

# Financially Focused Project Management

A close-up photograph of a stack of US coins, including a quarter and a dime, resting on a US dollar bill. The bill features the text 'FEDERAL RESERVE NOTE' and 'UNITED STATES OF AMERICA'. The image is used as a background for the book cover.

Thomas M. Cappels

# Financially Focused Project Management

Thomas M. Cappels



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# FOREWORD

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As we move through the 21<sup>st</sup> century, it has become even more important than ever to monitor the bottom line. This, of course, calls for knowledgeable management teams to address the many financial, quality, ethical, and stakeholder-related issues that face domestic and global organizations today and tomorrow. Further, in the wake of the blunders of organizations such as Enron, WorldCom, and others, it is imperative that proven quality management and financially focused techniques be instilled into an organization's culture.

As is the case today, the "New Economy" is providing organizations with many challenges. These challenges include — but are not limited to — downsizing, increased global competition, and managing change. In order to ensure that a substantive portion of a project is delivered on time, within budget, and meets customer requirements, an organization must now employ proven financially focused project management tools and techniques. Moreover, the project manager of the 21<sup>st</sup> century must have a varied skill set. The project manager of today must be able to identify a problem, frame the problem, seek alternatives, choose the best alternative, and implement the solution.

These skills are a necessity and must be obtained through formal education, seminars, and on-the-job training. This book is a valuable piece of the puzzle as a reference for obtaining these skills. In fact, as in his other publications, the author, Tom Cappels, provides a wealth of information on the topics of project management, quality, and financially focused measurement and analysis. He has worked hard to ensure that the book is not just another look at project management, quality, and financial analysis, but an in-depth look at how these functions can work together to ensure project success.

As a former journeyman of Lockheed Martin Missiles and Space, he has a very impressive track record. Furthermore, his proven techniques saved Lockheed Martin millions of dollars and aided in efficient project management functions. In addition, as an educator, he is in touch with the pedagogical

requirements of writing a text for today's student, whether it is at a traditional or nontraditional institution of higher learning. His ability to make practical use of these techniques is what makes the book a success.

I would also like to say that having worked directly with Tom, he is a very experienced, knowledgeable, and dedicated project manager, educator, and quality guru. He is continually updating his skill set by keeping abreast of the latest trends and even starting some trends himself. So, it is my privilege to recommend this book for its exceptional topical coverage of key project management concepts and practices.

*Robert W. Key  
MAEd, MBA, PMP  
University of Phoenix*

# PREFACE

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Project management is described as the formal usage of principles and methods in the planning and control of projects. Although this definition emphasizes formality, it should also emphasize the goal of effective project management: *profitability*.

In today's highly competitive global economy, bottom line financial performance has become more important than ever. Rightsizing and technology improvements created efficiencies and productivity enhancements that led to lower costs and improved earnings, but the aftermath of September 11 and continued distrust of corporate executive management have reinforced and heightened expectations on the part of shareholders, investors, and lenders to unprecedented levels.

When a company fails to meet Wall Street's earnings expectations, even by a few cents, the stock is often savagely punished by the market. In today's world, understanding the bottom line and the importance of increasing shareholder value is not just a requirement for the finance organization; it is a prerequisite for all employees and disciplines within a company.

A recent article in the *Business Times*<sup>1</sup> discusses how project management leadership has become a highly sought-after skill. The increasingly competitive global marketplace demands that businesses complete new projects, services, and business developments quickly, on time, and within budget.

No businesses in the 21<sup>st</sup> century can escape these demands. Small companies, web-based businesses, and giant global corporations alike need project managers to fuel much of the successful development of exciting new business enterprises.

Project managers do this by delivering projects that have consistent value and help increase profits. Talented, educated, and knowledgeable project managers are the business leaders, entrepreneurs, and global citizens of tomorrow, proving their value to any organization competing in today's fast-paced marketplace.



Regardless of how much demand there is, good project managers are not born, but rather are created through a combination of education, experience, time, and talent. The fast-changing technology available today further complicates matters as plans become obsolete or outdated with ever-increasing speed.

Thus, a good project manager must not only be proficient at managing, he or she must retain that proficiency as the circumstances change. Fast-speed adaptability is not an option, but rather an absolute requirement of the job.

Clearly, the job of “project manager” is not for the faint-of-heart. When faced with a first project, many project managers are worried that they do not yet know what they should know.

Historically, project management had a reputation for always being late and over budget. Even under the best of circumstances, project management is not easy. The project manager is continually faced with changing conditions, technology, resources, requirements, and schedules.

Good preparation and knowledge about what the job entails are hugely valuable and key to the success of the project. Outstanding organization skills are a prerequisite for the project manager, but so are other key attributes, such as the *financially focused mindset*,<sup>2</sup> which also needs to be developed.

In the past, most of this development occurred on the job, so few individuals who were promoted to the role of project manager ever felt fully ready to take on the challenges offered to them.

The imperative for successful implementation of every project that a company undertakes must remain at the forefront of the project manager’s objectives. After all, managing projects that lead to providing customers the value they are seeking is the key to long-term business success and a major determinant in beating the competition.

The challenge that companies face today is how to focus their businesses on producing quality products, while at the same time achieving the bottom line performance that shareholders and the investment community demand. It is exactly this challenge that financially focused project management (FFPM) tackles head on.

This text formally introduces FFPM to the academic and business worlds. The FFPM management science has been evolving over the years at such companies as Lockheed Martin Missiles and Space and Litton Applied Technology and has been documented to save these companies millions of dollars.

FFPM takes the latest project management tools one critical step further by ensuring an education that offers the inclusion of a thorough financial viewpoint at the beginning of a project. This allows the integration of cost recognition in each step of the process.

This book presents methodologies for company-wide and scholastic education on key financial considerations. Project management principles are clearly

presented. Related basic financial concepts are explained. The FFPM elements and their use in making and implementing business decisions are introduced. Case studies are presented that show successful FFPM applications. Readers will be equipped to implement FFPM in their work environments, offering the prospect of improving the translation of project implementation to the bottom line.

- FFPM successfully couples formal and professional education with the hard knocks of the real business world.
- The approaches presented result from benchmarking the best practices of hundreds of companies. Hundreds of millions of dollars have been saved, and billions more will be, as the worlds of project management and finance unite.

FFPM provides business and project management professionals with a financial foundation in the form of the basic business concepts that are vital for success in the 21<sup>st</sup> century. FFPM offers terms, definitions, and instructions that will enable these professionals to talk the talk and walk the walk of FFPM.

FFPM effectively deals with one of the greatest challenges that businesses face today. It helps all members of the working class, from board members to first-line employees alike, to better understand the relationship and balance between managing projects and meeting the demanding challenges of the bottom line. Our futures depend on it.



# THE AUTHOR

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**Thomas M. Cappels** is the Controller for the San Mateo County (California) Office of Education and also serves as an Adjunct Professor and course developer for the University of Phoenix. He has over 20 years of industrial and financial management with Lockheed Martin, serving as a project manager on such prestigious programs as the Hubble Space Telescope and Space Station Freedom. Educated at the University of California at Los Angeles (UCLA) and San Jose State University (SJSU), he has earned his BA and MBA. With over 100 publications, he has authored texts on quality control, product liability, and financial administration.

As a project manager, Tom Cappels experienced the evolution of quality and project management firsthand. He lived the life of statistics, quality circles, suggestion systems, awards, MRP2, total quality management, and executive management proclamations. He stays in tune as a member, author, speaker, and former officer for the American Society for Quality. He has seen how an analytical, prudent, and informed financial viewpoint can reap tremendous benefits. Tom Cappels accentuates his years of hands-on project management and financial experience as a graduate-level project management and finance professor and is President of the International CA-VIA. He has built his reputation through 30+ years of studies and publications, which culminate here in *Financially Focused Project Management*.





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Downloads available for *Financially Focused Project Management* consist of PowerPoint slides, a project management software guide, and an extensive glossary of project management terms.



# UPDATE ON PROJECT MANAGEMENT

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## INTRODUCTION

You are a contestant playing the television game show “Wheel of Fortune.” You have had pretty good luck so far, winning the preliminary rounds, and advancing to the final spin.

“We know you’ve got a lot of fans out there in the studio audience.” Pat Sajak is as charming as ever. “They’ll all be rooting for you as we take a look at the final puzzle!”

Vanna White glides onto the stage, wearing a gorgeous Versace gown, as the following puzzle appears:

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“The category is Business Buzzwords.” announces Pat. “And now let’s see those letters R, S, T, L, N, and E. There’s a little something there. Might be a good start for you.”

As Vanna walks, the letters magically appear:

\_ \_ N \_ N \_ \_ \_ L L \_ \_ \_ \_ S E \_

\_ R \_ \_ E \_ T \_ \_ \_ N \_ \_ E \_ E N T



You like what you see so far, and already have an idea for the answer.

“What letters would you like to add?” questions Pat.

You hesitate, but only for a moment. “Pat...I’d like an M, G, an F, and the letter A!”

“I think you are going to like what happens when we add those letters!” approves Pat. “Vanna, are there any Ms, Gs, Fs, or As?”

A few members of the audience gasp as the letters begin to appear, and when the last letter is added, the audience bursts into applause.

F \_ N A N \_ \_ \_ L L \_ F \_ \_ U S E \_  
\_ R \_ \_ E \_ T M A N A G E M E N T

Pat cautions the audience with “No help, please.” Then he turns to you with resigned anticipation. “I think you know it....”

“Do I ever!” you exclaim. “It’s Financially Focused Project Management!” The puzzle fills in with the answer.

F I N A N C I A L L Y F O C U S E D  
P R O J E C T M A N A G E M E N T

“Of course that’s right,” Pat says, shaking his head. As he begins to open the prize envelope he adds, “Let’s see what you won....”

Even Pat looks surprised as he shows you the award — \$150 million cash! You are instantly surrounded by family members running down from the audience. Even Vanna gives you a big hug.

“Financially Focused Project Management,” says Pat knowingly. “Don’t go away. We’re taking a short break.”

Thank goodness you work for a company that recognizes the need to focus fully on the financial aspects of project management activities. The recent company-sponsored training you attended put financially focused project management (FFPM) in the forefront of your mind. FFPM is the next step in the evolution of the project management science.

## EVOLUTION OF THE PROJECT MANAGEMENT SCIENCE

The science of project management has been evolving at an ever-increasing pace since the turn of the 19<sup>th</sup> century. Denise Romberg<sup>3</sup> notes that, despite sophisticated software, half of all projects are delivered late or over budget. A

classic case of poor project management is Casa Loma, a 98-room estate built in Toronto, Canada, for Sir Henry Mill Pellatt, a wealthy, decorated military hero. Begun in 1911, Casa Loma took 3 years, 300 men, and \$3 million of imported materials to complete.

When the project was finished 3 years later, Pellatt was nearly bankrupt! His odds of completing the project on schedule and on budget would have been greatly increased had he employed any number of the many project management tools, systems, computer programs, and philosophies available today.

He also could have come in on schedule and under budget had he established a much more lenient schedule and a much higher budget!

But the fact remains, had Pellatt's project manager made use of current systems and technology, he may have more readily anticipated the problems and reacted more quickly to situations leading to schedule delays and increased costs.

In the 1980s and 1990s, project management started to be viewed as a trend-setting business discipline used in budgeting and allocating resources. Around the time that mainframe computers began moving to Macs and PCs, the art of project management began to become a science. The technological advance in distributed computing revolutionized project management and permitted desktop users access to manipulating what-if scenarios. Teams of experienced operators once required to manage the most complex engineering and construction projects gave way to multiuser systems managing multiple projects in complex environments.

While word processing, spreadsheet, and presentation software dominate software sales, project management accounted for U.S. sales of \$900 million in 1999, and has been growing by 20% annually, according to the Gartner Group. Microsoft Project represents approximately a third of the market, outselling all other applications in this field.

Romberg<sup>4</sup> also offers that sophisticated software tools will not ensure project management success. She cites a 1998 benchmark survey performed by the Standish Group of Dennis, Massachusetts. This study found that project managers were successful in only 26% of the 23,000 projects surveyed; 46% of the projects were time and cost challenged and 28% were deemed failures. The survey found the retail industry enjoyed the best project results with 59% of projects successfully meeting deadlines, budgets, and user expectations. Health, financial, manufacturing, and software projects all achieved close to 30% or better success rates, while government projects were rated least successful at 18%.

Romberg suggested another approach to acquiring project management skills. This was a computer-based simulation environment entitled Project Challenge, developed by the creators of SimCity for use as an internal Systemhouse training tool and retail product. The game, offered at three levels of difficulty, creates a set of parameters, deliverables, and people to manage.

“If you are not successful in keeping up morale and delivering on time, you get yourself fired,” explained Jim Hughes, vice president of software development at SHL Systemhouse in Toronto.

Hughes worked on Project Challenge and now advises the Integrated Justice consortium, in which Systemhouse is the integrator, in a 5-year project aimed at improving communication and eliminating redundancy throughout Ontario’s justice system.

Hughes noted that the project actually consists of 6 projects that will team people from the combined ministries of the Attorney General and Solicitor General and accommodate about 300 points of integration. Hughes seemed to acknowledge that government projects do not fare as well as industry ones. The project payment schedule for the consortium deviates from the standard time and materials contract, “forcing us to discipline ourselves to deliver something that works or we don’t get paid,” Hughes explained.

## **EVOLUTION OF THE CORPORATE WORLD: WHERE IS TODAY’S CORPORATE FOCUS?**

The 1990s and early 21<sup>st</sup> century found most businesses retreating to short-term emphasis on profits.

Today’s corporate culture continues to embrace the latest trends in project management. Just a few of such trends are listed below, all of which are discussed in this text.

- Project management office
- Portfolio management
- FFPM
- Human aspects of project management
- Network of relationships
- Virtual teams
- Work package to network
- Responsibility matrix (planning and resource management)
- Resource plan
- Task duration table
- Project network diagram
- Gantt (bar) chart
- Financially focused quality
- Knowledge management
- Activity-on-arrow network
- Activity-on-node network

- Arrow diagram method
- Balanced matrix
- Bar chart
- Groupthink

And while the focus of project management continues to evolve, projects continue to complete beyond schedule and over budget. Such results impact the bottom line, and it does not appear to be getting better. Companies are resorting to “re-engineering, restructuring, downsizing, and outsourcing.” While such actions will often reduce costs (exclusive of severance expenses) in the short term, other related impacts (e.g., substandard quality, increased training, decreased employee morale) can have significant negative impacts on profitability.

Listed below are just a few time periods in the recent past where dramatic head count reductions were made at major companies.

During in the fourth quarter of 1997, the following actions were taken:

- Citicorp (CCI) said it would dismiss 9,000 of its 90,000 employees worldwide as part of a massive restructuring designed to cut costs and improve the efficiency of back-office operations. The layoffs, which were to take place over 18 months, would be offset by the creation of 1,500 new jobs, bringing total cutbacks to 8.3% of the bank’s workforce.
- Silicon Graphics, Inc., the high-end graphic computer concern, announced it would be firing up to 1,000 workers.
- Fruit of the Loom gave 60-day layoff notices to nearly 4,200 Louisiana workers and another 1,035 in Kentucky, and announced it was closing its plant at Abbeville, Louisiana. This was part of a nationwide employment cutback in an effort to send more jobs to Central America, where there are more competitive wage levels.
- Cadbury Schweppes’s U.S. beverage unit, Dr. Pepper/Seven Up, Inc., announced it would cut 10% of its U.S. workforce, about 110 workers, by the end of 1998.
- Levi Strauss & Company, the blue jeans manufacturer, said it would shut down 11 of its 37 plants and cut 34% of its North American labor force. The layoffs at the clothing concern were expected to total 6,395 people out of a global workforce of 37,500.
- Imaging giant Eastman Kodak Company said it might cut 14,000 jobs, slash costs by as much as \$1.0 billion, consolidate several businesses, and expand joint ventures.
- Deutsche Bank AG announced plans to acquire Bankers Trust Corporation for \$10.1 billion, forming the world’s biggest financial-services company and promising to boost profits by cutting 5,500 jobs, or

5.7% of staff. One week later, Citigroup (formed by the merger of Citicorp and Travelers Group) announced that it would cut another 1,400 jobs, bringing the total to 10,400, or 6.5% of its workforce.

The Bloomberg News Service reported that U.S. companies announced more than 574,000 job cuts in the first 11 months of 1998. Rightsizing (e.g., downsizing and layoffs) continues. Virtually every company is now looking for new approaches to achieve financial goals. Restructuring, re-engineering, outsourcing, and rightsizing are popular terms being used in corporate boardrooms.

News stories running during 2002 and 2003 again reflected significant layoff actions, including the following:

- Navistar International Corp. announced it officially would make 1,100 layoffs, as the truck and engine manufacturer struggled to regain profitability.
- Boeing Wichita gave notices to the final 56 workers as officials said the company was nearing the twilight of a plan to eliminate up to 5,200 jobs in Wichita and 30,000 in the company's commercial airplanes division.
- IBM Corp. had laid off about 15,600 employees through the first half of the year — about 7,000 more than expected — according to filings with the U.S. Securities and Exchange Commission.
- WorldCom, Inc. began laying off 17,000 workers worldwide.
- Data storage company EMC Corp. reported a preliminary quarterly loss and revenue that were worse than expected and said it would cut 1,350 jobs due to dismal spending on technology.
- Fidelity Investments said it would lay off 1,695 employees, or 5.4% of its workforce, to cut costs.
- Bombardier announced layoffs of another 1,980 people from its aerospace division because of continuing weakness in the airline industry.
- SBC Communications, Inc. said it would eliminate 11,000 more jobs, or 6% of its workforce.
- Circuit City Stores announced plans to eliminate about 2,000 jobs, or 4.8% of its workforce, and absorb \$16 million in severance costs. The Richmond, Virginia-based consumer electronics chain also said it is converting to a single hourly pay structure for its store employees.
- Bank of America said in February 2003 that it would cut about 1,000 technology and operations jobs, or 1% of its workforce, to reduce costs, according to Bloomberg News Service. The Charlotte, North Carolina-based bank laid off about 900 such workers in November and December of 2002.

Obviously times are still tough. Many projects are put on hold until financial resources become available. When funding does exist, the key to successful project management is incorporating an educated financial focus in the process.

## FFPM

The next step in the evolution of the project management science leads to FFPM. Applying the tools and principles of FFPM with the latest project management concepts greatly enhances the opportunities for increased productivity and profitability, keeping projects on schedule and under budget.

Corporate executives justify cost-cutting measures by focusing on the cold cruel world of balance sheets and the bottom line. Head count reductions and other actions designed to improve the business are dictated and budgets are slashed prior to thoroughly understanding total impacts to profitability. It is now paramount that management, administrative, and technical employees everywhere understand from an educated, financial perspective how their activities and decisions affect the bottom line. FFPM offers the means to achieve this understanding.

## Total Improvement Management

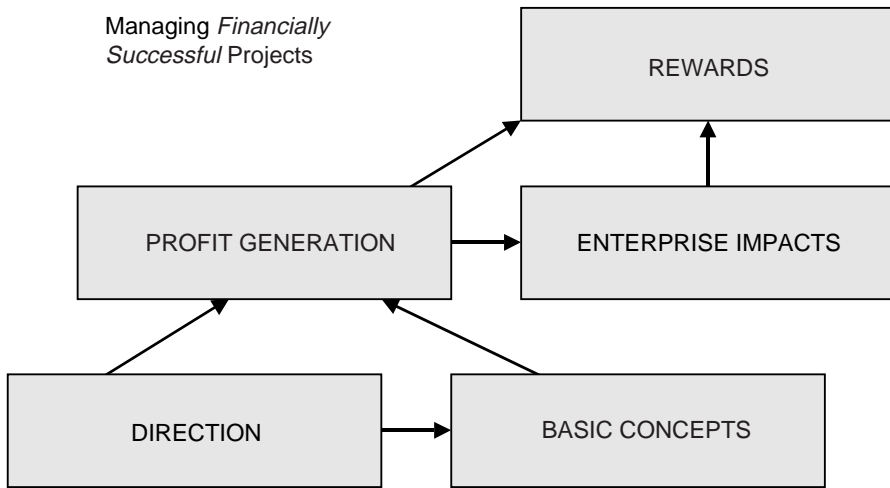
Total improvement management (TIM) was originated by a team of authors led by H. James Harrington, International Quality Advisor for Ernst & Young. TIM blends elements of total quality management, total productivity management, total cost management, total resource management, total technology management, and total business management methodologies.

At the heart of Harrington's model is the TIM pyramid, arranged as follows:

- Tier 1 — Direction: Top management leadership, business plans, environmental change plans, external customer focus, and quality management systems
- Tier 2 — Basic concepts: Management participation, team building, individual excellence, and supplier relations
- Tier 3 — Delivery process: Process breakthrough, product processes, and service process
- Tier 4 — Organizational impact: Measurements, organizational structure
- Tier 5 — Rewards and recognition

## The Financially Focused Blueprint

FFPM adds a new element to the TIM pyramid, creating a modified design called the financially focused blueprint<sup>2</sup> (Figure 1.1) for total enterprise success.




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**FIGURE 1.1.** Financially Focused Blueprint. (Reprinted with permission from Cappels, T.M., *Financially Focused Quality*, CRC Press, 1999. Copyright CRC Press, Boca Raton, Florida.)

The major addition is educational training and other FFPM tools to ensure that all improvement activities are performed with the financially focused mindset. Also, while in the middle of the TIM pyramid are the processes by which products are delivered, the financially focused blueprint labels this component “profit generation.” After all, the processes can run as beautifully as possible, but if they do not generate profits, the business will not operate for very long.

Brief descriptions of financially focused blueprint components are presented below.

### ***Component #1 — Direction***

The primary purpose of a for-profit enterprise is to make money. Top management must establish systems and exercise the leadership skills to accomplish this purpose. Direction is exhibited in the following six elements.

1. The project manager: Direction begins with two-way communication of goals and expectations.
2. General management leadership: Leading is more than supplying the resources for the latest improvement process or latest technological gadget. It includes participating in the project design and being part of the process.
3. Business plans: Giving direction requires that business plans be completely thought out and communicated clearly to all employees.

4. Environmental change plans: Valid implementations of new processes will usually require changing the work environment. Successful FFPM necessitates a financially focused environment, achieved via financial training.
5. External customer focus: Profitable enterprises have an excellent understanding of, and a close working relationship with, their external customer/consumer.
6. Quality management systems (e.g., ISO 9000): Harrington calls these systems the “blocking and tackling” of the improvement process and the essential building blocks for the rest of the structure.

### ***Component #2 — Basic Concepts***

1. Management participation: Management’s active participation will be facilitated when management feels comfortable in its leadership role.
2. Team building: Synergies are achieved when employees unite in teams with common goals.
3. Individual excellence: Each employee must be motivated, empowered, and provided the proper tools (e.g., financial training) to make a difference and spark positive impacts.
4. Supplier relations (partnerships): Both the organization and its supply organizations should work together to achieve mutual success.

### ***Component #3 — Profit Generation***

Note that this is the only component that is linked to all the others. Profit generation is the central theme. The elements contained in this component are designed to generate profit through delivery of products and services.

1. Process breakthrough: Benchmarking, process improvement teams, just-in-time manufacturing, and outsourcing are just a few of the approaches utilized to improve processes and the output that its customers receive.
2. Product processes: The process in place to deliver products and manage projects to completion must operate at a peak level of excellence. This means the processes themselves are well designed and documented, and effort is undertaken to continually improve the product/project delivery process with a financially focused mindset.
3. Service process: The delivery process for services varies from the process for completion of projects and delivery of products. This element focuses on the design, documentation, and continual improvement of project management and the service delivery process with a financially focused mindset.



### ***Component #4 — Enterprise Impacts***

With the improvement process well underway, the next component of the financially focused blueprint is addressing how changes impact the enterprise. There are two elements to examine:

1. **Measurements:** Only when the improvement process documents positive measurable results can management be expected to embrace the newly implemented methodology as a way of life. This measurement process should apply the basic financial concepts touted by FFPM.
2. **Organizational structure:** Large organizations need to give way to small business units that can react quickly and effectively to changing business needs.

### ***Component #5 — Rewards and Recognition***

This component is the result of a well laid out financially focused blueprint. The employees are rewarded with job security and good pay. Employees and teams may also receive recognition with special awards and pats on the back. Company owners are rewarded with increasing profits, dividends, and stock value.

## **SELF-STUDY/DISCUSSION QUESTIONS**

1. Have you or someone you know been party to any layoff actions? Discuss.
2. How does the threat of layoffs affect a company and its employees?
3. What are some of the projects undertaken by your company?
4. What is the average cost of these projects?
5. Who were the customers (internal/external)?
6. Of projects with which you have been involved or of which you have been aware, which have finished on schedule? On budget? Both? Late? Over budget? Both?
7. Have you ever contracted for a major project in your home (e.g., swimming pool, addition of room, another story, another bathroom, kitchen remodel)? What was the outcome as far as schedule and budget? What lessons did you learn?
8. What are the components of the financially focused blueprint? Describe and discuss each as it applies to your place of work. Which is the most important? The least important?

# PROJECT MANAGEMENT OVERVIEW

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## INTRODUCTION

One of the very first projects in history to be documented was Noah's Ark.<sup>5</sup> This project had a very tight schedule with a dramatic incentive to stay on or ahead of schedule. The schedule was fairly simple: The ark had to be built before the flood. The consequences of delivering the project behind schedule include:

- Noah would lose his job.
- Every pair of animals intended to sail on the ark would drown.
- Noah and his family would drown.
- Mankind would be decimated, and no one would be alive today.

While terms of many contracts in the 21<sup>st</sup> century contain significant negative incentives for completing behind schedule and/or over budget, the terms of Noah's contract gave him perhaps the greatest incentive of all time to be on schedule.

## THE ENVIRONMENT OF PROJECT MANAGEMENT

A review of the case studies in the back of this book makes it clear that project management tools and techniques may be applied to a wide range of situations. The environment of project management includes the following:

- Virtually any business venture (e.g., setting up a lemonade stand or developing a missile defense system)
- Technological environment
- Socioeconomic environment
- Legal environment
- Business cycle environment
- Environmental impact of projects

## **Technological Environment**

It is amazing to consider all the technological advancements that have taken place over the last 10 years. The popularity of the Internet has certainly led to remarkable benefits to the project management field. It was reported that the Overland Park (Kansas) Public Works Department developed a web-based manual to guide city engineers and technicians through the administration process for capital improvement projects.<sup>6</sup> By using the manual, the city streamlined and standardized its project management procedures.

Development of the web-based manual was accomplished as follows:

1. The department first compiled a paper version of its project management procedures, few of which had ever been written down.
2. The manual documented the process for completing capital improvement projects, from conception through construction and inspection.
3. The manual also outlined project tasks to help engineers set and meet schedules.
4. The city management staff and the Kansas Department of Transportation approved the content of the manual.

The manual became available and the department began actively using it in the fourth quarter of 1997.

Soon after obtaining approval, the Public Works Department's computer management group, working with Kansas City, Missouri-based HNTB, incorporated the manual into an electronic project management system — Project Expert System. The software allowed users to search the manual and a comprehensive library of project documents by keywords.

Included in the project management software was a “wizard” that helped users develop project schedules. The wizard asked users a series of questions that coordinated directly with the procedures in the manual. By answering the questions, users generated project schedules with prepopulated task lines that saved engineering time and ensured projects follow approved procedures.

The computer management group did not stop there. They also added some

of their own enhancements to the software. For example, they expanded the program's capabilities to create a folder for each capital improvement project and subfolders corresponding to phases in the procedures manual.

Bob Lowry, director of the Public Works Department, was quoted to say, "The electronic manual has provided a great time-savings. By better managing a project from design through construction, we have more control over the schedule and cost. We have found that we can execute projects significantly faster than in the past, and time is money."

The project manager of the 21<sup>st</sup> century must be aware of every technological advancement and capability that could lead to similar savings on projects.

## **Socioeconomic Environment**

Project managers need to recognize that interactions with the environment often have far-reaching effects. Such interactions include, but are not limited to, such things as: (1) construction projects that alter the physical landscape, (2) establishing a theater complex in an urban shopping area, or (3) developing civilian radioactive waste management sites.

To go a step further, any of the following socioeconomic models can influence the activities of the project manager:

- Anarchism
- Capitalism
- Colonialism
- Communism
- Consumer lifestyle
- Control techniques
- Decentralization
- Democracy
- Economics
- Fascism
- Imperialism
- Militarism
- Multiculturalism
- Nationalism
- Neoliberalism
- Philosophy
- Populism
- Sneetchism
- Socialism
- World government

Consideration of a project's impact on the socioeconomics of its affected region may yield tremendous benefits, and substantial project interruptions may be avoided.

## **Legal Environment**

As with a project's socioeconomic environment, so too must allowances be made for the legal environment. The legal environment necessitates an understanding of the legal system.

- Social, ethical, and judicial foundations
- The nature of law and views on jurisprudence
- The relationship between law and ethics
- The framework of the U.S. legal system
- The creation and interpretation of law

The experienced project manager should be aware of potential trials and tribulations, such as:

- Resolving disputes in and out of court
- Types of courts and how they function
- Jurisdictional framework of the federal and state judicial systems
- How a civil case moves through the judicial system, from filing a complaint to collection of a judgment
- How "alternative dispute resolution" differs from "dispute resolution" in the judicial system

Other areas where an understanding of the legal environment could provide benefits include:

- Intentional torts
- Negligence and strict liability
- Business torts and employer liability
- Fraud
- Unfair competition
- Property and environmental torts
- Employer liability for the torts of employees and other agents
- Contract law, including legal and equitable remedies for breach of contract
- Uniform commercial code
- Consumer law
- Product liability
- Employment law, including workplace safety, job security, employment-at-will, individual employee rights, and employment discrimination

Lastly, the legal environment includes consideration for “doing the right thing: business ethics and social responsibility.”

## **Current Drivers**

The 21<sup>st</sup> century finds the science of project management continuing its evolution toward financial focus and profitability. The primary drivers effecting this evolution are (1) increased competitiveness, (2) speed of change, and (3) corporate resizing.

### ***Increased Competitiveness***

There is no doubt that the heat has been turned up as fierce competition unfolds among industry leaders. The following factors have led to increased competitiveness:

- **More skills:** More skills lead to increased competitiveness. Education, education, education, throughout the world! Policy makers are being persuaded that the route to economic advantage is through upskilling (i.e., improving employee skills). Increasingly, the rhetoric of global competition has been to push a policy agenda in which a highly skilled workforce becomes the linchpin of success.
- **Lower labor costs:** Many companies are outsourcing, or establishing manufacturing plants in areas with substantially lower labor costs. Lower labor costs allow the company to lower the price of its products and/or increase its profit margin.
- **Increasing productivity:** The first company to implement the latest technological advancements has an edge over its competition. State-of-the-art upgrades (e.g., MRP2 system implementation, just-in-time manufacturing) lead to lower manufacturing costs.

### ***Speed of Change***

The 21<sup>st</sup> century has brought about a new economy. Welcome to the new economy — a world where the rate of change is so rapid it is only a blur. There were no personal computers 25 years ago. Just 15 years ago, cell phones were a novelty, while the World Wide Web came into being less than 10 years ago. Today, many people cannot imagine doing business without cell phones, e-mail, or the global connectivity of the Internet.

Project managers have to stay on top of the latest developments to ensure their project has every possible advantage, enhancing the opportunity to come in on schedule and on budget.

## ***Corporate Resizing***

One of the big money savers talked about in corporate boardrooms 10 years ago was “downsizing,” which led to the more politically correct term “rightsizing.”

Rightsizing implied that, after performing a thorough analysis of the work to be done in a company, the head count would be adjusted either upward or downward to ensure the “right” or most efficient number of people were assigned to the tasks at hand. It appears that in every case in which rightsizing was employed, there was a reduction in head count (e.g., layoffs).

The next step in the evolution of the various “sizing” activities is “corporate resizing.” This term has been catching on worldwide, and expands the topic to include other unfortunate business activities. These activities are covered quite well in the December 2002 text titled *Resizing the Organization: Managing Layoffs, Divestitures, and Closings*.<sup>7</sup>

So there is downsizing, rightsizing, resizing. What is next? Some say *capsizing*, but time will tell.

## **MANAGING PROJECTS**

George Pitagorsky<sup>8</sup> offers considerable insight into the advantages of utilizing a well-founded project management approach. He has found that many organizations recognize the need for a formal approach to project management to improve their performance. It is important to realize that project management is both a science and an art.

Effective project management necessitates flexibility within structure. It is the formal application of principles and techniques to the planning and control of project work. This reference to it as formal means putting plans, decisions, objectives, requirements definitions, change requests, etc. in writing — clearly defining roles and responsibility to promote accountability and following a pre-established, repeatable process. Formality connotes discipline most effectively, self-disciplined adherence to structures that add value.

There have, however, been instances where the “formality aspect” can be taken too far. For example, one company was implementing an MRP2 system.<sup>9</sup> It utilized program management software and found itself identifying hundreds of very small work packages that were updated almost on a daily basis. As a result, hundreds of pages were being printed every week, and were outdated by the time they were distributed to project team members. The lesson to be learned here is that it is important to understand the benefits derived from *all* program management activities. A cost analysis (sometimes termed “cost–benefit trade-off”) should be performed when there is doubt about their value. Cost analyses are discussed in Chapter 12.

Pitagorsky offers some ancient wisdom about how to keep horses. If you put a horse in a tight pen, either it will kick its way out, or it will become too docile. If you keep the horse in an open, unfenced area, it will wander away. If you keep a horse in an area that gives it enough space to exercise and have a sense of freedom, it will be satisfied. When it reaches the fence it will turn and go in a different direction, because it is not worth the effort to jump the fence.

Project management disciplines work similarly. If the rules are too rigid, there will not be enough space for the adaptation that performers and managers need to succeed. If the rules are too loose, there is inefficiency. The goal is to strike the right balance — no excess, no insufficiency.

Formality without flexibility leads to bureaucracy. Bureaucracy is too costly and too slow for today's fast-moving, fast-changing world. Flexibility without formality is chaos. It is also too costly and inappropriate given the complexity and impact of projects.

Financially focused project management (FFPM) offers the tools to calculate and determine what is "too costly." Flexibility means that project managers must be able to tailor project management to the type of project being performed.

Balancing formality and flexibility allows for creativity, adaptation to undefined situations, and continuous improvement while having a clearly stated set of standards, procedures, and guidelines that promote best practices.

## Essential Definitions

### *Project Management*

Project management is distinct from project execution, which is specific to the project and results in the project's deliverables. Project management is performed to ensure that the project is optimally executed.

Project management ensures that:

- Goals, objectives, and acceptance criteria are defined.
- A plan is developed.
- The correct amount and type of resources are available.
- A formal plan is followed when work is performed.
- All activities are coordinated and designed to achieve a specific goal.
- Intermediate results are toward the original end result.
- Interested parties are informed of project performance.
- The original goal is the main target, which may be updated as required.
- The plan is adjusted to take into account unplanned circumstances.
- The final result is acceptable, and meets project expectations and specifications.



## ***Project Success***

Generally speaking, a successful project meets its objectives within time and budget constraints, while fulfilling the needs of stakeholders, including project sponsors, product users, product managers, product support people, project performers, and participants. Project sponsors and users should be satisfied that project results add value.

## ***Product***

A product is the result of a project. It might be a new or upgraded software product, a business process, or service. Product success depends on the usefulness and marketability of the product, typically related to reducing operating costs, improving customer service, making a profit, etc.

Project objectives should be measurable, linked to strategic initiatives, prioritized with respect to one another and the objectives of other projects, clearly understood by project stakeholders, and expressed as a few major objectives that may be subdivided into more detailed objectives.

## ***The Key to Success***

There is a tale about a wise, old, gentleman named Edgademer. One evening, he was on his hands and knees under the street lamp in front a friend's home in Las Vegas.

A jogger stopped by and asked him what he was doing. Edgademer gazed softly into the jogger's eyes. He explained, "I'm looking for my car keys. I dropped them as I was unlocking the door to my car."

The jogger, being a very helpful soul, dropped to his knees and assisted Edgademer in the search. Before long they had covered every inch of ground under the street lamp. After a while, the jogger asked, "Are you sure you dropped the keys here?" and was surprised when Edgademer whispered, "Oh, no, I dropped the keys over there on the front lawn. But it's very dark there, so I thought we could look here where the light is much better."

This story is intended to point out that if the light is not aimed in the right direction, it will be virtually impossible to achieve your goal. Even a comprehensive set of project management procedures will not solve problems that are rooted in inadequate judgment, interdepartmental warfare, lack of effective communications, illogical problem solving/decision making, fear- and blame-based politics, or any other common causes of project performance ills. Group dynamics, communication skills, and problem-solving processes should be examined. This is where many of the keys to successful project management are found.