage them successfully. The practice, thanks to its meticulous approach to operations management and scheduling in particular, has enjoyed continuous growth.

Project Management in Higher Education

Project work could be quite challenging for many college students. In higher education, most of the time, projects represent 50 percent of the final grade, but there is not enough attention paid to project management directions.

I did a survey in my class and, out of 44 students, only 2 were familiar with project management. About 70 percent of students perceived project work as a big challenge mainly because of the project management and team management issues.

So I have taken a proactive approach and dedicated about 10 percent of the total semester class time to project management practices and methods to make their project work more effective and successful.

Project Management in the Marketing and Advertising Category

Working in the marketing and advertising category for years now enabled me to study and analyze how project management was understood in the agency environment. Based on my experience, first of all, there is not enough awareness about project management practices and proven benefits. People do not believe in it and, most of the time, project management is perceived as a deterrent to creativity. But it is important to state that the way client accounts and projects are managed is quite consistent with a project management methodology. The problem, however, is that account planners do not reach out to the project management discipline to improve upon processes and make projects perform better. There is no formal relationship between project management and account management in marketing/advertising category.

When I introduced project management to my company of advertising executives as a way to improve our business, it took me some time to make them believe in it.

The story of how I did it follows.

Project Management Initiative for a Marketing Strategy Consultancy

About the Company My company was a small (22 employees) but high-profile successful marketing strategy consultancy. Founded in 2003 by an advertising executive, it focuses on delivery of research insights and related actionable strategy based on the analysis of online conversations. It caters to Fortune 500 companies and earned its reputation on coming up with the "big idea" in each project and helping the brands in building their long-term brand equity.

Need for a Project Management Initiative Due to the project-based nature of the company, I was approached by the top management to evaluate current project management practices and establish a more formal project management system. As the company grew, the need for a consistent system for our project planning and execution became very apparent.

Our projects ranged from two-week turnaround projects to eight-week research studies and there was a need to create a project portfolio management system to better control our future planning.

In addition, some more serious human issues began to surface. Most of the problems were in the initiation and planning phases where communication got lost mainly due to too many people being involved. Scopes were sometimes out of control and the team would find out at the end of the project that they were working on something different than what the client wanted. Main message (scope/objectives) would get lost.

Later in the project, the scoping mistakes would exponentially amplify into sometimes barely controllable situations where team members would have to stay late into the night and on weekends trying to bring the project to the satisfactory completion stage. The stress levels were sometimes very high.

Another issue that kept disturbing our projects was team dynamics. Each team consisted of two members—a senior strategist who was the project lead and a junior strategist. The role of the senior strategist on a project was defined as 80 percent strategy development and 20 percent data gathering and analysis. The junior strategist had to do 80 percent data gathering and was contributing only 20 percent to the strategy development. That led to some strong feelings of unfairness and some team members refused to work together. That needed to be changed.

There were seven main areas where the use of project management as an instrument for continuous improvement was apparent:

1. Client relationship management (CRM)
2. Team health/dynamics
3. Project quality/creativity
4. Project costing/budgeting
5. Project scope/timing
6. Project portfolio management
7. Company culture

The needed change can be seen in Figure 1–16.

Project Management Initiative Chronology

1. Need Recognition: Need for project management recognition based on scope creeps, unhappy team, lack of project control, and so on.
2. Initial Buy-In Meeting with Top Management: Establish immediate and relevant need
3. Interviews: Thorough interviews with each employee including top management (I created a questionnaire for each employee and then met with each of them individually to discuss it.)
4. Research and Analysis: Research of project management best practices, current processes analysis, interview analysis
5. Project Management Best Practices Research Period
6. Second Buy-In Meeting with Top Management: To reconfirm the need for project management, to review cost, timeline, and objectives of the project management initiative, to prioritize areas of focus for project management initiative
7. Project Management Initiative Goal Definition
8. Official Announcement: To all employees
9. Goal and Tactics Implementation: and testing
10. Monthly Progress Reports

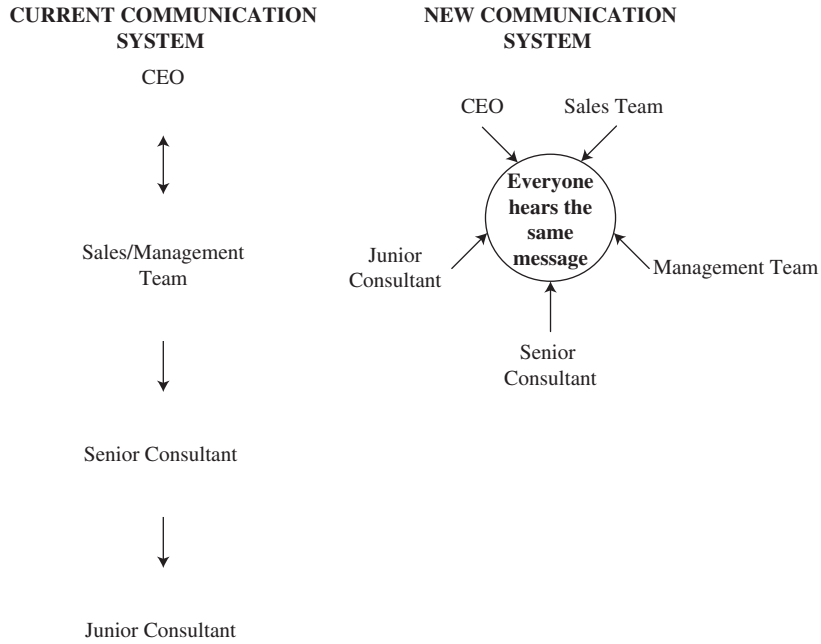

FIGURE 1–16. The before and after communication system.

Example of Project Management Initiative Initial Goals Since our company was new at project management, the changes took place in stages. Below (see Table 1–10) are some of the goals that were reached and actions taken as soon as the project management initiative was implemented.

Goal 1 CRM: To build long-term client relationship, increase word of mouth and reputation, increase sales

Action: List of all client meetings to be scheduled.

Goal 2 Team Health/Dynamics: To establish effective team collaboration and work load balance to achieve the best quality product

Action: 1. Schedule lecture on new project management processes, effective teamwork and leadership for the whole team FRIDAY. 2. Schedule meeting on leadership with project leaders.

Goal 3 Project Planning: Scope management/meeting effectiveness

Action: 1. Finalize and use internal kick-off meeting agenda template. 2. Finalize and use internal postmortem meeting agenda template.

Goal 4 PM Project Monitoring: To track projects and the success of the project management project

Action: 1. Develop ALL projects tracking format (white board). 2. Report on project management goals presented monthly.

TABLE 1–10. PROJECT MANAGEMENT INITIATIVE OVERVIEW

PROJECT MANAGEMENT INITIATIVE OVERVIEW

Priority Rank	Area	Action	Outcome/Benefit	Measure
1.	**Client Relationship Mgmt** REASON: RETURNING CLIENT/SALES	1. **Establish personal contact w/client** (add travel cost to contract), on longer, complex, opportunistic projects 2. **Improve planning phase** 3. **Scope/contract template** 4. **Post mortem template** 5. Establish meetings with standardized agendas & let everyone work on scope statement	• Long-term client relationships • Gaining credibility • More projects • Growing company Reputation	• Client survey • Client retention/return rate • Recommendation rate • Number of new/old client projects per month/year
2.	**Team Health/Dynamics** REASON: RELATIONSHIPS	1. **Assign 3 people in each project** (3rd for balance/control) 2. **40/60 workload distribution** (instead of 20/80 - Sr. Consultants/Jr. Consultants) 3. **New PM responsibilities** 4. Redefinition of current roles	• Better team collaboration • Less stress and issues • Jr. Consultants feel more valued • Sr. Consultants empowered with more responsibility	• Postmortem evaluation results (Jr. Consultant openly evaluates Sr. Consultant and vice versa?) • WESS (Weighted Employee Satisfaction Survey) ???
3.	**Creativity** REASON: LIMITED BY 2,4,5	1. **Standardize project planning** processes through project structure standardization 2. **Stick to well-defined roles** (everyone knows what to do)	• More time to create • Less time to worry	• Big idea in every project • Actionable insights in every project
4.	**Project Costing/Budgeting** REASON: CONTROL	1. Devise & implement best **customized project costing system (MS project)** 2. **Cost estimates at the beginning** of the project (MS project)	• Cost control throughout the project • Ability to price projects to avoid losses	• Earned value method • Cost variance (CV=EV-AC), *see Appendix* • CPI (Cost Performance Index)
5.	**Project Scope/Timing** REASON: CONTROL	1. Implement **customized project timing/planning system (MS project)** 2. Focus on **planning phase to avoid scope/time creep**	• Scope/time control throughout the project	• Earned value method • Schedule variance (SV=EV-PV), *see Appendix* • SPI (Schedule Perf. Index)
6.	**Project Portfolio Mgmt** REASON: BIG PICTURE, STRATEGY	1. Devise & **implement all projects tracking tool (MS project)** 2. **Analyze projects** based on cost, price, time, time-sensitivity, opportunity	• Effective project portfolio Management to make strategic business decisions • Decreased uncertainty & better future planning	• Profit margin • Effective planning & scheduling of future projects
7.	**Culture**	1. **Apply transparency** through open communication & active communication throughout each project	• Less fear & resentment • Innovation/creativity • Learning culture • Transparency	• Post-mortem evaluation results generalized & Learned from: best practices library