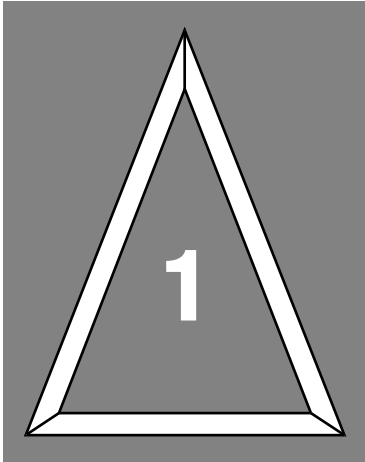




The Growth of Project Management

1.0 INTRODUCTION

You have attended seminars on project management. You have taken university courses on the fundamentals of project management. You have read the project management body of knowledge (PMBOK® Guide) prepared by the Project Management Institute (PMI), and you have even passed its national certification exam for project management. Now that you have learned the basics, how do you put theory into practice? That's advanced project management.

Basic project management teaches you the theory and principles of project management. Advanced project management discusses how to turn theory into practice. Simply stated, advanced project management deals with the implementation of project management. It is through implementation that excellence in project management is achieved.

1.1 UNDERSTANDING PROJECT MANAGEMENT

To understand project management, you must first recognize what a project is. A project is an endeavor that has a definable objective, consumes resources, and operates under time, cost, and quality constraints. In addition, projects are generally regarded as activities that may be unique to the company. Any company could manage repetitive activities based on historical standards. The challenge is managing activities that have never been attempted in the past and may never be repeated in the future. In today's world, projects seem to be getting larger and more complex. Some people contend that a project should also be defined as a multifunctional activity since the role of the project manager has become more

of an integrator than a technical expert. *Project management* can be defined as the planning, scheduling, and controlling of a series of integrated tasks such that the objectives of the project are achieved successfully and in the best interest of the project's stakeholders. The business world has come to recognize the importance of project management for the future as well as the present. According to Thomas A. Stewart¹:

Projects package and sell knowledge. It doesn't matter what the formal blueprint of an organization is—functional hierarchy, matrix, or the emerging process-centered [or horizontal] organization, whose lines of communication and power are drawn along end-to-end business processes. . . . Routine work doesn't need managers; if it cannot be automated, it can be self-managed by workers. It's the never-ending book of projects—for internal improvement or to serve customers—that creates new value. It draws information together and does something with it—that is, formalizes, captures, and leverages it to produce a higher-valued asset.

Consequently, if the old middle managers are dinosaurs, a new class of managerial mammals—project managers—is evolving to fill the niche they once ruled. Like his biological counterpart, the project manager is more agile and adaptable than the beast he is replacing, more likely to live by his wits than by throwing his weight around.

People who lead or work on winning projects will get the first crack at the next hot gig. The best project managers will seek out the best talent, and the best talent—offered a choice as it often will be—will sign on with the best managers. Seniority matters less than what-have-you-done-for-me-lately. . . .

Not every one can or should be a project manager, but those who can will be winners. When an organization ceases to be defined by its functional departments, and becomes a portfolio of projects and processes, it's much easier to claim credit for success—the results are obvious. Conversely, it's harder to blame “them” for failure because “they” are on your cross-functional project team.

Effective project management requires extensive planning and coordination. As a result, work flow and project coordination must be managed horizontally, not vertically as in traditional management. In vertical management, workers are organized along top-down chains of command. As a result, they have little opportunity to work with other functional areas. In horizontal management, work is organized across the various functional groups that work with each other. This results in improved coordination and communication among employees and managers.

Horizontal work flow generates productivity, efficiency, and effectiveness. Corporations that have mastered horizontal work flow are generally more profitable than those corporations that continue to use vertical work flow exclusively.

When project managers are required to organize their work horizontally as well as vertically, they learn to understand the operations of other functional units and how functional units interface. This knowledge results in the development of future general managers who understand more of the total operations of their company than do their counterparts who came up through a single vertical chain of command. Project management has become a training ground for future general managers who will be capable of making total business decisions.

1. From *Intellectual Capital* by Thomas A. Stewart. Copyright © 1997 by Thomas A. Stewart. Used by permission of Doubleday, a division of Random House, Inc.

No two companies manage projects in the same way. Project management implementation must be based on the culture of the organization. Some organizations have tried to accelerate learning to achieve excellence in project management by creating a center for excellence (COE) that constantly benchmarks against the best practices of those companies recognized worldwide.

The world is finally recognizing the importance of project management and its impact on the profitability of the corporation. The changes necessary for successful project management implementation are now well documented in the literature. Linda D. Anthony, manager, project management, at General Motors, provides us with her personal views of how organizations are now perceiving project management:

Companies that have embraced a mature project management operating philosophy and practice are more likely to succeed in the competitive race of first to market than those that have not. The discipline of project management forces the attention to detail that is required for successful execution of projects. No longer can we simply manage the business by arts and charts and intuitive experience. It is imperative that we clearly understand the mission, scope, objective, and deliverable of every project at the onset.

Organizations must realize that “management” experience alone does not fully equip a leader to be proficient in project management. Project managers must be trained and experienced in the fundamental principles of project management. Having completed one or two academic classes in college 15 years ago does not qualify a manager as trained and experienced.

There are a wealth of project management education and training certification programs that are available to meet the growing demand for this knowledge and expertise. Companies that are serious about winning the race will incorporate this training as part of the development plans for current and future project managers.

It is equally important that organizations establish an office of project management. The function of the “office” is to focus on the development of the company’s project management current and future vision, deployment of project management principles, and to ensure common and consistent project management execution throughout the enterprise. This activity cannot be effectively administered by generalists or on a catch-as-catch-can basis. Success in this area of the business requires commitment and dedication to remaining current and up-to-date on methodology and technology.

In today’s complex and competitive business world, we must recondition our perceptions about the value of project management. Excellence in project management can only be achieved when organizations place a high priority on project management and make more prudent project management investment decisions.

According to Linda Kretz, senior consultant with the International Institute for Learning, project management as a professional discipline is undergoing significant change. Many companies use the term *project management* to include a number of different functions, some of which might be better described as expediting techniques or command/control management. Real project management differs from these techniques in timing of assignments and authority of the project manager.

Today, most of the managers described as *project managers* (sometimes called PMs for short) are assigned after project planning is complete. Charged with overseeing the implementation or execution of the project, they have no input into the budgeting process and

are merely informed about the contractual constraints on the project. They are assigned to the project but are not informed of market analyses or revenue projections for the project. They have no idea how—or even whether—the planned project fits in with the corporation's overall strategic goals. Such concerns, if they are addressed at all, are usually handled by executive managers and held confidential. Ironically, many project managers working today are held accountable for the results of their projects without being privy to critical information. Two questions seem obvious: How accountable can project managers be for fulfilling someone else's plan? And with virtually no control over the project budget, how can they be held responsible for keeping the project on budget and on schedule?

In the future, project managers will be recognized for the value they contribute to the corporation's bottom line. Shooting the messenger will no longer be necessary because the message will fulfill everyone's expectations. No longer will project managers be informed of the company's financial margin at the end of the fiscal year along with all the other nonexecutive employees of the company. They will be given the authority to address potential problems by proactively managing their projects rather than reacting to ongoing risk factors.

Future project managers will be empowered to act as catalysts for corporate change and quality improvement. They will play central roles in meeting the company's financial goals. Their ability to evaluate the financial justification for projects will be recognized throughout their organizations, and they will be empowered to contribute to feasibility studies and project budgets.

1.2 RESISTANCE TO CHANGE

Why was project management so difficult for companies to accept and implement? The answer lies in Figure 1–1. Historically, project management resided only in the project-driven sectors of the marketplace. In these sectors, the project managers were given the responsibility for profit and loss. This profit and loss (P&L) responsibility virtually forced companies to treat project management as a profession.

In the non-project-driven sectors of the marketplace, corporate survival was based upon products and services, rather than upon a continuous stream of projects. Profitability was identified through marketing and sales, with very few projects having an identifiable P&L. As a result, project management in these firms was never viewed as a profession.

In reality, most firms that believed that they were non-project-driven were actually hybrids. Hybrid organizations are typically non-project-driven firms with one or two divisions that are project-driven. Historically, hybrids have functioned as though they were non-project-driven, as shown in Figure 1–1, but today they are functioning like project-driven firms. Why the change? Management has come to the realization that they could effectively run their organization on a “management by project” basis and achieve the benefits of both a project management organization and a traditional organization. The rapid growth and acceptance of project management during the past ten years has taken place in the non-project-driven/hybrid sectors. Now, project management is being promoted by marketing, engineering, and production, rather than just by the project-driven departments (see Figure 1–2).

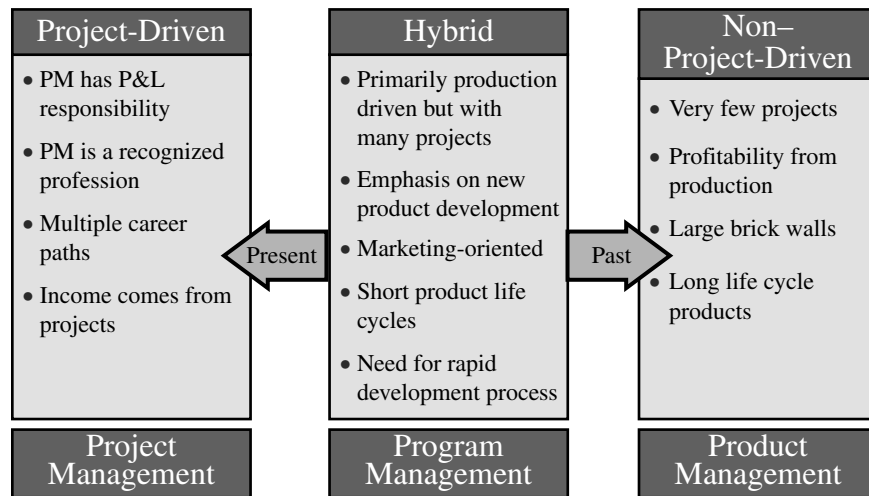


FIGURE 1-1. Industry classification (by project management utilization).

A second factor contributing to the acceptance of project management was the economy, specifically the recessions of 1979–1983 and 1989–1993. This can be seen from Table 1–1. By the end of the recession of 1979–1983, companies recognized the benefits of using project management but were reluctant to see it implemented. Companies returned to the “status quo” of traditional management. There were no allies or alternative management techniques that were promoting the use of project management.

The recession of 1989–1993 finally saw the growth of project management in the non-project-driven sector. This recession was characterized by layoffs in the white

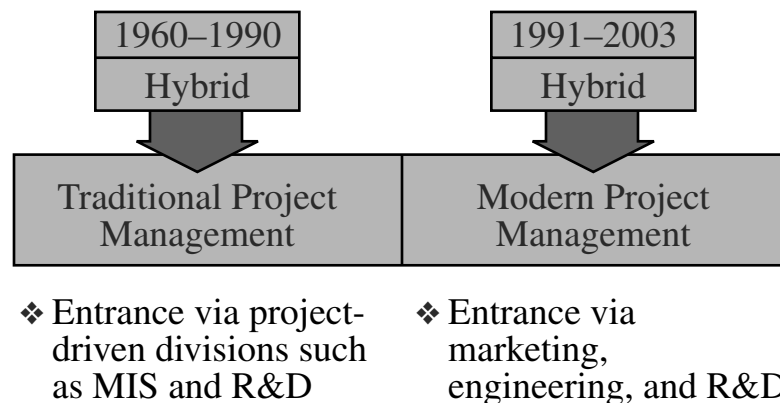


FIGURE 1-2. From hybrid to project-driven.

TABLE 1–1. RECESSIONARY EFFECTS

Recession	Characteristics				Results of the Recessions
	Layoffs	R&D	Training	Solutions Sought	
1979–1983	Blue collar	Eliminated	Eliminated	Short-term	• Return to status quo • No project management support • No allies for project management
1989–1993	White collar	Focused	Focused	Long-term	• Changed way of doing business • Risk management • Examine lessons learned

collar/management ranks. Allies for project management were appearing and emphasis was being placed upon long-term solutions to problems. Project management was now here to stay.

The allies for project management began surfacing in 1985 and continued throughout the recession of 1989–1993. This is shown in Figure 1–3.

- *1985:* Companies recognize that competition must be on quality as well as cost. There exists a new appreciation for total quality management (TQM). Companies begin using the principles of project management for the implementation of TQM. The first ally for project management surfaces with the “marriage” of project management and TQM.
- *1990:* During the recession of 1989–1993, companies recognize the importance of schedule compression and being the first to market. Advocates of concurrent engineering begin promoting the use of project management to obtain better scheduling techniques. Another ally for project management is born.
- *1991–1992:* Executives realize that project management works best if decision-making and authority are decentralized. Executives recognize that control can still be achieved at the top by functioning as project sponsors.
- *1993:* As the recession of 1989–1993 comes to an end, companies begin “reengineering” the organization, which really amounts to elimination of organizational “fat.” The organization is now a “lean and mean” machine. People are asked to do more work in less time and with fewer people; executives recognize that being able to do this is a benefit of project management.
- *1994:* Companies recognize that a good project cost control system (i.e., horizontal accounting) allows for improved estimating and a firmer grasp of the real cost of doing work and developing products.
- *1995:* Companies recognize that very few projects are completed within the framework of the original objectives without scope changes. Methodologies are created for effective change management.

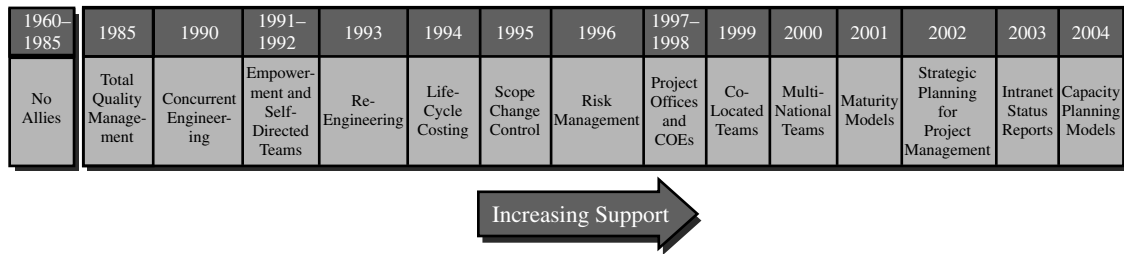


FIGURE 1–3. New processes supporting project management.

- **1996:** Companies recognize that risk management is more than padding an estimate or a schedule. Risk management plans are now included in the project plans.
- **1997–1998:** The recognition of project management as a professional career path mandates the consolidation of project management knowledge and a centrally located project management group. Benchmarking for best practices forces the creation of COEs in project management.
- **1999:** Companies that recognize the importance of concurrent engineering and rapid product development find that it is best to have dedicated resources for the duration of the project. The cost of overmanagement may be negligible compared to risks of undermanagement. More and more organizations can be expected to use co-located teams all housed together.
- **2000:** Mergers and acquisitions are creating more multinational companies. Multinational project management will become the major challenge for the next decade.
- **2001:** Corporations are under pressure to achieve maturity as quickly as possible. Project management maturity models help companies reach this goal.
- **2002:** The maturity models for project management provide corporations with a basis to perform strategic planning for project management. Project management is now viewed as a strategic competency for the corporation.
- **2003:** Intranet status reporting comes of age. This is particularly important for multinational corporations that must exchange information quickly.
- **2004:** Intranet reporting provides corporations with information on how resources are being committed and utilized. Corporations develop capacity planning models to learn how much additional work the organization can take on.

As project management continues to grow and mature, more allies will appear. In the twenty-first century, second and third world nations will come to recognize the benefits and importance of project management. Worldwide standards for project management will occur.

The reason for the early resistance to project management was that the necessity for project management was customer-driven rather than internally driven, despite the existence of allies. Project management was being implemented, at least partially, simply to

placate customer demands. But by 1995, project management had become internally driven and a necessity for survival. Project management benchmarking was commonplace, and companies recognized the importance of achieving excellence in project management.

If a company wishes to achieve excellence in project management, then the company must go through a successful implementation process. The speed by which implementation occurs will dictate how quickly the full benefits of project management will be realized. This can be illustrated with Situation 1–1.

Situation 1–1: The aerospace division of a Fortune 500 company had been using project management for over 30 years. Everyone in the organization had attended courses in the principles of project management. From 1985 to 1994, the division went through a yearly ritual of benchmarking themselves against other aerospace and defense organizations. At the end of the benchmarking period, they would hug and kiss one another believing that they were performing project management as well as could be expected.

In 1995, the picture changed. The company decided to benchmark themselves against organizations that were not in the aerospace or defense sector. They soon learned that there were companies that had been using project management for less than five or six years but whose skills at implementation had surpassed the aerospace/defense firms who had been using project management for more than 30 years. It was a rude awakening to see how quickly several non-profit-driven firms had advanced in project management.

Another factor that contributed to a resistance to change was senior management's preference for the status quo. More often than not, this preference was based upon what is in the executives' best interest rather than the best interest of the organization as a whole. This led to frustration for those in the lower and middle levels of management who supported the implementation of project management for the betterment of the firm.

It was also not uncommon for someone to attend basic project management programs and then discover that his or her organization would not allow full project management to be implemented. To illustrate this problem, consider Situation 1–2.

Situation 1–2: The largest division of a Fortune 500 company recognized the need for project management. Over a three-year period, 200 people were trained in the basics of project management, and 18 people passed the national certification exam for project management. The company created a project management division and developed a methodology for project management. As project management began to evolve in this division, the project managers quickly realized that the organization would not allow their "illusions of grandeur" to materialize. The executive vice president made it clear that the functional areas rather than the project management division, would have budgetary control. Project managers would *not* be empowered with authority or critical decision-making opportunities. Simply stated, the project managers were being treated as expeditors and coordinators, rather than real project managers. There were roadblocks that had to be overcome before theory

could be turned into practice. How to overcome these obstacles had not been discussed in the basic courses on project management.

Even though project management has been in existence for more than 40 years, there are still different views and misconceptions about what project management really is. Textbooks on operations research or management science still have chapters entitled “Project Management” that discuss only PERT scheduling techniques. A textbook on organizational design recognized project management as simply another organizational form. Even among educators, differing views are still prevalent.

All companies sooner or later understand the basics of project management. But those companies that have achieved excellence in project management have done so through successful implementation and execution of processes and methodologies. Because of this relationship, throughout this text, reference is made to those companies who have achieved some degree of excellence in project management through their understanding of the advanced concepts of project management.

When a company’s stock is depressed, or even if a company is in bankruptcy, it by no means indicates poor project management. In fact, project management may actually improve. During favorable economic conditions, a company might be able to tolerate a \$50 million loss on a project. But during unfavorable economic times, companies are more selective of the projects they work on, risk management techniques are greatly improved, cost monitoring and earned value measurement techniques are implemented, estimating techniques are improved, and productivity will probably increase. Although this may not occur in all companies, there are indications that many of these changes for the better do occur.

1.3 STRATEGIC IMPERATIVES FOR PROJECT MANAGEMENT

Try to name one company, just one, that has given up on project management after implementing it. Probably you couldn’t. Every company that has adopted project management is still using it. Why? Because it works. Once a company has gone over to project management, the only question becomes: When will we achieve the full benefits of the system?

The strategic imperatives behind achieving excellence in project management come from two sources: internal and external. Internally, senior managers may discover the benefits of project management as they monitor general business trends in their industry or when they compare their company’s results with those of its competitors. Internal champions of project management recognize potential overall improvements in both efficiency and effectiveness. They may also understand that project management can create future general managers versed in the operations of virtually every functional unit.

External pressures may force a company to accept the need for change in the way it does business. For example,

- *Competition:* Customers expect lower cost and the use of project management on their projects.

- *Quality Standards:* Customers expect high quality, fewer failures, and fewer service calls.
- *Financial Outcomes:* Customers expect contractors to accept lower profit margins.
- *Legal Concerns:* Customers expect uniform project management systems that adhere to legal and regulatory boundaries (from the Environmental Protection Agency, for example).
- *Technological Factors:* Customers expect state-of-the-art technology at reasonable prices.
- *Social Concerns:* Employees want a system that allows them to do more work in less time in order to reduce the amount of overtime required.
- *Political Factors:* Companies compete in a global economy that requires uniform project management processes.
- *Economic Pressures:* Companies need to perform more work in less time and at a lower cost to reduce the impact of monetary exchange rates and the cost of borrowing money.
- *Stockholders' Concerns:* Stockholders want internal growth and external expansion through mergers and acquisitions, which must be executed quickly and cost effectively.

The benefits of project management have been demonstrated by numerous corporations. For example:

- Hewlett-Packard had shown increased sales, customer satisfaction, and with the use of integrated project/product teams, were able to lower project cost, shorten development time, and improve system integration and product design.
- During the 1990s, Radian International had garnered more repeat business and happier clients; it also reduced cost overruns and write-offs.
- Battelle (PNNL) had achieved better on-time and on-budget product delivery.
- 3M had reduced its product development time and, with the use of integrated project/product teams, outperformed their cost goals and improved performance.
- DaimlerChrysler lowered product cost, decreased development time, and improved vehicle designs.
- The Department of Defense used integrated project/product teams to achieve a lower than expected product cost, have ahead-of-schedule deliveries, and demonstrate an increase in performance.

Another strategic benefit of project management is that it can be integrated successfully with other management systems. The four most relevant management systems today are concurrent engineering (see Figure 1–4), total quality management, risk management, and change management. The combinations have produced synergistic results, as illustrated in Figure 1–5.

Combining project management with concurrent engineering may produce the following benefits:

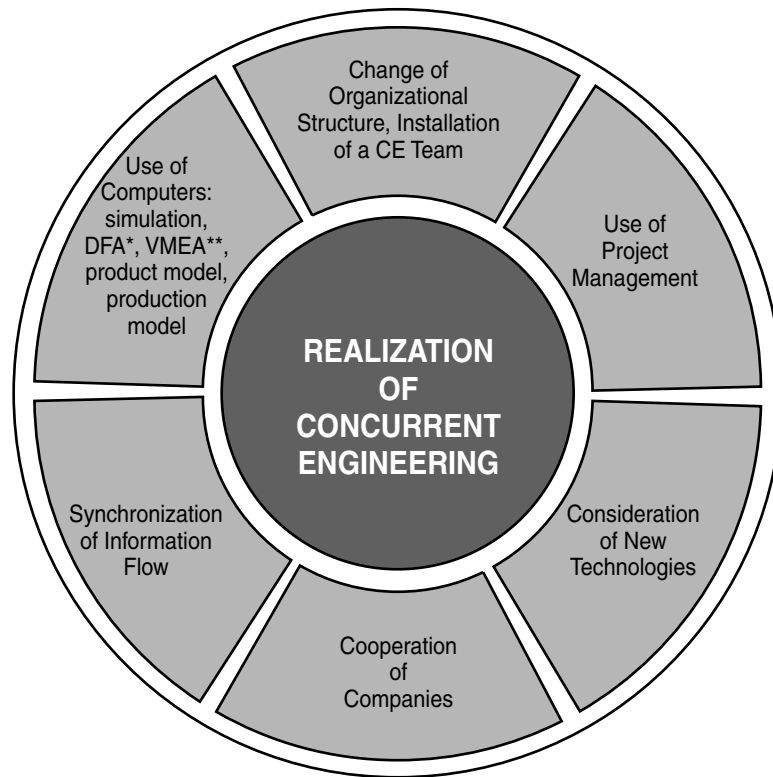


FIGURE 1-4. Combination of project management and concurrent engineering. *Source:* Reprinted from H. Kerzner, *In Search of Excellence in Project Management*. New York: Wiley, 1998, p. 8. Adapted from I. W. Eversheim, "Trends and Experience in Using Simultaneous Engineering." *Proceedings of the 1st International Conference on Simultaneous Engineering*, London, December 1990, p. 18.

- New product development time is reduced.
- Average life of the product is increased.
- Sales are increased.
- Revenues are increased.
- The number of customers is increased.

The Department of Defense estimates that concurrent engineering, combined with project management, produces these additional benefits:

- Design changes are reduced by at least 50 percent.
- Product lead times are reduced by more than 50 percent.
- Scrap and rework are reduced by 50 to 75 percent.

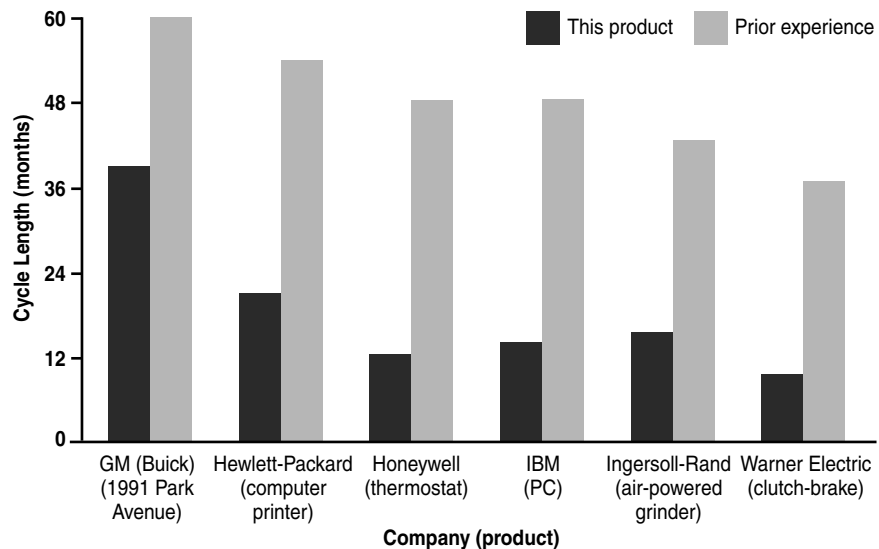


FIGURE 1–5. Results of six large corporations using product management in conjunction with other management systems to achieve improvements in product development time. *Source:* P. G. Smith and D. G. Reinertsen, *Developing Products in Half the Time*, Second Edition. New York: Wiley, 1997.

During the 1980s, Digital Equipment Corporation was a staunch supporter of both project management and concurrent engineering. According to John Hartley, Digital Equipment had identified the following improvements over a three-year period²:

- Time to market for new products was reduced from 30 months to 15 months.
- Product costs were reduced by 50 percent.
- Sales increased by 100 percent.
- The break-even point was reached earlier, about six months earlier on average.
- Profitability increased nine to ten times over what it had been five years before.

Combining project management with total quality management may produce the following benefits:

- Higher product quality
- Happier clients
- Fewer internal and external failures

2. From *Concurrent Engineering: Shortening Lead Times, Raising Quality, and Lowering Costs* by John Hartley. Copyright © 1992 by Productivity Press, P.O. Box 13390, Portland, OR 97213–0390, (800) 394-6868. Reprinted by permission.

- Reduced amounts of scrap
- Fewer product recalls and warranty problems

The benefits of combined risk management and project management may include:

- Better risk identification procedures
- Better risk quantification procedures
- Improved processes for responding to risk
- Improved decision-making processes
- Increased tolerance for accepting risk
- Clarified contractual identification of which parties are to bear which risks

Project management combined with change management may yield these benefits:

- The ability to respond to customers' change requests rapidly
- Decreased impact of changes on budget and schedule
- Increased value-added efforts on behalf of the customers
- Good customer relations
- Happier clients

1.4 PROJECT MANAGEMENT LIFE CYCLE

Achieving excellence in project management can be accomplished in a few years or a few decades. Excellence can't be achieved without change, and the speed of change is critical. Project management is like total quality management: both are management systems that require extensive education and training. And the educational process must start with senior managers. Why would any employee support change that is not supported from the top down?

Factors such as economic recession, dwindling market share, competition, low profitability, and poor employee morale may drive senior management's commitment to change. Executives must be committed to the change to project management and recognize the value it adds to the corporation before project management can succeed. Ultimately, they must understand that the change to project management will benefit every stakeholder in the company.

Since the early 1990s, the search for excellence in project management has taken on more and more importance. The benefits of project management today are obvious to both customers and contractors. In fact, excellence in project management has become a competitive weapon that attracts new business and retains existing customers.

During the past three decades, the Project Management Institute (PMI) has grown from 3,000 members to more than 100,000. The greatest growth has occurred since the late 1980s, probably owing to the certification process established for project personnel. Project management now has a career path. Customers are even requesting that contractors assign certified project managers to their projects. Even corporate executives are taking the

exam with the goal of functioning better as executive project sponsors and exhibiting to customers that their company's senior management supports project management totally.

The life cycle that virtually every company goes through in establishing the foundations for excellence is discussed in detail in Chapters 2 and 3. (The phases of the life cycle are shown in Table 2–1.)

The fastest way to establish a foundation for excellence is to implement training and education programs. Table 1–2 displays selected industry types identified by the number of years each company has been using project management and the level of training courses in project management that each offers. Project-driven industries generate most of their income from individual projects. Non-project-driven industries generate most of their income from products and services. Put another way, non-project-driven industries take on projects that support the organization's products and services; in project-driven industries, the organization exists to support its projects. Some industries are made up of organizations that are not predominantly project-driven but include several divisions that are project-driven. These are called hybrid organizations.

The characteristics of the three types of industries are summarized here:

- The aerospace, defense, and large construction industries are the project-driven stars of yesterday and today. Hundreds of millions of dollars have already been

TABLE 1–2. AMOUNT OF PROJECT MANAGEMENT TRAINING OFFERED, BY INDUSTRY TYPES

Level of Project Management Training	Hybrid	Project-Driven	Project-Driven
High	Automobiles	Automotive subcontractors	Aerospace
	Health care Machinery Mining	Computers Electronics	Defense Large construction
Medium	Hybrid	Hybrid	Project-Driven
	Beverages Chemicals Paper	Banking Pharmaceuticals Oil and gas Telecommunications	Leisure Amusement Nuclear utilities
Low	Hybrid	Hybrid	Non-Project-Driven
	Insurance Publishing Retail Transportation	Food Railroads Tobacco	Commodity manufacturing Metals
	1–5	5–10	15 or more
Years of Project Management Experience			

Source: Reprinted from H. Kerzner, *In Search of Excellence in Project Management*. New York: Wiley, 1998, p. 11.

spent in the development of quantitative tools that support project management in these industries. The organizations in these industries prefer to develop their own tools rather than use canned software packages. Several of these companies now enter signed licensing agreements with other companies for the use of their once-proprietary project management software. The project management systems used in these industries are excellent, but their effectiveness is hampered by the formality and number of policies and procedures still in place. The formality of their systems has been driven by their customers, many of them federal agencies.

- The automotive subcontractor, computer, and electronics industries will be the project-driven stars of tomorrow. Several companies in these industries have already achieved excellence in project management. Driven by consumers' demands for greater quality and shorter product development time in the near future, these industries should easily surpass aerospace, defense, and large construction in their project management capabilities. Automotive subcontractors, computer developers, and electronics companies tend to employ young project managers and executives who are willing to accept risk and to reduce the amount of bureaucracy involved in project management.
- Some project-driven companies in the leisure, amusement, and nuclear utility industries have slowly and methodically achieved some degree of excellence in project management. More consistent excellence will be achieved once these industries recognize that they will not be able to survive without fully implementing project management.
- The automotive, health care, machinery, and mining industries are the hybrid stars of today and tomorrow. Although these industries were slow to adopt project management during the 1980s, they are rapidly embracing it now, and many companies have already achieved some level of excellence. Excellence will be attainable for all the companies in these industries once they recognize the effects of changing legislation and new consumer demands. Today, policies and procedures are being streamlined. In addition, subcontractor management practices are being improved significantly, thus fostering trust among contractors and subcontractors. Project management certification is being encouraged.
- Perhaps the most rapid changes in project management are occurring in the banking, pharmaceutical, oil and gas, and telecommunications industries to make them the hybrid stars of tomorrow as well as today. These industries have accomplished more in the past few years than other industries have achieved in 10 years. The need for project management excellence in these rapidly growing industries has been driven by mergers, acquisitions, and legislation. In all likelihood, these industries will surpass others in their ability to use project management as a vehicle for risk assessment.
- Other industries providing a combination of project-driven and non-project-driven products and services are slowly taking up project management, and the need for it has not yet been recognized. These industries include beverages, chemicals, paper, insurance, publishing, retail, transportation, food, railroads, and tobacco. They are often dominated by politics, and projects tend to be driven by schedule and quality concerns. At the end of a project, the project managers in these industries usually have no idea how much money was actually spent.

- The commodity manufacturing and metals industries include predominantly non-project-driven companies that have very few projects separate from production-driven manufacturing services. The full adoption of project management in these industries may not occur until well into the next century.

1.5 EXCELLENCE IN PROJECT MANAGEMENT

The difference between the average company and the company that has achieved excellence in project management is the way that the growth and maturity phases of the project management life cycle are implemented. This is where advanced project management has a major impact on project management excellence. Figure 1–6 shows the six areas in which successful companies excel in project management. These six areas are discussed in Chapters 9 through 15.

Companies that decided to embark on a project management methodology soon found that there were more potential benefits than originally believed possible. This is shown in Table 1–3. As more and more benefits became attainable, the quest for excellence began. Companies were realigning their thought processes.

Lack of executive buy-in is the principal reason project management so often fails to reach its full potential in some companies. Simply because executives recognize that changes are needed does not mean that change will take place. Executives must realize that success and excellence in project management require decentralization and that executives

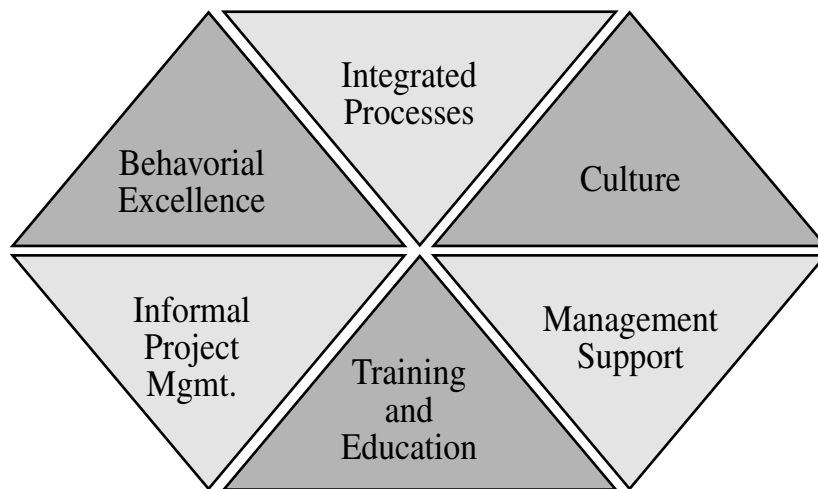


FIGURE 1–6. The six components of excellence. *Source:* Reprinted from H. Kerzner, *In Search of Excellence in Project Management*. New York: Wiley, 1998, p. 14.

TABLE 1–3. BENEFITS OF PROJECT MANAGEMENT

Past View	Present View
• Project management will require more people and add to the overhead costs • Profitability may decrease • Project management will increase the amount of scope changes • Project management creates organizational instability and increases conflicts • Project management is really “eyewash” for the customer’s benefit • Project management will create problems • Only large projects need project management • Project management will increase quality problems • Project management will create power and authority problems • Project management focuses on suboptimization by looking at only the project • Project management delivers products to a customer • The cost of project management may make us noncompetitive	• Project management allows us to accomplish more work in less time and with less people • Profitability will increase • Project management will provide better control of scope changes • Project management makes the organization more efficient and effective through better organizational behavior principles • Project management will allow us to work more closely with our customers • Project management provides a means for solving problems • All projects will benefit from project management • Project management increases quality • Project management will reduce power struggles • Project management allows people to make good company decisions • Project management delivers solutions • Project management will increase our business

must surrender critical information and partial control of expenditures to project managers. Because control of information and funding is a source of power for executives, many are reluctant to relinquish all of their power, and they are also reluctant to commit themselves fully to project management.

There are other roadblocks to executive commitment to project management. Some companies still resist the full implementation of project management because they assume that project management is unnecessary. After all, if employees were performing their assignments correctly in the first place, why would project management be needed? Project management is mistakenly dismissed as “checking the checkers.” Sometimes it is lumped together with internal auditing.

Professional project managers do not hesitate to tell the full story behind their projects. Unfortunately, this news is not always welcomed by senior managers. It’s not what they want to hear. Information takes on a negative aspect given the nature of command control coordination and management. Instead, accurate project information should be accepted as the payoff to proactive professional project management. In the future, senior managers will need to recognize the contributions of project managers in the analysis of market considerations, financial planning, and technical assessments.

1.6 SELECTION OF COMPANIES AS EXAMPLES

More than 300 companies were contacted during the preparation of this book. They were identified through

- Published literature
- Survey questionnaires
- Privileged knowledge (consulting and lecturing by the author)
- External trainers and consultants

The majority of the companies were provided three sets of questionnaires. Follow-up interviews were then conducted in many instances to verify the quality of the information and to show the interviewees the exact format and context of their responses. Authorization was required for reprinting verbatim quotations from corporate executives and project managers.

The initial intent was to identify at least one or two companies from each major industry without consideration of company size. Many of the companies that have achieved excellence in project management according to my criteria refused to participate. These companies believed that their competitive edge might be compromised by the release of sensitive information.

A second group of companies climbing the ladder to excellence declined participation for fear of being benchmarked against more successful companies in their industries. Some of these organizations recognized from the survey questionnaires that they still have a long way to go to achieve excellence. For example, one executive responded, "We don't do anything you're asking about. Perhaps we should."

A third group initially responded to the surveys but could not secure authorization to release the information. A fourth group of companies that are on track for excellence had second thoughts about seeing their names in print for fear that their customers would have expectations of them higher than they would be able to achieve.

The companies considered in this book as having achieved excellence or as at least being on the right track are these:

3M	Defense Acquisition University
ABB	Department of Defense
American Greetings	Detroit Energy
Antares	Diebold
Armstrong World Industries	Edelca
Battelle (Pacific Northwest National Laboratories)	EDS
BellSouth	Eli Lilly
Boeing	Ericsson
CIGNA	Exel
Computer Associates	FirstEnergy
Cooper Standard Automotive	General Electric
DaimlerChrysler	General Motors
	Hewlett-Packard

Humana	Noveon
Intel	PDVSA
International Institute for Learning (IIL)	Raytheon
I-Think	Roadway Express
Johnson & Johnson	Rockwell Automation
Johnson Controls	School of Project Management (SPM)
Lear	Sherwin-Williams
Kinetico	Star Alliance
Lear	StoneBridge Group
Lincoln Electric	Sun Microsystems
MahindraBT	Swiss Re
Metzeler	Texas Instruments
Microsoft	USAA
Middough Consulting	Virginia Department of Transportation
Mindjet	Walt Disney
Motorola	Westfield Group
National City Bank	Xerox
Nortel	

Small companies have project management cultures that permeate the entire organization. Large companies have pockets of project management. Some pockets may be highly successful in project management while others still have a long way to go. This holds true even for companies that have won the prestigious Malcolm Baldrige Award. Attempts were made to get responses from those divisions that have demonstrated excellence. Similarly, the responses made by individuals do not necessarily reflect the project management practices of the entire company.

Not all companies achieve excellence in all six of the areas shown in Figure 1–6. The companies that have come closest are identified in this book. Some companies identified may excel in two or three components and are included because they are headed in the right direction. These organizations will see the light at the end of the tunnel in the near future.

Unfortunately, there are not many companies that have actually achieved excellence. Roadblocks exist and must be compensated for. Dr. Al Zeitoun, Chief Projects Officer at the International Institute for Learning, believes that:

Project management is here to stay. The world that is going 250 miles an hour with reengineering and continuously changing processes and approaches is making the need for project management and project managers most evident. This group of key players in our organizations will continue to be the only group that can make sense of all these changes, the group that will maintain the ability to see the right amount of details without losing sight of the big picture.

There are, in my opinion, several indicators that project management excellence will have a long way to go:

1. The number of organizations that truly excel in understanding and implementing project management is only a limited few.
2. There are a great number of organizations that talk about project management and have project managers and yet haven't provided the sponsorship required for successful

implementation. We are seeing a struggle in defining authority, deliverables, and accountability, just to name a few. There are still myths, such as the myth that there would be no need for project charters if we had good job descriptions. Organizations are still managing around who they have instead of what needs to be done, and we are still seeing the negotiations for specific people rather than for specific deliverables.

3. There is hardly any reasonable level of education and research in project management. Universities, colleges, and institutions are finally coming up with some reasonable programs. Research, however, is barely starting.
4. The standards efforts in project management have a long path to follow. The PMBOK® Guide by the Project Management Institute (PMI), among other international bodies of knowledge, provides a solid base for standards. As strong as the document is, there are still several standards issues on the table. One of the most key open issues is the global standards issue. What is the global standard going to be like? Is the recent effort of ISO 10006 a step in that direction? There is still the crucial need to develop a comprehensive international standard that encompasses all the key disciplines of project management and cuts across industries and global cultures and boundaries.
5. The certification issue has a similar path to follow. On the global side, we have to decide on the need and value of global certification, the proper certification procedure, the certifying body(ies), the recertification requirements, and other multinational complex issues. On the national side, open issues pertain to the PMP [Project Management Professional] exam format, whether it's going to be an overall exam that covers all project life cycle phases or stay in the same eight modules format. The ongoing improvement of the points system for certification/recertification will have to continue with the increased concern and demand. Since certification doesn't have a legal implication, are we going to proceed with licensing similar to other professions? Are we going to consider certification and/or licensing based on specific industries? Several open questions still exist.
6. Global cooperation between key project management organizations has only started to be evident. Previous concerns about which organization should take the global leadership, like the challenge between PMI and the International Project Management Association (IPMA), is beginning to subside. The key focus is becoming: How can we work together globally to benefit from mutual experiences? For a while the issue of forming a global federation was surfacing.
7. As more and more organizations are beginning to manage their business by projects (MOBP) and rely on the strong cooperation between project managers and resource providers, there is a need for a different skill set for project managers. The mentoring side of a project manager's nature is shining. The need for training that addresses this different set of skills is clear. There is a much greater need for the soft skills than there is for the hard skills. A continuous improvement effort for training programs will be a requirement for training providers to stay in business.

Based on the above seven indicators, among several others, I believe that in project management we have only taken the first key steps. We are starting to crawl and will shortly begin to walk, talk, and walk the talk. A strong revolution to truly understand project management and the potential return on investment (ROI) it can bring is on the way. Organizations will continue to pursue better lessons learned so as to excel in the way projects are managed successfully over and over again. The continued increase in membership of project management organizations and the number of certified professionals will have no limits.

The global scene is going to be where project management excellence will be in greatest demand. Career paths for program managers as key individuals for achieving this global excellence will continue to be a very crucial issue. Those individuals are going to be strong candidates for the strong senior management seats of the future. Senior managers might actually take back the role of providing the vision that ties their organizations together.

Virtual teams will continue to develop, enabling the fast exchange of ideas, minimization of paperwork, and more efficient and effective project work. There is still going to be the need for one-on-one meetings and face-to-face team meetings. This will enable the team to handle key conceptual issues, address handoff challenges, and solve critical issues.

The true integration of systems and processes will continue to be a strong direction in the global marketplace. Minimizing and/or eliminating the redundancy between those systems and processes is the goal of this integration effort. A continuous stream of new project management ideas will appear, and the organizations today, as they become more projectized, will wonder about how strange yesterday was.

The twenty-first century will bring new meaning to the word *globalization*. If history has taught us anything, it is the fact global success may very well be based more upon managerial skills than on the products offered and markets served. A good project management methodology can provide a consistent framework for global projects. Combining a standard methodology with good managerial talent dramatically improves a firm's chances for global success.

Suzanne Zale, global program manager at EDS, pointed out:

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 the 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 geographical 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.

Some people contend that predicting the future for project management may be difficult because of the rate at which changes are being made. Adrian Lammi, president of the Northeast Ohio Chapter of the Project Management Institute, gives us his views of the twenty-first century:

In the twenty-first century, project management will retain its identity as a unique discipline because of the skills required for project management. Project management will continue to attract those rare individuals who have a high tolerance for details and who can successfully integrate them into a viable plan. Still more will be required of them. The balance of emphasis will not shift away from scope, time, cost, and quality. Rather, human

resources management and communications management will achieve parity as success factors. Project managers will be prized for their ability to persuade, to influence, to inspire, and to negotiate. They will be required to do so across geographic and cultural boundaries. Increasingly the arena in which project managers operate will shrink. The general practitioner will become as extinct as his medical counterpart. Project sponsors will demand more than certification. They will seek individuals who possess endorsements reflecting geopolitical and industry experience. The abilities to manage detail and to be technically competent, however, will hold project managers captive within their own profession. Thus the percentage of project managers promoted to top management positions will remain relatively constant. Project management will support management rather than evolving into a core component of general management.

MULTIPLE CHOICE QUESTIONS

1. Basic project management deals with:
 - A. The principles of project management
 - B. Scheduling techniques
 - C. Cost control techniques
 - D. Working with executive sponsors
 - E. All of the above
2. Advanced project management deals with:
 - A. Turning theory into practice
 - B. Implementation techniques
 - C. How to achieve excellence in project management
 - D. All of the above
 - E. A and C only
3. Excellence in project management is most frequently achieved through:
 - A. A comprehensive knowledge of the principles
 - B. Implementation of the principles
 - C. A compression of the schedules
 - D. Higher product quality
 - E. A lowering of costs
4. The classical definition of a project is an activity that:
 - A. Is unique or one-of-a-kind
 - B. Has a definable objective
 - C. Operates under constraints of time, cost, and quality
 - D. Consumes human and nonhuman resources
 - E. All of the above
5. Effective project management requires extensive planning and coordination because:
 - A. Coordination is now horizontal rather than only vertical
 - B. The project's constraints are loose
 - C. Employees cannot work efficiently without a plan
 - D. Written communication is mandated in a project management environment
 - E. None of the above
6. Project management is often said to generate future general managers primarily through:
 - A. Horizontal work flow
 - B. Control of project costs

- C. The management of tight constraints
 - D. All of the above
 - E. B and C only
7. According to Linda Kretz, many companies make the often fatal mistake of:
- A. Providing too large a budget for the project
 - B. Providing too small a budget for the project
 - C. Providing too few resources
 - D. Not assigning an executive sponsor
 - E. Not assigning the project manager until after the project has been planned
8. In the future, we can expect companies to recognize the contributions project managers make to the:
- A. Bottom line of the company
 - B. Planning and control function
 - C. Quality improvement efforts
 - D. Software enhancement efforts
 - E. None of the above
9. During the early years of project management growth, the driving force that caused executives to recognize project management as a profession was:
- A. Increased quality requirements
 - B. Schedule compression
 - C. Profit and loss responsibility
 - D. All of the above
 - E. A and B only
10. The growth of project management occurred initially in companies that were classified as:
- A. Non-project-driven
 - B. Project-driven
 - C. Quasi-project-driven
 - D. Purely functional
 - E. Hybrids
11. Since the last recession of 1989–1993, the greatest growth for project management occurred in the _____ sector.
- A. Project-driven
 - B. Non-project-driven
 - C. Hybrid
 - D. Quasi-project-driven
 - E. Purely functional
12. The two primary factors contributing to the recent rapid acceptance of project management were:
- A. P&L responsibility and recessions
 - B. Executive sponsorship and total quality management
 - C. Executive sponsorship and university course work
 - D. Graduate degrees in project management and PMI certification
 - E. P&L responsibility and PMI certification
13. During the recession of 1979–1983, allies for project management began to appear.
- A. True
 - B. False
14. Which of the following is not normally recognized as an ally of project management?
- A. Total quality management

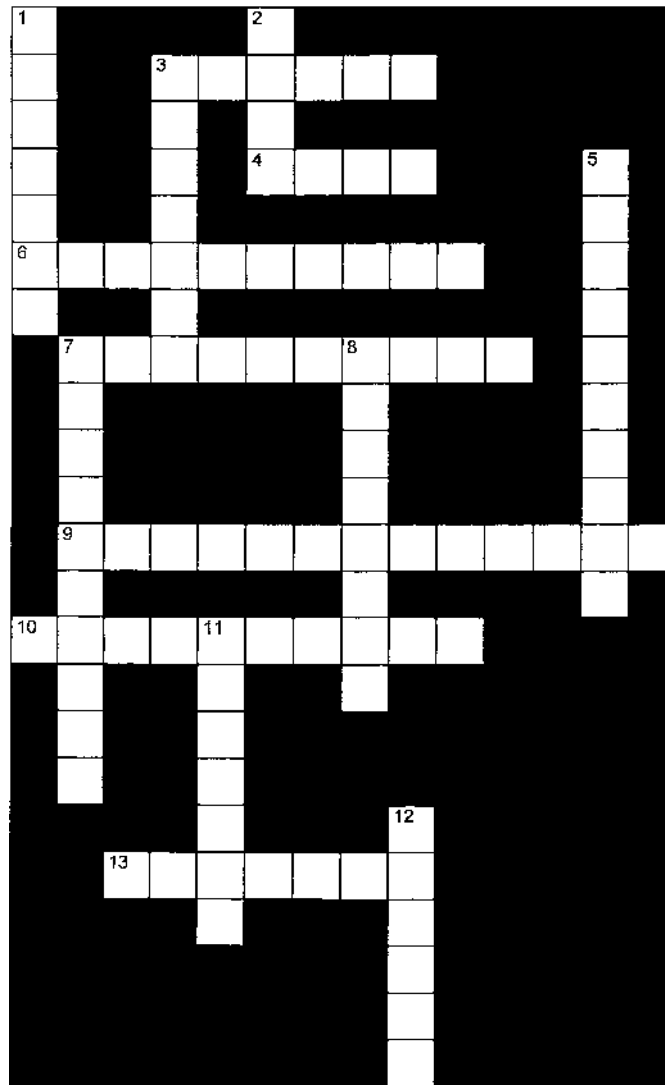
- B. Increased span of control
 - C. Concurrent engineering
 - D. Executive empowerment/self-directed teams
 - E. Corporate reengineering
15. Today, project management implementation is viewed as being _____, whereas historically it was _____.
- A. Customer-driven; internally driven
 - B. Internally driven; customer-driven
 - C. Part-time; a full-time effort
 - D. Part-time; a profession
 - E. None of the above
16. Once an organization recognizes the need for project management, the speed by which implementation occurs is dictated by the:
- A. Number of project management training courses
 - B. Educational level of the project manager
 - C. Senior management's desire to decentralize authority and decision-making
 - D. Line manager's ability to manage projects better
 - E. All of the above
17. Which of the following is a "strategic imperative" that may force the organization to accept project management?
- A. Competition
 - B. Quality standards
 - C. Legal concerns
 - D. Stockholder concerns
 - E. All of the above
18. A strategic benefit of project management is that it can be integrated successfully with other management techniques.
- A. True
 - B. False
19. Which of the following is a benefit of combining project management with concurrent engineering?
- A. New product development time is reduced
 - B. Sales are increased
 - C. The number of customers is increased
 - D. Average product life is increased
 - E. All of the above
20. Combining project management with total quality management may produce which benefit?
- A. Higher product quality
 - B. Happier clients
 - C. Fewer internal and external failures
 - D. Reduced amounts of scrap
 - E. All of the above
21. The fastest way to establish a foundation for excellence in project management is through:
- A. Education programs
 - B. Assigning project managers with advanced degrees

- C. Allowing line managers to serve as a project manager
 - D. Allowing executives to manage projects
 - E. An apprenticeship period of ten years on-the-job training
22. A project-driven industry that will most likely be one of the stars of the future will be:
- A. Automotive subcontractors
 - B. Health care
 - C. Mining
 - D. State governments
 - E. All of the above
23. Which of the following is a “present view” of the benefits of project management?
- A. Power and authority problems will increase
 - B. Customers will receive solutions rather than products
 - C. The administrative cost of project management will increase
 - D. Project management will increase the number of scope changes
 - E. Profitability may decrease
24. Which of the following is not one of the hexagon of excellence components?
- A. Integrated processes
 - B. Training and education
 - C. Recessionary survival
 - D. Informal project management
 - E. Culture
25. A common roadblock in getting executives to accept project management is that:
- A. True project status is not always welcomed
 - B. Increased profitability can be detrimental
 - C. Customer expectations may not be met
 - D. Schedule slippages may occur more frequently
 - E. All of the above are possible

DISCUSSION QUESTIONS

1. Why is it that during favorable economic times, companies are less likely to implement project management?
2. In the early days of project management during the 1950s and 1960s, the aerospace and defense industries had very little difficulty in implementing project management. How do we explain this?
3. Why were allies for project management needed before non-project-driven organizations were willing to accept project management?
4. Explain the difference between a hybrid organization and a non-project-driven organization.
5. You work for a non-project-driven company. What project management support might exist, if any, from each of the following: senior management, functional management, and employees?
6. Is excellence in project management achieved more through knowledge and education or through implementation? Explain your answer.

7. One of the “strategic” imperatives promoting the acceptance of project management is social concerns. What topics other than what was identified in this chapter could have been included in this category?
8. Was the acceptance of project management in project-driven organizations more customer-driven or internally driven?
9. During the 1970s and early 1980s, public seminars on project management began to surface. Was the information taught in these seminars more behaviorally focused or technically focused?
10. If the aerospace and defense industries have been using project management for more than 40 years, then why do we still have cost overruns, perhaps as much as 200 to 300 percent? Do these cost overruns indicate poor project management?

**Across**

- 3. Part of P&L
- 4. Project constraint
- 6. Economic forces
- 7. Hexagon part
- 9. Project management ally
- 10. Total quality _____
- 13. Project constraint

Down

- 1. Hexagon part
- 2. Project constraint
- 3. _____-driven
- 5. Ally: _____ engineering
- 7. _____-driven
- 8. Opposite of basic
- 11. Benefit: future _____ managers
- 12. Type of company

