
Chapter 1: Jump-Start Any Career with Project Management Skills

1.1 Careers Using Project Management Skills:

Skills learned by your exposure to studying project management can be used in most careers as well as in your daily life. Strong planning skills, good communication, ability to implement a project to deliver the product or service while also monitoring for risks and managing the resources, will provide an edge towards your success. Project Managers can be seen in many industry sectors including: Agriculture and Natural Resources; Arts, Media and Entertainment; Building Trades and Construction; Energy and Utilities; Engineering and Design; Fashion and Interiors; Finance and Business; Health and Human Services; Hospitality, Tourism and Recreation; Manufacturing and Product Development; Public and Private Education Services; Public Services; Retail and Wholesale Trade; Transportation; and Information Technology.

Below we explore various careers and some of the ways in which project management knowledge can be leveraged.

1.2 Business Owners

Business owners definitely need to have some project management skills. With all successful businesses, the product or service that is being delivered to the customer meets their needs in many ways. The product or service is of the quality desired, the costs are aligned with what the consumer expected, and the timeliness of that product or service meets the deadline for the buyer of that item.



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The pillars of project management are delivering a product/service within schedule, cost, scope, and quality requirements. Business owners need planning, organizing, and scoping skills

and the ability to analyze, communicate, budget, staff, equip, implement and deliver.



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Understanding the finances, the operations, and the expenses of the business are among the skills that project managers learn and practice. Some businesses may focus more on accounting, providing financial advice, sales, training, public relations, and actuary or logistician roles. Business owners may own a travel agency or could provide hospitality. Business owners could be managing a store front or a location in their town's marketplace.



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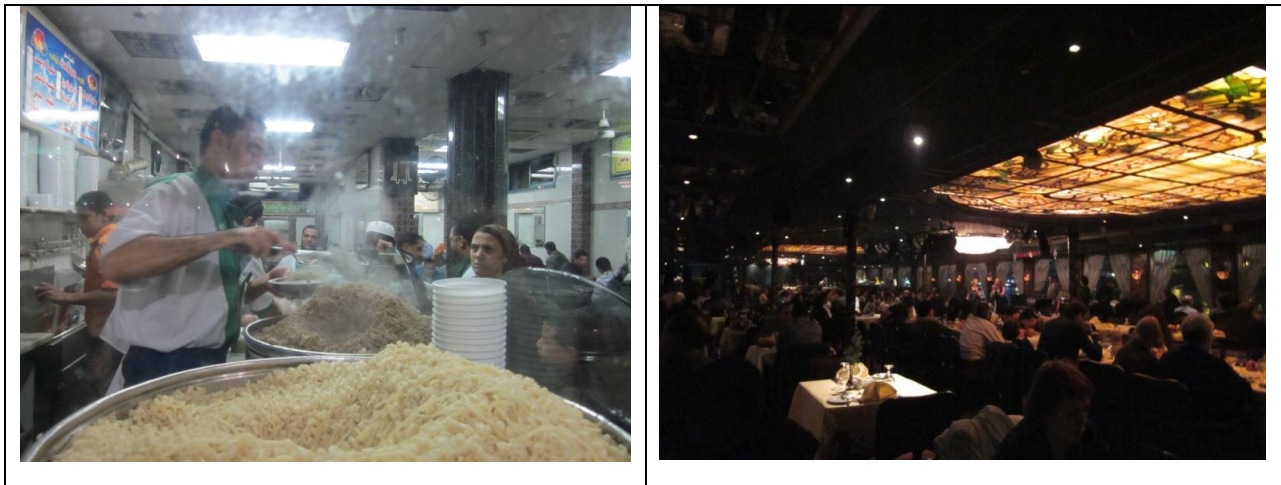
1.2.1 Example: Restaurant Owner/Manager

Restaurant Managers are responsible for the daily operations of a restaurant that prepares and serves meals and beverages to the customers. Strong planning skills, especially coordinating

with the various departments (kitchen, dining room, banquet operations, food service managers, vendors providing the supplies) ensure that customers are satisfied with their dining experience. Managers' ability to recruit and retain employees, and monitor employee performance and training ensure quality with cost containment. Scheduling in many aspects, not only the staff but also the timing of the food service deliveries, is critical in meeting customer expectations.

Risk management is essential to ensure food safety and quality. Managers monitor orders in the kitchen to determine where delays may occur, and they work with the chef to prevent these delays. Legal compliance is essential in order for the restaurant to stay open, so Restaurant Managers direct the cleaning of the dining areas and the washing of tableware, kitchen utensils, and equipment. They ensure the safety standards and legality, especially in serving alcohol. Sensitivity and strong communication skills are needed when customers have complaints or employees feel pressured because more customers arrive than the forecast predicted.

Financial knowledge is needed for the soundness of running the restaurant, especially tracking special projects, events, and costs for the various menu selections. Catering events smoothly can be an outcome of using project plans and the philosophy of project management. The Restaurant Managers or the executive chef analyzes the recipes to determine food, labor, and overhead costs, determine the portion size and nutritional content of each serving, and assigns prices to various menu items, so that supplies can be ordered and received in time.



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Planning is the key for successful implementation. Managers or executive chefs need to estimate food needs, place orders with distributors, and schedule the delivery of fresh food and supplies. They also plan for routine services (equipment maintenance, pest control, waste removal) and deliveries including linen services or the heavy cleaning of dining rooms or kitchen equipment, to occur during slow times or when the dining room is closed. A successful restaurant relies on many skills that the project management profession emphasizes.

Many businesses may explore outsourcing for certain services. Below is a sample status and project plan that reflects the various tasks needed for the project. A review of finances, the importance of communicating to stakeholders, and the importance of time, cost, schedule, scope, and quality are reflected. Many companies may use these steps in their business. These plans

show the need for the entire team to review the various proposals to choose the best plan.

Overall Status ● ● ●
Red Yellow Green

Svc Sourcing Initiative Status Report 10/14/00

Key Accomplishments:

- Defined catalog of services - current state (baseline)
- Completed Sourcing, Sponsor, LOB, and Legal Review of RFQ Document
- Conducted review of final RFQ with Project Steering Committee on 10/12
- Obtained final approval of RFQ document

Key Upcoming Activities:

- Complete RFQ Technical & Functional requirements
- Release RFQ document to Bidders on 10/14
- Finalize RFQ Evaluation Criteria & Scoring Matrix
- Expedite & facilitate all inquiries received during Bidders Q&A period
- Bidders Responses due to ABC Inc 12/31/00

	Current Status	Highlights
Scope	Green	RFQ Document finalized with release to list of five selected bidders scheduled for 10/14
Budget		N/A (Future project/implementation costs TDB)
Resources	Green	Project team including stakeholders and steering committee members finalized and in place
Schedule	Green	Sourcing, Sponsor, LOB and Legal Review of RFQ document including approval of final RFQ document complete

■ Off plan exceeding either critical resource, requiring re-plan
■ Off plan exceeding either team or capacity, requiring re-plan
■ All planning in place
↑ Improved over last period
→ No change over last period
↓ Degrated over last period

Sample status chart which is typical with the use of a red-yellow-green

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Service Sourcing Initiative	% Comp.	Resp.	September					October					November				December		
			9/5	9/12	9/19	9/26	10/3	10/10	10/17	10/24	10/31	11/7	11/14	11/21	11/28	12/6	12/13	12/20	12/27
1 Scope Definition																			
1.1	Define RFQ Objectives; Draft & Approve Sourcing Plan	100%	Sourcing (1) / Sponsors (2)																
1.2	Complete Market Analysis	100%	Sourcing																
1.3	Kick-off RFQ Project with Key Stakeholders; Establish Baseline & RFQ Scope w/ Key Stakeholders	100%	Sourcing/Key Stakeholders																
2 RFQ Process																			
2.1	Define Supplier Qualifications and Identify Bidders	100%	Sourcing																
2.2	Develop RFQ Technical & Functional Requirements; Draft RFQ Document	100%	All Key Stakeholders																
2.3	Define RFQ Evaluation Criteria & Scoring Matrix	100%	All Key Stakeholders																
2.4	Sourcing, Sponsor, LOB, and Legal Review of RFQ Document	100%	Sourcing																
2.5	Approval of final RFQ document	100%	Sourcing																
2.6	Release RFQ Documents to Bidders	100%	Sourcing																
2.7	Host Bidders Conference (optional)	100%	All Key Stakeholders																
2.8	Bidders Q&A period	100%	Bidders																
2.9	RFQ (Round 1) Responses due to MU	0%	Bidders																
3 Round 1 MU Evaluation Period																			
3.1	Round 1 Responses reviewed by MU Stakeholders	0%	All Key Stakeholders																
3.2	Round 1 Responses are scored and Round 2 finalists selected	0%	Sourcing																
4 Round 2 MU Evaluation Period																			
4.1	Round 2 Proposals requested from finalists and Round 2 evaluation criteria finalized	0%	All Key Stakeholders																
4.2	Round 2 Response due to MU	0%	Bidders																
4.3	Round 2 Evaluated and scored	0%	All Key Stakeholders																
5 Bidder Selection																			
5.1	Bidder Finalists selected	0%	All Key Stakeholders																
5.2	Contract negotiations begin with Finalists	0%	Sourcing																
5.3	Legal Review / Contract redlines (by MU and Finalist)	0%	Sourcing																
5.4	Stakeholder contract review and approval	0%	All Key Stakeholders																
5.5	Final Legal review and Contract approval	0%	Sourcing																
5.6	Contract execution (signed & counter signed)	0%	Sourcing																

Key: ◆ Milestone ◆ Decision Required
■ Complete ■ In progress

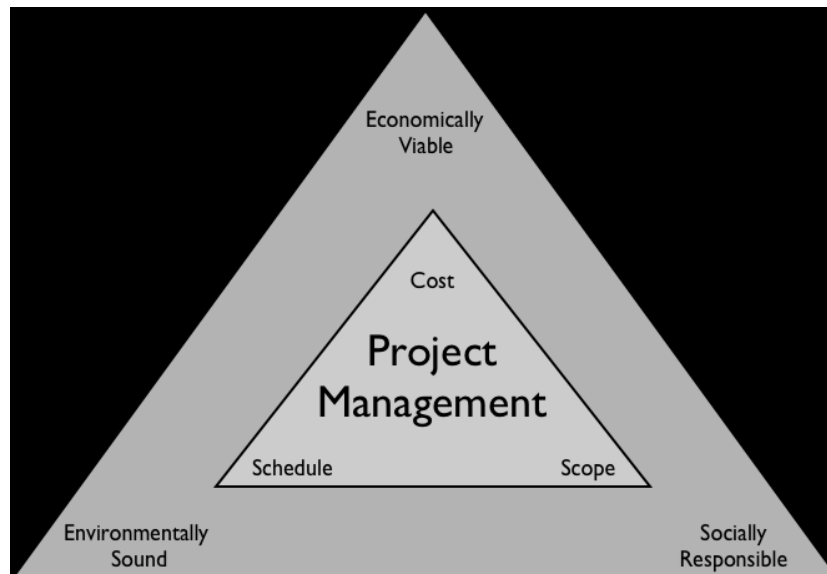
Total # of Tasks 21
 # of tasks completed 10
 % Complete 47.62%

Sample project plan exploring outsourcing of services

1.3 Construction Manager

Construction managers plan, direct, coordinate, and budget a wide variety of residential, commercial, and industrial construction projects including homes, stores, offices, roads, bridges, wastewater treatment plants, schools, and hospitals. Strong scheduling skills are essential for this role. Communication skills are often used in coordination of design and construction processes, teams executing the work and governance of special trades (carpentry, plumbing, electrical wiring) as well as government representatives for the permit processes.

The Construction Manager may be called a project manager or project engineer. The Construction Manager ensures that the project gets completed on time and within budget while meeting quality specifications and codes and maintaining a safe work environment. These managers create project plans in which they divide all required construction site activities into logical steps, estimating and budgeting the time required to meet established deadlines, usually utilizing sophisticated scheduling and cost-estimating software. Many use software packages such as Microsoft Project® or Procure® or online tools like BaseCamp®. Most construction projects rely on spreadsheets for project management. Procurement skills used in this field include acquiring the bills of material, lumber for the house being built, and more. Construction managers also cording labor, determining the needs and overseeing their performance, ensuring that all work is completed on schedule.



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Values including sustainability, reuse, LEED-certified building, incorporating green energy, and various energy efficiencies are being incorporated into today's future projects. Ms. Jennifer Russell, spoke about "Project Management and Global Sustainability" at the 2011 Silicon Valley Project Management Institute (PMI) conference. She informed the attendees of the financial, environmental, and social areas in expanding the vision of project management with the slide shown here. These values are part of the PMI's Code of Ethics and professionalism

in which the project manager includes in their decisions the best interest of society, the safety of the public, and enhancement of the environment.

1.4 Creative Services

Creative service careers include graphic artists, curators, video editors, gaming managers, multimedia artists, media producers, technical writers, interpreter, and translators. These positions use project management skills, especially in handling the delivery channel and meeting clients' requirements.

Let us look at one example, graphic artists, to understand and identify some of the project management skills that aid in this career.

1.4.1 Graphic Artists

Graphic artists plan, analyze, and create visual solutions to communications problems. They use many skills found in project management, especially communications. They work to achieve the most effective way to get messages across in print and electronic media. They emphasize their messages using color, type, illustration, photography, animation, and various print and layout techniques. Results can be seen in magazines, newspapers, journals, corporate reports, and other publications. Other deliverables from Graphic Artists using project management skills include promotional displays, packaging, and marketing brochures supporting products and services, logos, and signage. In addition to print media, graphic artists create materials for the web, TV, movies, and mobile device apps.

Initiation in project management can be seen in developing a new design: determining the needs of the client, the message the design should portray, and its appeal to customers or users. Graphic designers consider cognitive, cultural, physical, and social factors in planning and executing designs for the target audience, very similar to some of the dynamics a project manager considers in communicating with various project stakeholders. Designers may gather relevant information by meeting with clients, creative staff, or art directors; brainstorming with others within their firm or professional association, and by performing their own research to ensure that their results have high quality and to manage risks.

Graphic designers may supervise assistants who follow instructions to complete parts of the design process. Therefore scheduling, resource planning, and cost monitoring are pillars of project management seen in this industry. These artists use computer and communications equipment to meet their clients' needs and business requirements in a timely and cost-efficient manner.

1.5 Educators

'Educator' is a broad term that can describe a career in teaching, maybe being a lecturer, a professor, a tutor, or a home-schooler. Other educators include gurus, mullahs, pastors, rabbis, and priests. Instructors also provide vocational training or teach skills like learning how to drive a car or use a computer. Educators provide motivation to learn a new language or showcase new products and services. Educators use project management skills including planning and communication.

Let us look at a teacher since we all have had teachers and see if we can recognize the

project management skills that are demonstrated in this profession.

1.5.1 Teachers

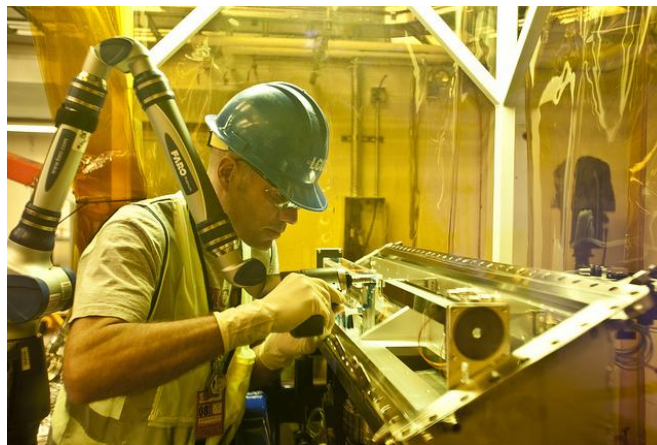
Some teachers foster the intellectual and social development of children during their formative years; other teachers provide knowledge, career skill sets and guidance to adults. Project management skills that teachers exhibit include acting as facilitators or coaches, communicating in the classroom and in individual instruction. Project managers plan and evaluate various aspects of a project; teachers also plan, evaluate, and assign lessons; implement these plans, and monitor student's progress similar to the way a project manager monitors and delivers goods or services. Teachers use their people skills to manage students, parents, administrators. The soft skills that project managers exercise can be seen in teachers encouraging collaboration in solving problems by having students work in groups to discuss and solve problems as a team.

Project Managers may work in a variety of fields with a broad assortment of people, similar to teachers who work with students from varied ethnic, racial, and religious backgrounds with awareness and understanding of different cultures.

Teachers in some schools may be involved in making decisions regarding the budget, personnel, textbooks, curriculum design, and teaching methods demonstrating skills that a project manager would possess such as finance, and decision making.

1.6 Engineers

Engineers apply the principles of science and mathematics to develop economical solutions to technical problems. As a project cycles from an idea in the project charter to the implementation and delivery of a product or service, engineers link scientific discoveries to commercial applications that meet societal and consumer needs.



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Engineers use many project management skills, especially when engineers specify the functional requirements. Quality is observed in engineers as they evaluate the design's overall effectiveness, cost, reliability, and safety similar to the project manager reviewing the criteria for the customer's acceptance of delivery of the product or service.

Estimation skills in project management are used in Engineering. Engineers are asking many times to provide an estimate of time and cost required to complete projects.

1.7 Healthcare Careers

There are many jobs and careers in healthcare which use project management skills. The field of healthcare varies widely, such as athletic trainer, dental hygienist; massage therapist, occupational therapist, optometric, physician assistant and X-ray technicians. Again, these folks actively apply risk management in providing health care delivery of service to their clients, ensuring that they do not injury the person that they are caring for. Note: A section on nursing is covered within this area of the textbook.

Many of you may have experience taking a fall while you were growing up, and needed an x-ray to determine if you had a fracture or merely a sprain. Hence let us look at this career as an example of a healthcare professional using project management skills.

1.7.1 Radiologic Technologists and Technicians

Radiologic technologists and technicians perform diagnostic imaging examinations like x-rays, computed tomography, magnetic resonance imaging, and mammography. They could also be called radiographers, because they produce x-ray films (radiographs) of parts of the human body for use in diagnosing medical problems.

Project management skills, especially people skills and strong communication, are demonstrated when they prepare patients for radiologic examinations by explaining the procedure and what position the patient needs to be at, so that the parts of the body can be appropriately radiographed. Risk management is demonstrated when these professionals work to prevent unnecessary exposure to radiation, these workers surround the exposed area with radiation protection devices, such as lead shields, or limit the size of the x-ray beam. Quality is needed to provide the expected results, with the health technician monitoring the radiograph and setting controls on the x-ray machine to produce radiographs of the appropriate density, detail, and contrast.

Safety and regulations concerning the use of radiation to protect themselves, their patients, and their coworkers from unnecessary exposure is tracked in an efficient manner and reported as a control to ensure compliance. Project management skills can also be use for they may prepare work schedules, evaluate purchases of equipment, or manage a radiology department.

Some radiologic technologists specialize in computed tomography (CT), as CT technologists as they too use project management skills. Since CT scans produce a substantial amount of cross-sectional x rays of an area of the body, the CT uses ionizing radiation; therefore, it requires the same precautionary measures that are used with x rays, hence the need for risk management and monitoring for exposure.

Teamwork, not only with the patient which the Radiologic technologist is supporting, the doctor whom ordered the request, but also other healthcare providers rely on strong communication, quality, work done in a timely manner and using the hospital resources wisely boil down to ensuring that the project management triangle of cost, schedule, scope with quality delivered remain the essentials which provide a cornerstone to project management and the skills

needed to obtain the objective.

1.7.2 Nurse

Nurses treat and educate patients and their family and public about various medical conditions and provide advice and emotional support. Nurses establish a care plan for their patients, activities like scheduling administering of medications as well as discontinuation of meds, i.e. intravenous (IV) lines for fluid, medication, blood, and blood products; applying therapies and treatments. Communication with the patient, their family, physicians and other healthcare clinicians may be done in person, or could use technology. Telehealth allows personnel to provide care and advice through electronic communications media including videoconferencing, the Internet, or by telephone.

Risk management is very important for a nurse, with some cases having a life or death consequence! Monitoring of pain management and vital signs and providing status to physicians help in responding to the health care needs of the patient.

The nursing field varies. Some nurses work in Infection control. They identify, track, and control infectious outbreaks in healthcare facilities and create programs for outbreak prevention and response to biological terrorism. Others are Educators, nurses who plan, develop, execute and evaluate educational programs and curricula for the professional development of students and professional nurses. Nurses may use project management skills while conducting healthcare consultations, advising on public policy, researching in the field or providing sales support of a product or service.

1.8 Paralegal

Attorneys assume the ultimate responsibility for legal work but they often obtain assistance. Paralegals assume this role in law firms and perform many tasks to aid in the legal profession. However, they are explicitly prohibited from carrying out duties considered to be the practice of law (i.e. giving legal advice, setting legal fees, court case presentations).

Project management skills from such as planning are used in helping lawyers prepare for closings, hearings, trials, and corporate meetings. Communication skills are used when paralegals prepare written reports that help attorneys determine how cases should be handled, or the preparation of various drafts, such as pleading and motions to be filed, obtain affidavits, etc.

Monitoring tasks aid Paralegals who may track files of all important case documents, working on risk containment on filing dates and responses to the court. Procurement considerations, skills that a project manager holds, can also be seen from a paralegal perspective via negotiation terms of hiring expert witnesses as well as other services such as acquiring services from process servers.



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Financial skills may be use as well, such as assisting in preparing tax returns, establishing trust funds, and planning estates or maintain financial office records at the law firm.

Government, litigation, personal injury, corporate law, criminal law, employee benefits, intellectual property, labor law, bankruptcy, immigration, family law, and real estate are many different law practices a Paralegal professional may experience which can use project management skills in these various work environments.

1.9 Software developer/computer programmer:

Computer software developers and computer programmers design and develop software. They apply the principles of computer science and mathematics to create, test, and evaluate software applications and systems that make computers come alive. Software is developed in many kinds of projects: computer games, business applications, operating systems, network control systems, and more. Project management skills help develop the requirements for the software, identify and track the product development tasks, team communications, test cases, and management of the quality, schedule and resources (staff, equipment, labs, and more).

1.10 Scientist Technicians

Science Technicians use principles and theories of science and mathematics to assist in research and development and to help invent and improve products and processes with their jobs more practically oriented than scientists. Planning skills project managers use can be seen as Science Technicians set up, operate, and maintain laboratory instruments, monitor experiments, observe, calculate and record results. Quality is a factor here as it is in Project Management, essential in work to ensure the processes performed correctly, with proper proportions of ingredients, for purity, or for strength and durability.

There are different fields in which these scientist technicians can apply project management skills. Agricultural and food science technicians work with the testing on food and

other agricultural products, involved in food, fiber, and animal research, production, and processing. Control and risk management are important here in executing the tests and experiments to improve the yield and quality of crops, or plants and animals resistance to disease, insects, or other hazards. Quality factors are emphasis when food science technicians may conduct tests on food additives and preservatives to ensure compliance with Food and Drug Administration regulations regarding color, texture, and nutrients.



Soil chemistry—Toxins in rice plants

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Biological technicians work with biologists studying living organisms. Many assist scientists who conduct medical research or who work in pharmaceutical companies help develop and manufacture medicines. Skills in schedule, especially in incubation periods for the study of the impact on cells, could impact projects, such as exploring and isolating variables for research in living organisms and infectious agents. Biotechnology technicians apply knowledge and execution skills, techniques, gained from basic research, including gene splicing and recombinant DNA, and apply them to product development. Project Managers skills can be seen in the collaboration and communication between the team to record and understand the results and progress towards a cure or product.



Photo provided by LAVA Pathology Specialists CC BY

Other kinds of technicians could be Chemical technicians who may work in laboratories

and factories, using skills of monitoring and control in the way they collect and analyze samples. Again, quality assurance is of concern for most process technicians' work in manufacturing, testing packaging for design, integrity of materials, and environmental acceptability.

Technicians carry with them skills set from project management to assist in their initiation, planning, executing of their task, while managing risks with some measure of reporting to determine if their objectives are meet with the constraints of cost, schedule, resource, meeting quality standards set.