

Project Management: Past, Present, Future

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Historical perspective

One can trace artifacts back nearly 5000 years that represent the results of projects and a high degree of technical competence at managing the work. Perhaps the oldest artifact is The Great Pyramid of Giza – located near the city of Cairo, Egypt and the only survivor of the Seven Ancient Wonders of the World. There are other ancient artifacts, but without a specific date of construction identified.

Circa 2560 BC, The Great Pyramid of Giza was constructed over a period of perhaps 20 years as the necropolis for the Egyptian pharaoh Khufu. Built to a height of 481 feet by using approximately 2 million stone blocks, each weighing more than two tons, it ranked as the tallest structure on earth for more than 43 centuries. Each side is oriented to the cardinal points of the compass – i.e., north, south, east, and west.

In a November 1998 issue of National Geographic Magazine, it was suggested that the building of The Great Pyramid required a sophisticated community of such skills as planning, cooking, baking, health-care, and stone cutting to accomplish this project. Pictures often depicting slaves being whipped to perform the tasks of stone cutting and stone placement, but this could not have been the typical “management method” for the project.

There had to be some team organization and project management to accomplish the feat of building the pharaoh’s tomb whose actual planning and construction remains a secret from modern society today.

Project management has continued to grow over the more than 5000 years through the demands of society for a change to resources to create a more valuable product or service for human consumption. Techniques improved and tools were invented to make the tasks easier. Whereas construction may have been the seed for developing project management, many organizations across all industries use project management to some extent.

Perhaps like the ancient Egyptians, a business’s project management may include only fundamental concepts and practices with the expectation of continued growth as the need is recognized.

Contemporary growth

Planning tools have emerged over the past 50 plus years to address dynamic planning requirements. Computers have aided and revolutionized information management. Risk tools give probabilities for success or failure of projects.

An abundance of literature is available through books, articles, and electronic sources to describe project management theory, concepts, practices, procedures, and policy. This literature includes the US Air Force’s 375 series on program management requirements from the 1960s and 1970s that influences many of the practices and procedures used today.

Formal project management education programs have been started in institutions of higher education as well as a wealth of independent training programs that address various aspects of project management. There have been efforts to expand the transfer of knowledge from the single project model to a multiple project model. Studies have been accomplished to determine if project management is a profession or something less that does not meet a contemporary definition of profession.

No known study concludes that project management is a profession that meets current definitions. Project management, as a collection of theory, concepts, practices, and procedures, is, however, the management method of choice for many organizations and perhaps the most recognized term in management today. There are more than 500 books of all size and focus written each year on project management practices and procedures.

Current situation

In spite of advances made in project management over nearly 5000 years, there are still an inordinate

number of project failures, i.e., failing to meet the original project objectives. While some progress has been made in increasing success rates of projects, a significant number still fall short of meeting the objectives. Why is there such a waste of resources through failed projects?

The one component that seems to be weak is the human side of managing people in project teams. Individuals are rewarded for individual achievement throughout their lives, but are expected to perform in a project team with the team's best interest in mind. Voting is often used to determine a course of action rather than using consensus. Team building is not high on the priority of the project manager as long as the project appears to be meeting the objectives. Team cohesiveness is often lacking and individuals often function like a single entity in a crowd.

It was recognized in the early 20th century that managers were not tapping the collective physical and mental energies of the team members in a unified approach. In 1924, Mary Parker Follett (1868-1933) published *Creative Experience* that addresses "creative interaction of people through an ongoing process of circular response." Her ideas are recognized as "cutting edge" in organizational theory.

These ideas include seeking win-win solutions, strength in human diversity, situational leadership, and a focus on process. (See www.follettfoundation.org for more information.) Today, little has been accomplished to fully harness the full potential of the project staff through team building and team motivation.

Some examples of actions that destroy team unity and disrupt project efforts have been noted over the years of contact in projects. These examples raise awareness on what should not occur.

- Project Manager: "We have a team when everyone agrees with what I say."
- Project Manager: "I am empowering everyone to do whatever is necessary between milestones – Just don't miss a milestone."
- Project Manager: "Don't lie to the customer – that's my job."
- Project Manager: "Everyone get ready, we'll have some fun at the new guy's expense."

- Project Manager: "You're not a team player (to new team member)."
- Project Manager: "I need six resources on this job. (Refers to people in an impersonal way as though the people were objects.)"
- Team Member: "I need to check that with the project leadersheep, I mean leadership. (Freudian, perhaps)"
- Team Member: "Who is God's boss or who does God report to? I want to know how to properly address my boss (project manager)."

There are numerous examples that reflect the negative side of leadership and failure of leadership to effectively motivate the project team. Some evoke a smile or chuckle, but these failures cannot have a positive effect on team unity or team productivity. Positive leadership and team building is needed in each example to obtain the best from the team individually and collectively.

Future growth

Future improvements in project management may be made through better tools and practices, but the one area ripe for change is the project team. Work is only accomplished through people and well-led people perform at their best following a high performance project leader.

In a 2000 interview with the former project manager of both the US Air Force's F-15 and SR-71 aircraft, the project manager attributed the success of these two aircraft to the composition of the team. Both project teams were selected based on their qualifications and each member was offered the opportunity to serve in an assignment other than the project. Only one person opted to take another assignment and the teams were comprised of people who wanted to be part of the projects. Not all projects have the luxury of having an all-volunteer team.

The F-15 and SR-71 project manager gave full credit to his project teams and suggested that project success is largely dependent upon the project team and its ability to function as a true team. The products of these two teams, the F-15 fighter aircraft and the SR-71 strategic reconnaissance aircraft, have set world records for performance that has lasted for more than 30 years. More technically complex and with a greater need for superior leadership, these two air-

craft demonstrate the outcome of high-performance teams.

A more recent example of projects that were replicated many times although each was unique and each involved major risk factors proved successful because of team training by simulation. Each project was simulated on a computer whereby each team member saw his or her role and was able to understand the parameters of their respective roles. Team members were afforded the opportunity to ask other team members questions and respond to questions. Projects were limited in duration and scope to ensure rapid simulation of the tasks within the projects.

This simulation of projects has given the organization a unique capability to integrate the efforts of all team members for the most effective results. While the simulation consumes project time, it has the advantage of reducing communication requirements during project implementation and has materially improved the probability of success for the project.

Conclusions

Techniques and Tools

Techniques and tools will continue to play an important role in such areas as planning, information management, and risk assessment. There will be more reliance on automated techniques to support decision processes.

Staff

Changes in people knowledge, skills, and competences will provide the greatest opportunity to improve project success through better organization and training of teams, to include training project managers in the art of leadership. Many future gains in project successes and reduced consumption of resources for each project will be dependent upon team performance. High-performance teams will become more prevalent in medium to large size projects.

Project managers will become more widely versed and aware of the need for leadership skills to obtain the best results from individuals and teams. Project manager competence will include the ability to effectively lead teams and to motivate individuals in the performance of project work. This will lead to fewer project failures and waste of resources.

Project Strategy

Project strategies will be aligned with the enterprise's strategic goals and projects will be selected based on objective criteria that relates to the business's purpose. Portfolio management will become more common in all sizes of organizations.

The respective project roles for the project manager, project team member, and project sponsor need better definition and the right training to assure accomplishment of these duties. Project team members performing technical tasks will be trained in being team members as well as limited project management skills to understand the measurement of progress for the project.

Summary

Throughout history, from construction of ancient artifacts to modern projects, the major difference in project success has been influenced by the quality of the project team. Individuals may be threatened and coerced into performing certain functions, but the highly motivated individual will provide better results. Integrated teams of willing people provide the optimum solution for most projects whereby all individuals subordinate their goals to that of the team.

Modern examples of teams give rise to the concept that well-motivated volunteers produce the best results. This motivation is derived from a competent project leader who understands the principles of leadership and exhibits traits that builds on team capability. Project success is dependent upon team performance.

Acknowledgement: The overall concept of improved project management and the historical growth of project management is inspired by the newly revised Project Management: Strategic Design & Implementation, 5th edition, (David I. Cleland & Lewis R. Ireland) to be published in August 2006. Parts of the book are paraphrased here.