

Research on the Formulating Model of Quality Strategy, Policy and Objective for Military Enterprises

Lu Li¹, Yuan Li¹, Hongtao Yao¹

¹ China Aerospace Standardization Institute, Beijing, China

Abstract. Based on the theoretical basis of quality management and strategic management, this paper analyzes the definition and links of quality strategy, quality policy and quality objective, and puts forward the model for military enterprises to formulate quality strategy, policy and objective, explains the application of the model by a case, so as to provide reference for military enterprises to practice.

Keywords: Quality Strategy; Quality Policy; Quality Objective; Model; Case Analysis.

1. Introduction

Studying quality from a strategic perspective can be traced back to Japanese enterprises in the early 1960s. The control point map of Komatsu Production Institute and the marking method of NOKAWA SHOJI are the rudiments of quality strategy management in the enterprises. Later, Japanese scholar Yoji Akao published the monograph Pointer Management, which systematically elaborated the relationship between the strategic objectives of enterprises and organizational improvement, and proposed the methodology of strategic oriented improvement. Pointer management has been widely used in Japanese, European and American enterprises, becoming an important theory and methodology for the organization strategy implementation.

In recent years, with the introduction of the "Powerful in quality" policy and the concept of total quality management, Chinese military enterprises have paid more and more attention to the position and role of quality in enterprise development and market competition, and began to treat quality as a business strategy. The promotion of the "big quality concept" has pushed quality to the strategic level of enterprises. However, the application of quality strategy, policy and objective in Chinese military enterprises is basically at the stage of initial cognition. When formulating quality strategy, policy and objective, the phenomenon of "slapping the head", separating from reality and copying is widespread, and there is a lack of scientific model guidance.

This paper sorts out the basic definitions of quality strategy, policy and objective firstly, analyzes the links between the three, and puts forward the formulating model of the three, explains the application of the model by a case to guide the practice of military enterprises.

2. Definition of enterprise quality strategy, policy and objective

2.1 Definition of quality strategy

The term "strategy" was originally a military concept. In China, there are two definitions of "strategy" in Modern Chinese Dictionary, one is the plan and tactics to guide a war, the other is the general plan of the country and the political party for the overall issues. For enterprises, "strategy" is a plan to achieve long-term survival and development, which is to do the right thing [1]. It is applied in the field of enterprise quality management. It can be seen that the definition of quality strategy refers to the plan made by an enterprise for its own quality development. It is an intermediate force between the enterprises and the environment, making the internal conditions of the enterprise match the external environment.

2.2 Definition of quality policy

"Policy" in Modern Chinese Dictionary means the guiding direction and goal of the cause. As for the definition of quality policy, it is stipulated in GB/T 19000-2016/ISO 9000:2015 Quality

Management Systems and Terminology that quality policy refers to "all intentions and directions on quality officially issued by the top manager of the enterprise" [2].

2.3 Definition of quality objective

"Objective" in Modern Chinese Dictionary means "the object of shooting, attacking or seeking, the state or purpose to be achieved". The objective of an enterprise refers to the expected results that the enterprise will achieve in a certain period of time according to its mission [3]. As for the definition of quality objective, it is stipulated in GB/T 19000-2016/ISO 9001:2015 Quality Management Systems and Terminology that quality objective refers to "the purpose pursued in terms of quality".

2.4 Links

The main links between the three are as follows: First, they are formulated on the same basis, that is the mission and vision of the enterprise, and based on full analysis of the internal and external environment. Second, they are in concert and harmony. Quality policy should support quality strategy, quality objective should be formulated within the framework of quality policy. Third, quality objectives can reflect the adaptability and implementation of strategy and policy. Through the evaluation and measurement of quality objective, the formulation and implementation of strategy and policy can be seen in time, and relevant remedial measures can be taken.

3. The formulating model of quality strategy, policy and objective for military enterprises

Military enterprises should follow their internal logic and use scientific methods when formulating quality strategy, policy and objective. They are not slogans or indicators that are mere formality derived by decision-makers by "patting their heads", nor are they irrelevant and hard copy. The enterprise should make full analysis, reasonable logical derivation when formulate quality strategy, policy and objective. the formulating model of quality strategy, policy and objective for military enterprises is shown in Fig 1.

The first step is to analyze the core connotation of mission and vision of the enterprise. The mission and vision of the enterprise is the starting point of the whole formation path. The enterprise should fully analyze the expectations of the enterprise development, the goals and tasks of the quality development, and the fundamental needs put forward from the perspective of customers, which are expressed or implied in the mission and vision of the enterprise, as the fundamental guidance for formulating quality strategy, policy and objective.

The second step is to judge the ability and situation. By studying the internal and external environment, the strengths and weaknesses of military enterprises and external opportunities and threats can be identified. A variety of analytical tools can be used. For example, when analyzing the internal environment, analytical tools such as value chain analysis and balanced scorecard can be used to thoroughly analyze the current situation of the capabilities and resources that affect the quality development in the internal environment, such as the quantity and quality of quality personnel, the resources such as the funds for quality control and improvement, inspection and testing equipment and facilities, the capacity status of quality policy and system construction, the application of quality engineering technology, and the degree of quality culture training. Analyze the advantages and disadvantages of homogeneous military enterprises or ideal military enterprises. For another example, when analyzing the external environment, PEST model, Porter's five forces analysis model and other tools are used to fully analyze the external factors that affect the quality development of military enterprises, such as relevant favorable policies in the macro environment, technological development trend, industrial basic ability, competitive demand, etc. Identify the opportunities and threats for future enterprise quality development in the big environment.

The third step is to choose the quality strategy. Mainly taking the analysis conclusions of the first two steps as input, using internal/external factor evaluation matrix, SWOT and other analysis tools, from the angle of optimizing the enterprise's quality development strategy, selecting one or several development directions suitable for the enterprise itself. That is to say, the basic problem of determining what to do in the future quality of the enterprise.

The fourth step is to determine the quality policy. After the problem of "what to do" has been solved, it should be used as input to carry out research on the basic policy of "how to do". Considering the needs of customers and related parties, the general management policy of the enterprise, etc., the quality policy of the enterprise is determined from the angle of optimizing the enterprise's quality development behavior and establishing the enterprise's quality behavior standard.

The fifth step is to determine the quality objective. After determining the quality policy, it should be the framework to form the quality objectives of the enterprise. The formation of quality objectives should be described in both qualitative and quantitative forms, and at the same time, it should follow the attributes such as time limit, responsible person and measurement index.

The sixth step is to decompose the quality objectives. After the total quality objective is determined, it should be further decomposed downward. For example, it can be decomposed into long-term objectives, medium-term objectives and short-term objectives according to time. It can be decomposed into the objectives of each business department and each functional department according to the department., It can be decomposed into quality control objectives, quality supervision objectives, quality improvement objectives, quality planning objectives and so on according to the process. It also can be decomposed into smaller or lower-level categories. After the quality objectives are decomposed, the responsibility system of the enterprise is established, which is distributed and implemented into the post responsibilities and reward and punishment standards.

The last step is to formulate the implementation plan. Based on the analysis of the above steps, formulate the implementation plan, including implementation steps, key tasks, development layout and resource allocation measures, to ensure effective implementation and landing.

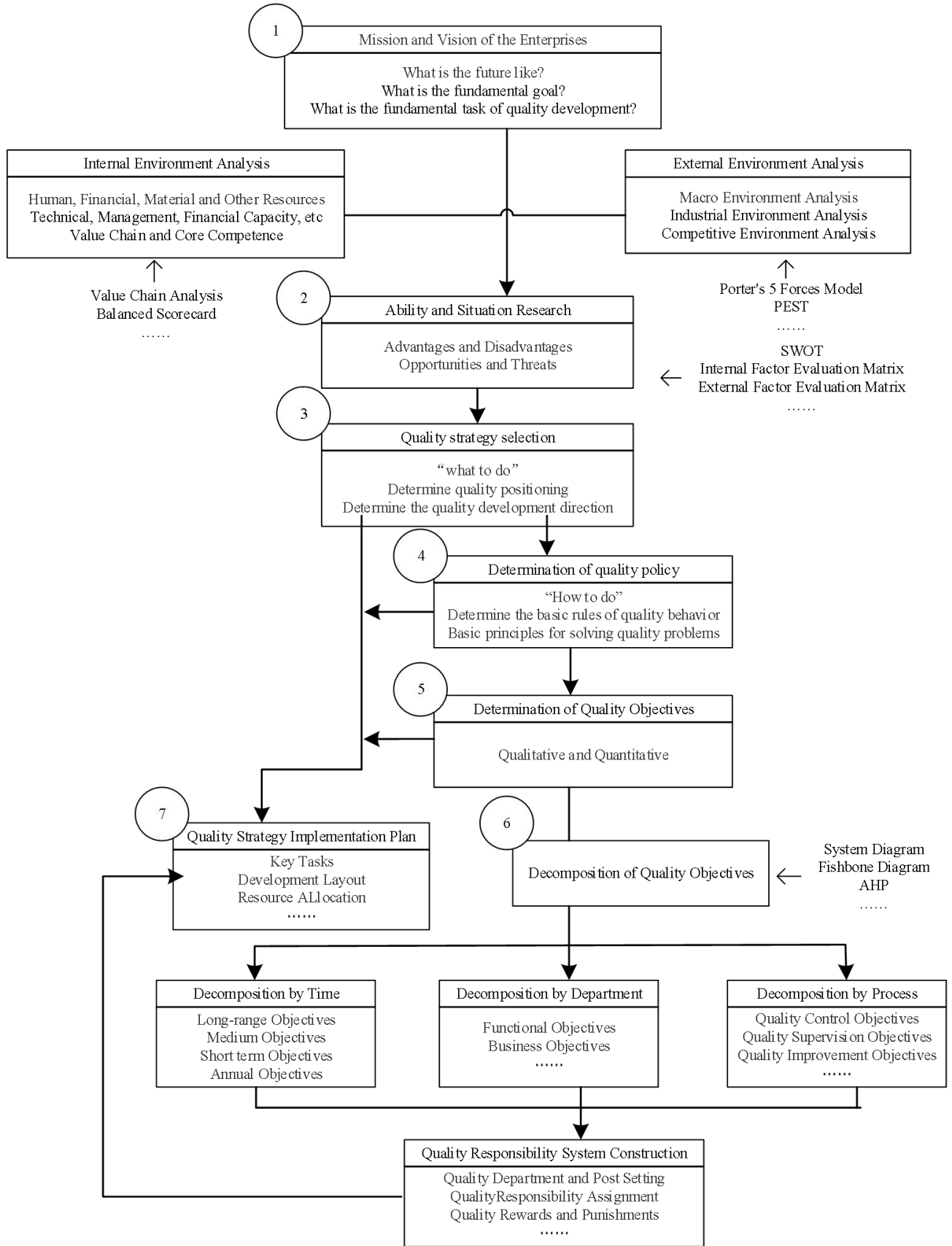


Fig. 1. the Formulating Model of Quality Strategy, Policy and Objective for Military Enterprises [owner-draw]

4. Case analysis

BZ Company is a large state-owned enterprise integrating R&D, manufacturing and production in the aerospace equipment manufacturing industry. It has strong competitive strength in the domestic major equipment manufacturing field, and its product quality is in the forefront of the industry as a whole, enjoying a high quality reputation among domestic and foreign users. BZ Company has established the mission and vision of "becoming a modern company with good social and economic benefits, strong competitiveness and respect", and effectively formulated and implemented the quality development strategy, which will become an important means to ensure the company to improve its quality competitiveness and enhance its core competitiveness. BZ Company carried out detailed analysis of internal and external environment on the basis of corporate vision and mission by using the established model. The external situation is analyzed from the aspects of macro-environment, industry environment, competitors, suppliers and users, and the internal situation is analyzed from the aspects of development strategy, quality culture and management concept, quality system construction, quality system construction, infrastructure, human resources and quality informatization, and the existing strengths, weaknesses, opportunities and threats are further identified, as shown in Fig 2.

<p>Strengths</p> <ol style="list-style-type: none"> 1. The workforce is stable and increased. 2. The quality department exercises its functions and powers independently, and the leaders attach importance to it. 3. Have the ability of quality inspection and testing. 4. The organizational responsibilities are hierarchical and the structure is complete. 5. A clear strategy of near-cosco development of enterprises. 6. It has several quality and reliability research, application, testing and service centers. 7. The product quality is stable and its reputation is good. 	<p>Opportunities</p> <ol style="list-style-type: none"> 1. The strategic direction and key policy support of the country's quality power and space power. 2. Support and understanding of users 3. Digital transformation 4. Communication with the quality department of the industry
<p>Internal environmental analysis</p> <p>Weaknesses</p> <ol style="list-style-type: none"> 1. The quality management system and scientific research and production of two skins are serious. 2. The standard system is rather confusing and needs to be sorted out urgently. 3. Employees' quality awareness is not strong, and there is a lack of effective assessment mechanism. 4. Lack of effective quality preventive measures. 5. The quality management and inspection methods are backward and inefficient. 6. Incomplete collection of quality information 	<p>External environment analysis</p> <p>Threats</p> <ol style="list-style-type: none"> 1. The improvement of users' quality requirements 2. Internal competition in domestic and foreign industries 3. Impact of new trends in quality management and technology development 4. The increasingly severe blockade of foreign competitiveness on basic technologies, raw materials, components and chips. <p>threaten</p> <ol style="list-style-type: none"> 1. The improvement of users' quality requirements 2. Internal competition in domestic and foreign industries 3. Impact of new trends in quality management and technology development 4. The increasingly severe blockade of foreign competitiveness on basic technologies, raw materials, components and chips.

Fig. 2. Environment analysis of BZ company [owner-draw]

From the environment analysis of BZ Company, it can be seen that the aerospace industry in which BZ Company is located is the key supporting industry of the national quality power and aerospace power. Therefore, it has unique advantages in policy support and resource allocation, and both the state and users have given great support to BZ Company in infrastructure construction and technological innovation. BZ Company is a typical large state-owned enterprise, with a big business, a sound organizational structure and basic management system, especially a number of its own quality and reliability centers, and its own quality basic conditions are good. However, at present, the main problems faced by BZ Company are: the serious phenomenon of quality management system and scientific research and production, the general lack of employees' quality awareness, the backward management and inspection methods and technologies, and insufficient use of information technology. Therefore, from the perspective of utilizing external dividends, coping with external risks, meeting major needs and resolving major contradictions, BZ Company has formulated the following quality strategies: Establishing quality by system, BZ Company integrates R&D, manufacturing and production, with a huge scale and complex business. Perfect quality system is an important guarantee, and BZ Company is currently facing the chaotic situation of

standard system, so the strategy of establishing quality by system is a feasible choice. With strong technology, BZ Company is now facing the strong impact of quality management and technical development, and its own technical means and management efficiency in some areas are not high, so the demand for digital and intelligent information development of quality management is obvious, and the strategy of strong technology is also its inevitable choice. Culture promotes quality, BZ Company directly faces military users, and has very high requirements for product quality. In recent years, employees' quality awareness is generally not high, and with the expanding workforce and complex business system, the strategy of culture promotes quality is a good choice. Basic quality assurance, BZ Company has many quality and reliability centers, and its own basic conditions are good, which can give full play to this huge advantage. In addition, the state attaches great importance to the infrastructure and the foreign blockade of China, the basic quality assurance strategy is also a feasible choice. Under the guidance of the quality strategy, BZ Company has formulated the quality policy of "building a system, laying a solid foundation, clarifying responsibilities and cultivating culture", and based on this framework, it has determined the quality objectives, namely: Improve the product quality level, and the qualified rate of spot checks at all levels is 100%; Establish a sound quality management system, and keep the qualified rate above 99%; Improve customer experience with high-quality products and services, and keep customer satisfaction the first in the industry; Prevent quality problems from the source, and the after-sales failure rate of products decreases by 20% every year; Key technologies have continuously achieved breakthroughs, and R&D funds and the conversion rate of international standards have maintained steady growth; Improve the quality awareness of all employees, and achieve 100% coverage of quality training and improvement activities.

5. Conclusions

This paper focuses on the actual needs of military enterprises to formulate quality strategy, policy and objective. Starting from the definitions of the three, this paper analyzes the links between the three, obtains the logical rules of quality strategy, policy and objective, and then puts forward the formulating model, which provides important theoretical support and practical guidance for military enterprise quality strategy management.

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