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THE CHANGING LANDSCAPE FOR PROJECT MANAGEMENT

CHAPTER OVERVIEW

The way we managed projects in the past will not suffice for many of the projects we are managing now, as well as for the projects of the future. The complexity of these projects will place pressure on organizations to better understand how to identify, select, measure, and report project metrics. The future of project management may very well be metric-driven project management.

CHAPTER OBJECTIVES

- To understand how project management has changed
- To understand the need for project management metrics
- To understand the need for better, more complex project management metrics

KEY WORDS

- Certification Boards
- Complex Projects
- Engagement Project Management
- Frameworks
- Governance
- Project Management Methodologies
- Project Success

1.0 INTRODUCTION

For more than 50 years project management has been in use but perhaps not on a worldwide basis. What differentiated companies that were using project management in the early years was whether or not they used project management, not how well they used it. Today, almost every company uses project management and the differentiation is whether they are simply good at project management or whether they truly excel at project management. The difference between using project management and being good at project management is relatively small, and most companies can become good at project management in a relatively short time period, especially if they have executive-level support. A well-organized project management office (PMO) can also accelerate the maturity process. The difference, however, between

being good and excelling at project management is quite large. One of the critical differences is that excellence in project management on a continuous basis requires more metrics than just time and cost. The success of a project cannot be determined just from the time and cost metrics, yet we persist in the belief that this is possible.

Companies such as IBM, Microsoft, Siemens, Hewlett-Packard, Computer Associates, and Deloitte, just to name a few, have come to the realization that they must excel at project management. This requires additional tools and metrics to support project management. IBM has more than 300,000 employees with more that 70 percent outside of the United States. This includes some 20,000 project managers. Hewlett-Packard (HP) has more than 8000 project managers and 3500 Project Management Professionals (PMP®s). HP desires 8000 project managers and 8000 PMP®s. These numbers are now much larger with HP’s acquisition of Electronic Data Systems (EDS).

1.1 EXECUTIVE VIEW OF PROJECT MANAGEMENT

The companies mentioned previously perform strategic planning for project management and are focusing heavily on the future. Several of the things that these companies are doing will be discussed in this chapter, beginning with senior management’s vision of the future. Years ago, senior management provided lip service to project management, reluctantly supporting it to placate the customers. Today, senior management appears to have recognized the value in using project management effectively and maintains a different view of project management as seen in Table 1-1.

| TABLE 1-1 The Executive View of Project Management | |
|---|--|
| OLD VIEW | NEW VIEW |
| Project management is a career path. | Project management is a strategic or core competency necessary for the growth and survivability of the company. |
| We need our people certified as Project Management Professionals (PMP®s). | We need our people to undergo multiple certifications; at a minimum, to be certified in project management and corporate business processes. |
| Project managers will be used for project execution only. | Project managers will participate in the portfolio selection of projects and capacity-planning activities. |
| Business strategy and project execution are separate activities. | Part of the project manager’s job is to bridge strategy and execution. |
| Project managers make solely project-based decisions. | Project managers make both project and business decisions. |

Project management is no longer regarded as a part-time occupation or even a career path position. It is now viewed as a strategic competency needed for the survival of the firm. Superior project management capability can make the difference between winning and losing a contract.

For more than 20 years, becoming a PMP® was seen as the light at the end of the tunnel. Today, that has changed. Becoming a PMP® is the light at the entryway to the tunnel. The light at the end of the tunnel may require multiple certifications. As an example, after becoming a PMP®, a project manager may desire to become certified in:

- Business Analyst Skills or Business Management
- Program Management
- Business Processes
- Managing Complex Projects
- Six Sigma
- Risk Management

Some companies have certification boards, which meet frequently and discuss what certification programs would be of value for their project managers. Certification programs that require specific knowledge of company processes or company intellectual property may be internally developed and taught by the company's own employees.

Executives have come to the realization that there is a return on investment in project management education. Therefore, executives are now investing heavily in customized project management training, especially in the behavioral courses. As an example, one executive commented that he felt that presentation skills training was the highest priority for his project managers. If a project manager makes a highly polished presentation before the client, the client believes that the project is being managed the same way. If the project manager makes a poor presentation, then the client might believe the project is managed the same way. Other training programs that executives feel would be beneficial for the future include:

- Establishing metrics and key performance indicators (KPIs)
- Dashboard design
- Managing complex projects
- How to perform feasibility studies and cost-benefit analyses
- Business analysis
- Business case development
- How to validate and revalidate project assumptions
- How to establish project governance
- How to manage multiple stakeholders
- How to design and implement "fluid" or adaptive enterprise project management methodologies
- How to develop coping skills and stress management skills

Project managers are now being brought on board projects at the beginning of the initiation phase rather than at the end of the initiation phase. To understand the reason for this, consider the following situation:

SITUATION: A project team is assembled at the end of the initiation phase of a project to develop a new product for the company. The project manager is given the business case for the project together with a listing of the assumptions and constraints. Eventually, the project is completed, somewhat late and significantly over budget. When asked by marketing and sales why the project costs were so large, the project manager responds, "According to my team's interpretation of the requirements and the business case, we had to add in more features than we originally thought." Marketing then replies, "The added functionality is more than what our customers actually need. The manufacturing costs for what you developed will be significantly higher than anticipated and that will force us to raise the selling price. We may no longer be competitive in the market segment we were targeting." "That's not our problem," responds the project manager. "Our definition of project success is the eventual commercialization of the product. Finding customers is your problem, not our problem."

Needless to say, we could argue about what the real issues were in this project that created the problems. For the purpose of this book, there are two issues that stand out. First and foremost, project managers today are paid to make business decisions as well as project decisions. Making merely project-type decisions could result in the development of a product that is either too costly to build or overpriced for the market at hand. Second, the traditional metrics used by project managers over the past several decades were designed for project rather than business decision making. Project managers must recognize that, with the added responsibilities of making business

TIP Today's project manager sees himself/herself as managing part of a business rather than simply managing a project. Therefore, additional metrics may be required for informed decision making to happen.

decisions, a new set of metrics may need to be included as part of the project manager's responsibility. Likewise, we could argue that marketing was remiss in not establishing and tracking business-related metrics throughout the project and simply waited until the project was completed to see the results.

1.2 COMPLEX PROJECTS¹

For more three decades, project management has been used to support traditional projects. Traditional projects are heavily based upon linear thinking; we have well-structured life cycle phases and templates, forms,

1. Adapted from Harold Kerzner and Carl Belack, *Managing Complex Projects*, John Wiley & Sons and the International Institute for Learning (IIL) Co-publishers, 2010; Chapter 1.

guidelines, and checklists for each phase. As long as the scope is reasonably well defined, traditional project management works well.

Unfortunately, only a small percentage of all of the projects within a company fall into this category. Most nontraditional or complex projects use seat-of-the-pants management because they are largely based upon business scenarios where the outcome or expectations can change from day to day. Therefore, project management techniques were neither required nor used on these complex projects that were more business oriented and aligned to five-year or ten-year strategic plans that were constantly updated.

Now, we are finally realizing that project management can be used on these complex projects, but the traditional project management processes may be inappropriate or must be modified. This includes looking at project management metrics and KPIs in a different light. The leadership style for complex projects may not be the same as for traditional projects. Risk management is significantly more difficult on complex projects and the involvement of more participants and stakeholder is necessary.

Now that we have become good at traditional projects, we are focusing our attention on the nontraditional or complex projects. Some of the major differences between traditional and nontraditional or complex projects are shown below in Table 1-2.

Comparing Traditional and Nontraditional Projects

The traditional project that most people manage is usually less than 18 months. In some companies, the traditional project might be six months or less. The length of the project is usually dependent on the industry. In the auto industry, for example, a traditional project is three years.

TABLE 1-2 Traditional versus Nontraditional Projects

| TRADITIONAL PROJECTS | NONTRADITIONAL PROJECTS |
|--|--|
| The time duration is 6–18 months. | The time duration can be over several years. |
| The assumptions are not expected to change over the duration of the project. | The assumptions can and will change over the project’s duration. |
| Technology is known and will not change over the project’s duration. | Technology will most certainly change. |
| People that started on the project will remain through to completion (the team and the project sponsor). | People who approved the project and are part of the governance may not be there at the project’s conclusion. |
| The statement of work is reasonably well defined. | The statement of work is ill defined and subject to numerous scope changes. |
| The target is stationary. | The target may be moving. |
| There are few stakeholders. | There are multiple stakeholders. |
| There are few metrics and key performance indicators. | There can be numerous metrics and key performance indicators. |

With projects that are 18 months or less, we assume that technology is known with some degree of assuredness and technology may undergo little change over the life of the project. The same holds true for the assumptions. We tend to believe that the assumptions made at the beginning of the project will remain intact for the duration of the project unless a crisis occurs.

People that are assigned to the project will most likely stay on board the project from beginning to end. The people may be full-time or part-time. This includes the project sponsor as well as the team members.

Because the project is 18 months or less, the statement of work is usually reasonably well defined and the project plan is based upon reasonably well-understood and proven estimates. Cost overruns and schedule slippages can occur, but not to the degree that they will happen on complex projects. The objectives of the project, as well as critical milestone or deliverable dates, are reasonably stationary and not expected to change unless a crisis occurs.

The complexities of nontraditional projects seem to have been driven in the past by time and cost. Some people believe that these are the only two metrics that need to be tracked on a continuous basis. Complex projects may run as long as 10 years, or even longer. Because of the long time duration, the assumptions made at the initiation of the project will most likely not be valid at the end of the project. The assumptions will have to be revalidated throughout the project. There can be numerous metrics, and the metrics can change over the duration of the project. Likewise, technology can be expected to change throughout the project. Changes in technology can create significant and costly scope changes to the point where the final deliverable does not resemble the initially planned deliverable.

People on the governance committee and in decision-making roles most likely are senior people and may be close to retirement. Based upon the actual length of the project, the governance structure can be expected to change throughout the project if the project's duration is 10 years or longer.

Because of scope changes, the statement of work may undergo several revisions over the life cycle of the project. New governance groups and new stakeholders can have their own hidden agendas and demand that the scope be changed or they might even cancel their financial support for the project. Finally, whenever you have a long-term complex project where continuous scope changes are expected, the final target may move. In other words, the project plan must be constructed to hit a moving target.

SITUATION: A project manager was brought on board a project and provided with a project charter that included all of the assumptions made in the selection and authorization of the project. Part way through the project, some of the business assumptions changed. The project manager assumed that the project sponsor would be monitoring the enterprise environmental factors for changes in the business assumptions. That did not happen. The project was eventually completed, but there was no real market for the product.

TIP Metrics and key performance indicators must be established for those critical activities that can have a direct impact on the success or failure of the project. This includes the tracking of assumptions and value.

Given the premise that project managers are now more actively involved in the business, we must track the assumptions the same way that we track budgets and schedules. If the assumptions are wrong or no longer valid, then we may need to either change the statement of work or even consider canceling the project. We should

also track the expected value at the end of the project because unacceptable changes in the final value may be another reason for project cancellation.

Examples of assumptions that are likely to change over the duration of a project, especially on a long-term project, include:

- The cost of borrowing money and financing the project will remain fixed.
- Procurement costs will not increase.
- The breakthrough in technology will take place as scheduled.
- The resources with the necessary skills will be available when needed.
- The marketplace will readily accept the product.
- Our competitors will not catch up to us.
- The risks are low and can be easily mitigated.
- The political environment in the host country will not change.

The problem with having faulty assumptions is that they can lead to bad results and unhappy customers. The best defense against poor assumptions is good preparation at project initiation, including the development of risk mitigation strategies and tracking metrics for critical assumptions. However, it may not be possible to establish metrics for the tracking of all assumptions.

Most companies either have or are in the process of developing an enterprise project management methodology (EPM). EPM systems are usually rigid processes designed around policies and procedures, and work

efficiently when the statement of work is well defined. With the new type of projects expected over the next decade, however, these rigid and inflexible processes may be more of a hindrance.

TIP The more flexibility the methodology contains, the greater the need for additional metrics and key performance indicators.

EPM systems must become more flexible in order to satisfy business needs. The criteria for good systems will lean toward forms, guidelines, templates, and checklists rather than policies and procedures. Project managers will be given more flexibility in order to make decisions necessary to satisfy the business needs of the project. The situation is further complicated in that all active stakeholders may wish to use their own methodology, and having multiple methodologies on the same project is never a good idea. Some host countries may be quite knowledgeable in project management, whereas other may have just cursory knowledge.

In the future, having a fervent belief that the original plan is correct may be a poor assumption. As the project's business needs change, the need to

TABLE 1-3 Summarized Differences between Traditional and Nontraditional Projects

| MANAGING TRADITIONAL PROJECTS | MANAGING NONTRADITIONAL PROJECTS |
|---|--|
| Single-person sponsorship | Governance by committee |
| Possibly a single stakeholder | Multiple stakeholders |
| Project decision making | Both project and business decision making |
| An inflexible project management methodology | Flexible or “fluid” project management methodology |
| Periodic status reporting | Real-time reporting |
| Success is defined by the triple constraints. | Success is defined by competing constraints, value, and other factors. |
| Metrics and KPIs are derived from the earned value measurement system . | Metrics and KPIs may be unique to the particular project and even to a particular stakeholder. |

change the plan will be evident. Also, decision making based entirely upon the triple constraints, with little regard for the final value of the project, may result in a poor decision. Simply stated, today’s view of project management is quite different from the views in the past, and this is partially the result of recognizing the benefits of project management over the past two decades.

We can now summarize some of the differences between managing traditional and complex projects. These are shown in Table 1-3. Perhaps the primary difference is whom the project manager must interface with on a daily basis. With traditional projects, the project manager interfaces with the sponsor and the client, both of whom may provide the only governance on the project. With complex projects, governance is by committee and there can be multiple stakeholders whose concerns need to be addressed.

Defining Complexity

Complex projects can differ from traditional projects for a multitude of reasons, including:

- Size
- Dollar value
- Uncertain requirements
- Uncertain scope
- Uncertain deliverables
- Complex interactions
- Uncertain credentials of the labor pool
- Geographical separation across multiple time zones
- Use of large virtual teams
- Other differences

There are numerous definitions of a complex project, based upon the interactions of two or more of the preceding elements. Even a small, two-month infrastructure project can be considered complex according to the definition. This can create havoc when selecting and using metrics. The projects that you manage within your own company can be regarded as complex projects if the scope is large and the statement of work is only partially complete. Some people believe that R&D projects are always complex because, if you can lay out a plan for R&D, then you probably do not have R&D. R&D is when you are not 100 percent sure where you are heading, you do not know what it will cost, and you do not know if and when you will get there.

Complexity can be defined according to the number of interactions that must take place for the work to be executed. The greater the number of functional units that must interact, the harder it is to perform the integration. The situation becomes more difficult if the functional units are dispersed across the globe and if cultural differences makes integration difficult. Complexity can also be defined according to size and length. The larger the project is in scope and cost, and the greater the time frame,

TIP Because of the complex interactions of the elements of work, a few simple metrics may not provide a clear picture of project status. The combination of several metrics may be necessary in order to make informed decisions.

the more likely it is that scope changes will occur significantly, affecting the budget and schedule. Large, complex projects tend to have large cost overruns and schedule slippages. Good examples of this are Denver International Airport, the Channel between England and France, and the “Big Dig” in Boston.

Tradeoffs

Project management is an attempt to improve efficiency and effectiveness in the use of resources by getting work to flow multidirectionally through an organization. This holds true for both traditional projects and complex projects. Initially, this might seem easy to accomplish, but there are typically a number of constraints imposed upon a project. The most common constraints are time, cost, and performance (also referred to as scope or quality) and are known as “the triple constraints.”

From an executive-level perspective, the goal of project management may be meeting the triple constraints of time, cost, and performance, while maintaining good customer relations. Unfortunately, because most projects have some unique characteristics, highly accurate estimates may not be possible and tradeoffs between the triple constraints may be necessary. As will be discussed later, there may be significantly more than three constraints on a project and metrics may have to be established to track each of the constraints. The metrics provide the basis for informed trade-off decision making. Executive management, functional management, and key stakeholders must be involved in almost all tradeoff discussions to

ensure that the final decision is made in the best interests of the project, the company, and the stakeholders. If multiple stakeholders are involved, as there are on complex projects, then agreement from all of the stakeholders may be necessary. Project managers may possess sufficient knowledge for some technical decision making but may not have sufficient business or technical knowledge to adequately determine the best course of action to address the interests of the parent company as well as the individual stakeholders on the project.

Skill Set

All project managers have skills, but not all project managers will have the right skills for the given job. For projects internal to a company, it may be possible to develop a company-specific skill set or company-specific body of knowledge. Specific training courses can be established to support company-based knowledge requirements.

For complex projects with a multitude of stakeholders, all from different countries with different cultures, finding the perfect project manager may be an impossible task. Today, we are in the infancy stage of understanding complex projects and the accompanying metrics, and we may not be able to determine the ideal skill set for managing complex projects. We must remember that project management existed for more than three decades before we created the first Project Management Body of Knowledge (*PMBOK® Guide*), and even now with the fourth edition, it is still referred to as a “guide.”

We can, however, conclude that there are certain skills required to manage complex projects. Some additional skills needed might be: how to manage virtual teams; understanding cultural differences; managing multiple stakeholders, each of whom may have a different agenda; understanding the impact of politics on project management; and selecting and measuring project metrics.

Governance

Cradle-to-grave user involvement in complex projects is essential. What is unfortunate is that user involvement can change because of politics and the length of the project. It is not always possible to have the same user community attached to the project from beginning to end. Promotions, changes in power and authority positions because of elections, and retirements can cause a shift in user involvement.

Governance is the process of decision making. On large complex projects, governance will be in the hands of the many rather than the few. Each stakeholder may either expect or demand to be part of all critical decisions on the project. This must be supported by proper metrics that provide meaningful information. The channels for governance must be clearly

defined at the beginning of the project, possibly before the project manager is assigned. Changes in governance, which are increasingly expected, the longer the project takes, can have a serious impact on the way the project is managed, as well as on the metrics used.

Decision Making

Complex projects have complex problems. All problems generally have solutions, but not all solutions may be good or even practical. Good metrics can make decision making easier. Also, some solutions to problems can be more costly than other solutions. Identifying a problem is usually easy. Identifying alternatives may require the involvement of many stakeholders, and each stakeholder may have a different view of the actual problem and the possible alternatives. To complicate matters, some host countries have very long decision-making cycles, for the identification of the problem as well as for the selection of the best alternative. Each stakeholder may select an alternative that is in the best interests of that particular stakeholder rather than in the best interests of the project.

Obtaining approval can take just as long, especially if the solution requires that additional capital be raised and if politics play an active role. In some emerging countries, every complex project may require the signature of a majority of the ministers and senior government leaders. Decisions may be based upon politics and religion as well.

Fluid Methodologies

With complex projects, the project manager needs a fluid or flexible project management methodology capable of interfacing with multiple stakeholders. The methodology may need to be aligned more with business processes than with project management processes, since the project manager may need to make business decisions as well as project decisions. Complex projects seem to be dictated more by business decisions than by pure project decisions.

Complex projects are driven more by the project's end value than by the triple or competing constraints. Complex projects tend to take longer than anticipated and cost more than originally budgeted because of the need to guarantee that the final result will have the value desired by the customers and stakeholders. Simply stated, complex projects tend to be value-driven rather than driven by the triple or competing constraints.

TIP Completing a project within the triple constraints is not necessarily success if perceived stakeholder value is not there at the conclusion of the project.

TIP The more complex the project, the more time is needed to select, perform measurements, and report on the proper mix of metrics.

TIP The longer the project, the greater the flexibility needed for metrics to change.

1.3 GLOBAL PROJECT MANAGEMENT

Every company in the world has complex projects that they would have liked to undertake but were unable to because of limitations such as:

- No project portfolio management function to evaluate projects
- A poor understanding of capacity planning
- A poor understanding of project prioritization
- A lack of tools for determining project value
- A lack of project management tools and software
- A lack of sufficient resources
- A lack of qualified resources
- A lack of support for project management education
- A lack of a project management methodology
- A lack of knowledge in dealing with complexity
- A fear of failure
- A lack of understanding of metrics needed to track the project

Because not every company has the capability to manage these complex projects, they must look outside for suppliers of project management services. Companies that provide these services on a global basis consider themselves to be business solution providers and differentiate themselves from localized companies according to the elements in Table 1-4.

Those companies that have taken the time and effort to develop flexible project management methodologies and become solution providers are companies that are competing in the global marketplace. Although these companies may have as part of their core business the providing of products and services, they may view their future as being a global solution provider for the management of complex projects.

TABLE 1-4 Global versus Nonglobal Companies

| FACTOR | NONGLOBAL | GLOBAL |
|------------------------|------------------------------------|---|
| Core business | Sell products and services | Sell business solutions |
| PM satisfaction level | Must be good at project management | Must excel at project management |
| PM methodology | Rigid | Flexible and fluid |
| Metrics/KPIs | Minimal | Extensive |
| Supporting tools | Minimal | Extensive |
| Continuous Improvement | Follow the leader | Capture best practices and lessons learned |
| Business knowledge | Know your company's business | Understand the client's business as well as your company's business |
| Type of team | Co-located | Virtual |

TIP Competing globally cannot be accomplished effectively with the same mindset as competing locally. An effective project management information system based upon possibly project-specific metrics may be essential.

For these companies, being good at project management is not enough; they must excel at project management. They must be innovative in their processes to the point that all processes and methodologies are highly fluid and easily adaptable to a particular client. They have an extensive library of tools to support the project manage-

ment processes. Most of the tools were created internally with ideas discovered through captured lessons learned and best practices.

1.4 PROJECT MANAGEMENT METHODOLOGIES AND FRAMEWORKS

Most companies today seem to recognize the need for one or more project management methodologies but either create the wrong methodologies or misuse the methodologies that have been created. Many times, companies rush into the development or purchasing of a methodology without any understanding of the need for one other than the fact that their competitors have a methodology. Jason Charvat states:²

Using project management methodologies is a business strategy allowing companies to maximize the project's value to the organization. The methodologies must evolve and be "tweaked" to accommodate a company's changing focus or direction. It is almost a mind-set, a way that reshapes entire organizational processes: sales and marketing, product design, planning, deployment, recruitment, finance, and operations support. It presents a radical cultural shift for many organizations. As industries and companies change, so must their methodologies. If not, they're losing the point.

There are significant advantages to the design and implementation of a good, flexible methodology:

- Shorter project schedules
- Reduce and/or better control of costs
- Prevent unwanted scope changes
- Plan for better execution
- Predict results more accurately
- Improve customer relations during project execution
- Adjust the project during execution to fit changing customer requirements
- Provide senior management with better visibility of status
- Standardization in execution
- Capturing of best practices

2. Jason Charvat, *Project Management Methodologies*, John Wiley & Sons Publishers, Hoboken, 2003; p.2.

Rather than using policies and procedures, some methodologies are constructed as a set of forms, guidelines, templates, and checklists that can and must be applied to a specific project or situation. It may not be possible to create a single enterprise-wide methodology that can be applied to each and every project. Some companies have been successful doing this, but there are still many companies that successfully maintain more than one methodology. Unless the project manager is capable of tailoring the enterprise project management methodology to his/her needs, more than one methodology may be necessary.

There are several reasons why good intentions often go astray. At the executive levels, methodologies can fail if the executives have a poor understanding of what a methodology is and believe that a methodology is:³

- A quick fix
- A silver bullet
- A temporary solution
- A cookbook approach for project success

At the working levels, methodologies can also fail if they:⁴

- Are abstract and high level
- Contain insufficient narratives to support these methodologies
- Are not functional or do not address crucial areas
- Ignore the industry standards and best practices
- Look impressive but lack real integration into the business
- Use nonstandard project conventions and terminology
- Compete for similar resources without addressing this problem
- Don't have any performance metrics
- Take too long to complete because of bureaucracy and administration

Other reasons why methodologies can fail include:

- The methodology must be followed exactly even if the assumptions and environmental input factors have changed.
- The methodology focuses on linear thinking.
- The methodology does not allow for out-of-the-box thinking.
- The methodology does not allow for value-added changes that are not part of the original requirements.
- The methodology does not fit the type of project.
- The methodology is too abstract (rushing to design it).
- The methodology development team neglects to consider bottlenecks and the concerns of the user community.

3. Ibid., p.4.

4. Ibid., p.5.

- The methodology is too detailed.
- The methodology takes too long to use.
- The methodology is too complex for the market, clients, and stakeholders to understand.
- The methodology does not have sufficient or correct metrics.

Deciding on what type of methodology is not an easy task. There are many factors to consider such as:⁵

- The overall company strategy—how competitive are we as a company?
- The size of the project team and/or scope to be managed
- The priority of the project
- How critical the project is to the company
- How flexible the methodology and its components are

There are numerous other factors that can influence the design of a methodology. Some of these factors include:

- Corporate strategy
- Complexity and size of the projects in the portfolio
- Management's faith in project management
- Development budget
- Number of life cycle phases
- Technology requirements
- Customer requirements
- Training requirements and costs
- Supporting tools and software costs

Project management methodologies are created around the project management maturity level of the company and the corporate culture. If the company is reasonably mature in project management and has a culture that fosters cooperation, effective communication, teamwork, and trust, then a highly flexible methodology can be created based upon guidelines, forms, checklists, and templates. As stated previously, the more flexibility that is added into the methodology, the greater the need for a family of metrics and KPIs. Project managers can pick and choose the parts of the methodology and metrics that are appropriate for a particular client. Organizations that do not possess either of these two characteristics rely heavily upon methodologies constructed with rigid policies and procedures, thus creating significant paperwork requirements with accompanying cost increases, and removing the flexibility that the project manager needs to adapt the methodology to the needs of a specific client. These rigid methodologies

5. Ibid., p.66.

usually rely upon time and cost as the only metrics and can make it nearly impossible to determine the real status of the project.

Jason Charvat describes these two types as light methodologies and heavy methodologies.⁶

Light Methodologies

Ever-increasing technological complexities, project delays, and changing client requirements brought about a small revolution in the world of development methodologies. A totally new breed of methodology—which is agile, adaptive, and involves the client every part of the way—is starting to emerge. Many of the heavyweight methodologists were resistant to the introduction of these “lightweight” or “agile” methodologies (Fowler, 2001⁷). These methodologies use an informal communication style. Unlike heavyweight methodologies, lightweight projects have only a few rules, practices, and documents. Projects are designed and built on face-to-face discussions, meetings, and the flow of information to the clients. The immediate difference of using light methodologies is that they are much less documentation-oriented, usually emphasizing a smaller amount of documentation for the project.

Heavy Methodologies

The traditional project management methodologies (i.e., SDLC approach) are considered bureaucratic or “predictive” in nature and have resulted in many unsuccessful projects. These heavy methodologies are becoming less popular. These methodologies are so laborious that the whole pace of design, development and deployment slows down—and nothing gets done. Project managers tend to predict every milestone because they want to foresee every technical detail (i.e., software code or engineering detail). This leads managers to start demanding many types of specifications, plans, reports, checkpoints, and schedules. Heavy methodologies attempt to plan a large part of a project in great detail over a long span of time. This works well until things start changing, and the project managers inherently try to resist change.

Frameworks

More and more companies today, especially those that wish to compete in the global marketplace as a business solution provider, are using frameworks rather than methodologies.

6. Ibid, pp.102–104.

7. Martin Fowler, *The New Methodology, Thought Works*, 2001. Available at www.martinfowler.com/articles.

- **Framework:** The individual segments, principles, pieces or components of the processes needed to complete a project. This can include forms, guidelines, checklists, and templates.
- **Methodology:** The orderly structuring or grouping of the segments or framework elements. This can appear as policies, procedures, or guidelines.

Frameworks focus on a series of processes that must be done on all projects. Each process is supported by a series of forms, guidelines, templates, checklists, and metrics that can be applied to a particular client's business needs. The metrics will be determined jointly by the project manager, the client, and the various stakeholders.

As stated previously, a methodology is a series of processes, activities, and tools that are part of a specific discipline, such as project management, and designed to accomplish a specific objective. When the products, services, or customers have similar requirements and do not require significant customization, companies develop methodologies to provide some degree of consistency in the way that projects are managed. With these methodologies, the metrics, once established, usually remain the same for every project.

As companies become reasonably mature in project management, the policies and procedures are replaced by forms, guidelines, templates, and checklists. This provides more flexibility for the project manager in how to apply the methodology to satisfy a specific customer's requirements. This leads to a more informal application of the project management methodology, and significantly more metrics are now required.

Today, this informal project management approach has been somewhat modified and called a framework. A framework is a basic conceptual structure that is used to address an issue, such as a project. It includes a set of assumptions, project-specific metrics, concepts, values, and processes that provide the project manager with a means for viewing what is needed to satisfy a customer's requirements. A framework is a skeletal support structure for building the project's deliverables.

Frameworks work well as long as the project's requirements do not impose severe pressure upon the project manager. Unfortunately, in today's chaotic environment, this pressure appears to be increasing because:

- Customers are demanding low-volume, high-quality products with some degree of customization.
- Project life cycles and new product development times are being compressed.
- Enterprise environmental factors are having a greater impact on project execution.
- Customers and stakeholders want to be more actively involved in the execution of projects.

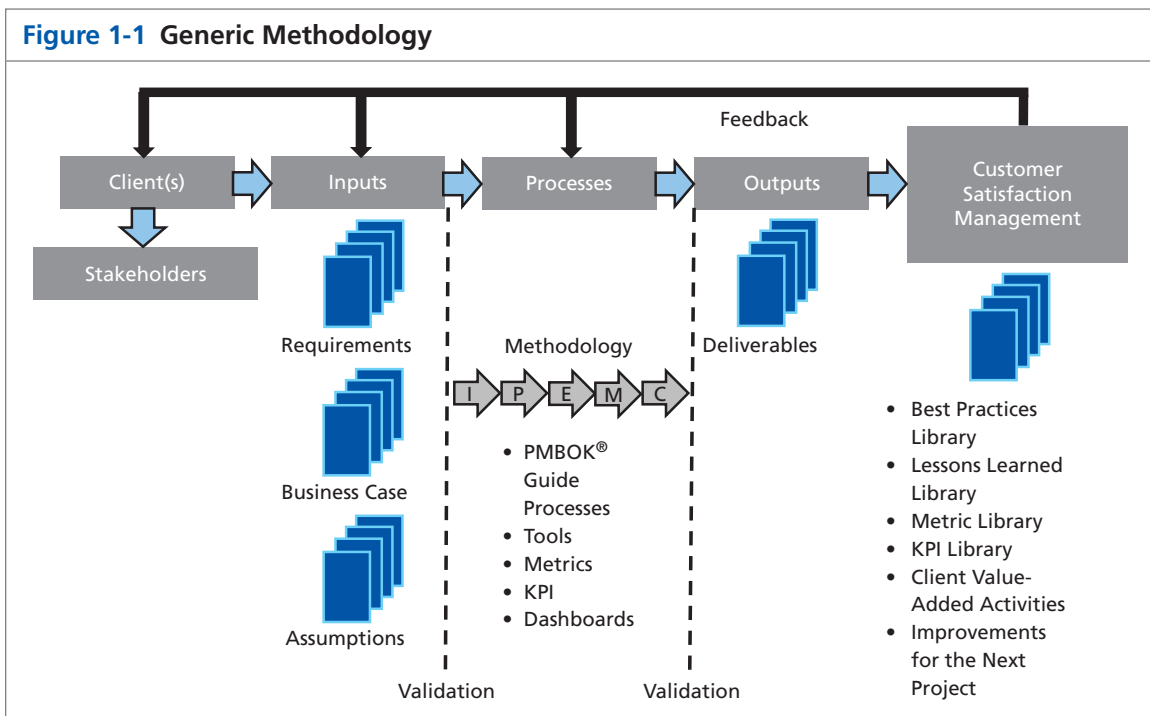
- Companies are developing strategic partnerships with suppliers, and each supplier can be at a different level of project management maturity.
- Global competition has forced companies to accept projects from customers that are all at a different level of project management maturity.

These pressures tend to slow down the decision-making processes at a time when stakeholders want the processes to be accelerated. This slowdown is the result of:

- The project manager being expected to make decisions in areas where he/she has limited knowledge.
- The project manager hesitating to accept full accountability and ownership for the projects.
- Excessive layers of management being superimposed on the project management organization.
- Risk management is being pushed up to higher levels in the organizational hierarchy.
- The project manager demonstrates questionable leadership ability.

Both methodologies and frameworks are mechanisms by which we can obtain best practices and lessons learned in the use of metrics and KPIs. Figure 1-1 illustrates the generic use of a methodology or framework.

Figure 1-1 Generic Methodology



Once we identify the clients and stakeholders, we then input the requirements, business case, and accompanying assumptions. The methodology then guides us through the *PMBOK® Guide* process groups of initiation (I), planning (P), execution (E), monitoring and controlling (M), and closure (C). The methodology also provides us with guidance in the identification of metrics, KPIs and dashboard reporting techniques for a particular client.

Some people believe that, once the deliverables are provided to the client and project closure takes place, the project is completed. This is not the case. More companies today are adding, at the end of the life cycle phases of the methodology, another life cycle phase, entitled “Customer Satisfaction Management.” The purpose of this phase is to meet with the client and the stakeholders and discuss what was learned on the project regarding best practices, lessons learned, metrics, and KPIs. The intent is to see what can be done better for that client on future projects. Today, companies maintain metric and KPI libraries the same way that they maintain libraries for best practices and lessons learned.

1.5 THE NEED FOR EFFECTIVE GOVERNANCE

The problems described previously can be resolved by using effective project governance. Project governance is actually a framework by which decisions are made. Governance relates to decisions that define expectations, accountability, responsibility, the granting of power, or the verifying of performance. Governance relates to consistent management, cohesive policies, processes, and decision-making rights for a given area of responsibility. Governance enables efficient and effective decision making to take place.

Every project can have different governance, even if each project uses the same enterprise project management methodology. The governance function can operate as a separate process or as part of project management leadership. Governance is not designed to replace project decision making but to prevent undesirable decisions from being made. Effective governance must be supported by a good project management information system (PMIS). The PMIS must have agreed upon metrics and key performance indicators such that informed decision-making is possible rather than seat-of-the-pants decision-making.

SITUATION: At the onset of a project, the governance committee agreed to make certain decisions to assist the project manager. Unfortunately, metrics were not established to support the governance committee. The result was a schedule slippage and a cost overrun due to delayed decision-making.

Historically, governance was provided by the project sponsor. Today, governance is provided by a committee. The membership of the committee can change from project to project and industry to industry. The

membership may also vary according to the number of stakeholders and whether the project is for an internal or external client.

1.6 ENGAGEMENT PROJECT MANAGEMENT

With project management viewed as a strategic competency today, it is natural for companies that wish to compete in a global marketplace to be strong believers in “engagement project management” or “engagement selling.” Years ago, the sales force would sell a product or services to a client and then move on to find another client. Today, the emphasis is on staying with the clients and looking for additional work from the same clients.

In a marital context, an engagement can be viewed as the beginning of a lifelong partnership. The same holds true with engagement project management. Companies like IBM and Hewlett-Packard no longer view themselves as selling products or services. Instead, they see themselves as business solution providers for their clients, and you cannot remain in business as a business solution provider without having superior project management capability.

As part of engagement project management, you must convince the client that you have the project management capability to provide solutions to their business needs on a repetitive basis. In exchange for this, you want the client to treat you as a strategic partner rather than as just another contractor. This is shown in Figure 1-2.

Previously, we stated that those companies that wish to compete in a global environment must have superior project management capability. This capability must appear in the contractor’s response to a request for proposal issued by the client. Clients today are demanding the following in their proposal:

- Show us the number of PMP®s in your company and identify which PMP® will manage this contract if you are the winner through competitive bidding.
- Show us that you have an enterprise project management methodology or framework, and that it has a history of providing repeated successes.

Figure 1-2 “Engagement” Project Management

Customer’s Expectations

Business
Solutions



Contractor’s Expectations

Long-Term
Strategic
Partnerships

- Show us that you are willing to customize the framework or methodology to fit the client’s environment.
- Show us the maturity level of project management in your company and identify which project management maturity model you used to perform the assessment.
- Show us that you have a best practices library for project management and your willingness to share this knowledge with us, as well as the best practices you discover on our project.

Decades ago, the sales force (and marketing) had very little knowledge about project management. The role of the sales force was to win contracts, regardless of the concessions that had to be made. The project manager then “inherited” a project with an underfunded budget and an impossible schedule. Today, sales and marketing must understand project management and be able to sell it to the client as part of engagement selling. The sales force must sell the company’s project management methodology or framework and the accompanying best practices. Sales and marketing are now involved in project management.

Engagement project management benefits both the buyer and the seller, as shown in Table 1-5.

The benefits of engagement project management are clear:

- Both the buyer and the seller save on significant procurement costs by dealing with single-source or sole-source contracts without having to go through a formalized bidding process for each project.
- Because of the potential long-term strategic partnership, the seller is interested in the lifetime value of the business solution rather than just the value at the end of the project.
- You can provide lifelong support to your client as they try to develop value-driven relationships with their clients.
- The buyer will get access to many of the project management tools used by the seller. The corollary is also true.

TABLE 1-5 Before and after Engagement Project Management

| BEFORE ENGAGEMENT PROJECT MANAGEMENT | AFTER ENGAGEMENT PROJECT MANAGEMENT |
|---|---|
| Continuous competitive bidding | Sole-source or single-source contracting (fewer suppliers to deal with) |
| Focus on the near-term value of the deliverable | Focus on the lifetime value of the deliverable |
| Contractor provides minimal lifetime support for clients with their customers | Contractor provides lifetime support for customer value analyses (CVA) and customer value measurement (CVM) |
| Utilize one inflexible system | Access to contractor’s many systems |
| Limited metrics | Use of the contractor’s metrics library |

1.7 OTHER DEVELOPMENTS IN PROJECT MANAGEMENT

For companies to be successful at managing complex projects on a repetitive basis and function as a solution provider, the project management methodology and accompanying tools must be fluid or adaptive. This means that you may need to develop a different project management approach when interfacing with each stakeholder, given the fact that each stakeholder may have different requirements and expectations, and the fact that most complex projects have long time spans. Figure 1-3 illustrates some of the new developments in project management. This applies to both traditional and nontraditional projects.

The five items in the figure fit together when done properly.

- **New Success Criteria:** At the initiation of the project, the project manager will meet with the client and the stakeholders to come to stakeholder agreements on what constitutes success on the project. Initially, many of the stakeholders may have their own definition of success, but the project manager must forge an agreement, if possible.
- **Key Performance Indicators:** Once the success criteria are agreed upon, the project manager and the project team will work with the stakeholders to define the metrics and key performance indicators that each stakeholder wishes to track. It is possible that each stakeholder will have different KPI requirements.

Figure 1-3 New Developments in Project Management



- **Dashboard Design:** Once the KPIs are identified, the project manager, along with the appropriate project team members, will design a dashboard for each stakeholder. Some of the KPIs in the dashboards will be updated periodically, whereas others may be updated on a real-time basis.
- **Measurement:** Updating the dashboards and the KPIs requires measurement. This is the hardest part because not all team members or strategic partners may have the capability or skills to measure all of the KPIs.
- **Governance:** Once the measurements are made, critical decisions may have to be supervised by the governance board. The governance board can include key stakeholders, as well as stakeholders who are functioning just as observers.

1.8 A NEW LOOK AT DEFINING PROJECT SUCCESS

The ultimate purpose of project management is to create a continuous stream of project successes. This can happen provided that you have a good definition of “success” on each project.

SITUATION: Many years ago, as a young project manager, I asked a vice president in my company, “What is the definition of success on my project?” He responded, “The only definition in this company is meeting the target profit margin in the contract.” I then asked him, “Does our customer have the same definition of success?” That ended our conversation.

For years, customers and contractors were each working toward different definitions for success. The contractor focused on profits as the only success factor, whereas the customer was more concerned with the quality of the deliverables. As project management evolved, all of that was about to change.

Success Is Measured by the Triple Constraints

The triple constraints can be defined as a triangle with the three sides representing time, cost, and performance (which may include quality, scope, and technical performance). This was the basis for defining success during the birth of project management. This definition was provided by the customer, where cost was intended to mean within the contracted cost. The contractor’s interpretation of cost was profit.

Customer Satisfaction Must Be Considered As Well

Managing a project within the triple constraints is always a good idea, but the customer must be satisfied with the end result. A contractor can complete a project within the triple constraints and still find that the customer is

unhappy with the end result. So, we have now placed a circle around the triple constraints, entitled “customer satisfaction.” The president of an aerospace company stated, “The only definition of success in our business is customer satisfaction.” That brought the customer and the contractor a little closer together. Aerospace and defense contractors were incurring large cost overruns, and it was almost impossible to define success according to the triple constraints. Numerous scope changes were initiated by both the customer and the contractor. Because the scope changes were numerous, the only two metrics used on projects were related to time and cost. Success, however, was measured by follow-on business, which was an output of customer satisfaction.

Other (or Secondary) Factors Must Be Considered As Well

SITUATION: Several years ago, I met a contractor that had underbid a job for a client by almost 40 percent. When I asked them why they were willing to lose money on the contract, they responded, “Our definition of success on this project is being able to use the client’s name as a reference in our sales brochures.”

There can be secondary success factors that, based upon the project, are more important than the primary factors. These secondary factors 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 now end up being more important than the primary factors of the triple constraints.

Success Must Include a Business Component

By the turn of the century, companies were establishing project management offices (PMOs). One of the primary activities for the PMO was to make sure that each project was aligned to strategic business objectives. The definition of success, thus, included a business component as well as a technical component. As an example, consider the following components included in the definition of success provided by a spokesperson from Orange Switzerland:⁸

- The delivery of the product within the scope of time, cost, and quality characteristics
 - The successful management of changes during the project life cycle
 - The management of the project team
 - The success of the product against criteria and target during the project initiation phase (e.g., adoption rates, ROI, ...)

8. Kerzner, H., *Project Management Best Practices; Achieving Global Excellence*, Hoboken, NJ: John Wiley & Sons Publishers, 2006, pp.22-23.

As another example, consider the following provided by Colin Spence, project manager/partner at Convergent Computing (CCO):⁹

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

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 them 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.

Our definition of the role of the project manager also changed. Project managers were managing part of a business rather than merely a project, and they were expected to make sound business decisions as well as project decisions. There must be a business purpose for each project. Each project is expected to make a contribution of business value to the company when the project is completed.

Prioritization of Success Constraints May Be Necessary

Not all project constraints are equal. The prioritization of constraints is performed on a project-by-project basis. Sponsors' involvement in this decision is essential. Secondary factors are also considered to be constraints and may be more important than the primary constraints. For example, years ago, at Disneyland and Disney World, the project managers designing and building the attractions at the theme parks had six constraints:

- Time
- Cost
- Scope
- Safety
- Aesthetic value
- Quality

At Disney, the last three constraints, those of safety, aesthetic value, and quality, were considered locked in constraints that could not be altered during tradeoffs. All tradeoffs were made on time, cost, and scope.

The importance of the components of success can change over the life of the project. For example, in the initiation phase of a project, scope may be the

9. Ibid. p.23.

critical factor for success, and all tradeoffs are made on the basis of time and cost. During the execution phase of the project, time and cost may become more important, and then tradeoffs will be made on the basis of scope.

SITUATION: The importance of the components of success at a point in time can also determine how decisions are made. As an example, a project sponsor asked a project manager when the project's baseline schedules will be prepared. The project manager responded, "As soon as you tell me what is most important to you, time, cost, or risk, I'll prepare the schedules. I can create a schedule based upon least time, least cost, or least risk. I can give you only one of those three in the preparation of the schedule." The project sponsor was somewhat irate because he wanted all three. The project manager knew better, however, and held his ground. He told the sponsor that he would prepare one and only one schedule, not three schedules. The project sponsor finally said, rather reluctantly, "Lay out the schedule based upon least time."

Previously we stated that the definition of project success has a business component. That's true for both the customer and contractor's definition of success. Also, each project can have a different definition of success. There must be upfront agreement between the customer and the contractor at project initiation or even at the first meeting between them on what constitutes success at the end of or during the project. In other words, there must be a common agreement on the definition of success, especially the business reason for working on the project.

TIP The definition of success must be agreed upon between the customer and the contractor.

The Definition of Success Must Include a "Value" Component

We stated previously that there must be a business purpose for working on a project. Now, however, we understand that, for real success to occur, there must be value achieved at the completion of the project. Completing a project within the constraints of time and cost does not guarantee that business value will be there at the end of the project. In the words of Warren Buffett, one of the world's most successful investors and chairman and CEO of Berkshire Hathaway, "Price is what you pay. Value is what you get."

One of the reasons why it has taken us so long to include a value component in the definition of success is that it is only in the last several years we have been able to develop models for measuring the metrics to determine the value on a project. These same models are now being used by PMOs in selecting a project portfolio that maximizes the value the company

will receive. Also, as part of performance reporting, we are now reporting metrics on time at completion, cost at completion, value at completion, and time to achieve value.

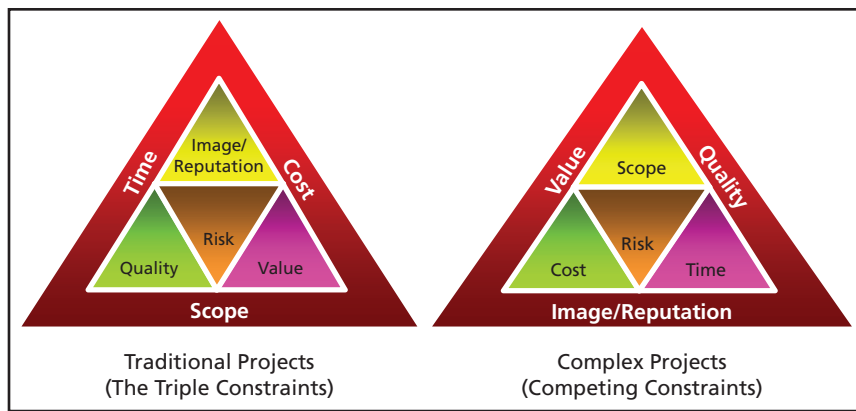
Determining the value component of success at the completion of the project can be difficult, especially if the true value of the project cannot be determined until well after the project is completed. We may have to establish some criteria on how long we are willing to wait to assess the true value.

Multiple Components for Success

Today, we have come to the realization that there are multiple constraints on a project. We are now working on more complex projects, where the traditional triple constraints success factors are constantly changing. For example, in Figure 1-4, for traditional projects, time, cost, and scope may be a higher priority than the constraints within the triangle. However, for more complex projects, this is reversed.

The fourth edition of the *PMBOK® Guide* no longer uses the term “triple constraints.” Because there can be more than three constraints, we are now using the term “competing constraints,” where the exact number of success constraints and their relative importance can change from project to project. What is important is that metrics must be established for each constraint on a project. However, not all of the metrics on the constraints will be treated as key performance indicators.

Figure 1-4 From Triple to Competing Constraints



The Future

So, what does the future look like? The following list is representative of some of the changes that are now taking place:

- The project manager will meet with the client at the very beginning of the project and they will come to an agreement on what constitutes project success.
- The project manager will meet with other project stakeholders and get their definition of success. There can and will be multiple definitions of success for each project.
- The project manager, the client, and the stakeholders will come to an agreement on what metrics they wish to track to verify that success will be achieved. Some metrics will be treated as key performance indicators.
- The project manager, assisted by the PMO, will prepare dashboards for each stakeholder. The dashboards will track each of the requested success metrics in real time, rather than relying on periodic reporting.
- At project completion, the PMO will maintain a library of project success metrics that can be used on future projects.

In the future, we can expect the PMO to become the guardian of all project management intellectual property. The PMO will create templates to assist project managers in defining success and establishing success metrics.

1.9 CONCLUSIONS

The future of project management may very well rest in the hands of the solution providers. These providers will custom-design project management frameworks and methodologies for each client and possibly for each stakeholder. They must be able to develop metrics that go well beyond the current *PMBOK® Guide* and demonstrate a willingness to make business decisions as well as project decisions. The future of project management looks quite good, but it will be a challenge.