

RESEARCH ON APPLICATION OF SIX SIGMA MANAGEMENT IN PROJECT MANAGEMENT

CHAPTER 1 INTRODUCTION

1.1 Research background and motivation

With the successful application of the Six Sigma management method in major companies around the world, more and more companies have introduced this management method one after another. The advantages of reducing production costs, improving product quality and customer satisfaction, and enhancing enterprise competitiveness have gradually emerged. At the end of the 20th century, Japanese companies fully entered the American market, bringing unprecedented challenges to American companies. In order to regain the product market, Motorola Corporation of the United States began to develop a quality improvement strategy. After conducting benchmarking against Japanese companies, the Japanese company's total quality management approach was introduced into the company to determine quality improvement goals. Six Sigma management was born in Motorola in 1987. In ten years, it not only eased the dilemma of the low market share of the enterprise's products, but also increased the profits of the company, becoming a model that has succeeded in using Japan's quality management methods in accordance with its own situation. With the successful application of the Six Sigma management method at Motorola, global companies began to pay attention to this quality management method. Global 500 companies including Microsoft, DuPont and Ford, as well as Japanese and Korean companies such as LG and Samsung, have started full implementation of Six Sigma management. In the early 21st century, Chinese companies also began to implement Six Sigma management within the company. Lenovo Group was the first Chinese company to implement Six Sigma management.

Project management originated from ancient engineering practices such as the Great Wall of China, the Pyramids of Egypt, and the ancient Roman water supply channel. In these large-scale projects, various resources were allocated, various plans were formulated, and the entire project was controlled and managed to achieve the project goals. All reflect the wisdom of the ancients using project management methods. With the advent of the era of knowledge economy and the era of big data in the 21st century, project management has moved from the earliest ancient engineering

practice to the modern project management stage. In addition to traditional industries, almost all industries and organizations such as high-tech, government, and public institutions are project management application practice is carried out. The development of project management is characterized by globalization, diversification, specialization, standardization and professionalism. The heat of project management is as described by the Chairman of the US Project Management Professional Qualification Committee: "Everything is a project, Everything will also become a project." The implementation of large-scale projects is a project, and the holding of small-scale meetings is also a project. The concept of project management continues to deepen and refine in the industry. The academic research on project management is also in full swing. Project management comes from practice. Its methods and technologies have been continuously improved and upgraded, and eventually it has been applied in many fields. Therefore, project management has a good ability to produce, study, and learn. The collaboration of production and research can further promote enterprise openness, innovation, and industrial upgrading.

Since the 1980s, with the development of global economic integration, intensified competition, and the development of information technology, especially network technology, many important management innovation theories and methods have emerged in the field of enterprise management. Project management is a branch of management science. The application of project management methods has attracted the attention of many industries. Six Sigma management is also a highly respected management method in the past three decades. Although different management theories focus on different issues and aspects, but from the development of perspective, various management theories are mutually inclusive and learn from each other. They show obvious convergence and have a basis for integration. At the same time, from the perspective of practice, enterprises need to achieve systemic and integrated management in order to achieve sustainable management innovation solution. Therefore, it is necessary in the analysis of the modern project management theory and method and summarizes the practice on the basis of enterprise success, study keep enterprise sustainable innovation management model, and studies the application of Six Sigma management in project management is a theoretical and practical significance for exploration.

1.2 Research purposes and significance

Six Sigma management is not only a management concept, but also a scientific

method for solving process problems. Different Six Sigma projects use different methods and steps. The DMAIC process improvement process of Six Sigma is through the inspection of the process, based on the data, making the process transformation more accurate and effective, reducing the product defect rate, and improving the market competitiveness of the company. Usually each Six Sigma project is a DMAIC cycle, which is commonly referred to as Six Sigma Improvement Five phases: Define, Measure, Analyze, Improve, and Control. DMAIC is the first letter of these five stages of English words. In accordance with the five steps of this process, we can effectively achieve Six Sigma breakthrough improvements. The team's work ranges from the presentation of a problem to the implementation of a solution. This includes many activities. Through the DAMIC process, team members can play the most effective role in completing the project's mission.

With the rapid development of various industries and the project management concept of enterprises becoming more and more mature, the project management application project management discipline has been diversified. Through the study of the evolution of project management disciplines, it analyzes the guiding significance of project management theory for practical application, combines the macro-policy and the background factors of the times, conducts a synchronic analysis of project management discipline theories, and explores what kind of project management basic theory has practical application. Significant guidance significance, analysis of what methods will follow will become the focus of the application sector, by summing up the basic theories and methods of project management to further promote the application of project management practices to expand into more industries, and promote industrial innovation.

The Six Sigma management method is based on the statistical analysis of data, and the continuous improvement and standardization of the process. The one-time characteristics and term characteristics of the project make it difficult to collecting, analyze and process the data. The lack of quantitative management in project management also deterred the use of Six Sigma methods in project management. However, this is exactly the significance and important line for the study of Six Sigma application in project management.

1.3 Research framework

1.3.1 Basic ideas

Based on the grounded theory and case analysis method, this paper adopts induction analysis method and analyzes and researches relevant literature and data of Six Sigma management and project management on the basis of review. Explain the relevant theories of Six Sigma management and project management and compare the similarities and differences between them. And analyze the feasibility and limitations of Six Sigma management in project management.

1.3.2 Grounded theory and Case study

The grounded theory emphasizes the promotion of theories from the data and believes that only a thorough analysis of the data can gradually form a theoretical framework. This is an inductive process. From the bottom up, information is constantly being condensed. Different from the general grand theory, the grounded theory does not logically deduct the hypotheses that the researchers set in advance, but starts from the data and conducts induction analysis. The theory must be traced back to the original data it produced. It must be based on empirical facts. This is because rooted theorists believe that only theories generated from the data have vitality. If theory and data are consistent, the theory has practical uses and can be used to guide people's specific life practices.

Based on the theoretical basis of the case analysis, this paper mainly discusses the theoretical exploration of Lenovo's Six Sigma management and the application of project management. Through these, we further analyze the feasibility and limitations of Six Sigma management in project management applications in practical applications.