

## Discussion on the Integration of ERP and ISO/TS16949

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**Abstract.** The purpose of ERP is to support the enterprise's development strategy and enhance its core competitive power. ISO/TS16949 is the demands of the quality management system of ISO. This paper discusses the disadvantages of the traditional ERP system, analyzes the developing trend of EBP and the demands of the quality system of ISO/TS16949 expounds the necessity and feasibility of the fusion of ERP and ISO/TS16949 and puts forward the implementation mode.

**Keywords:** ERP, ISO/TS16949, process.

### 1. Introduction

ERP represents the operation mode of modern enterprises, reflecting the requirements of the era for enterprise management to allocate resources and maximize the creation of social wealth. ERP contains the most advanced management ideas and methods, which can help enterprises to establish a modern system that meets the requirements of the market economic system.

Through the analysis of ERP core ideas and ISO/TS16949 quality system requirements, this paper expounds the necessity of the integration of ERP and ISO/TS16949: and the consistency of management ideas, management content and management requirements from ERP and ISO/TS16949. The complementary perspective illustrates the possibility of convergence. Furthermore, a preliminary study on the integration of ERP and ISO/TS16949 based on business process reengineering and process methods was carried out.

### 2. The Necessity of Integrating ERP with ISO/TS16949

#### 2.1 The Core Idea of the ERP System.

ERP is based on information technology and provides a comprehensive and systematic management platform for decision-making, planning, control and business performance evaluation based on system management ideas. ERP is the common crystallization of management thinking and information technology development.

The general idea of traditional ERP design is to grasp one center, two types of business, and three trunk lines.

A center: The main purpose of an enterprise is to make a profit. Therefore, every business activity of an enterprise needs to consider the business objectives of the enterprise, and it will have input costs and output business results. Finance should be the center of all business. Two types of business: planning and execution throughout the entire process of the system. From planning to execution planning, and then feedback to the planning layer, affecting the formulation and revision of the plan, this process is repeated, consistent with the principle of PDCA cycle, forming a closed loop, which also reflects the closed-loop principle of management. Three main lines: The three main lines of ERP design are supply chain management, production management and financial management. These three trunk lines are also the mainstream business of the manufacturing business. Therefore, it is necessary to divide and coordinate the three trunk lines when designing and designing.

#### 2.2 The Shortcomings of the Traditional ERP System.

Although the ERP system includes the quality management module, because its design goals and general ideas do not include special attention to quality information, the traditional ERP software system structure and design ideas have the following drawbacks: the limitation of quality information and the flow of quality information. Unobstructed, low efficiency of quality

information processing, backward processing of quality information, single performance of quality information and quality management are only a function.

Therefore, according to the ISO/TS16949 technical specification, the overall requirements of the enterprise quality management system, as well as the main tools implemented by ISO/TS16949, substantially modify the structure of the traditional ERP system, and implement the ISO/TS16949 quality management system through the implementation of the ERP system. The integration of ideas on the ERP system platform is the main content of this paper.

### **3. The Possibility of Combining ERP with ISO/TS16949**

The ISO/TS16949 quality management system represents the international advanced quality management requirements, providing a standardized management standard and environment for the ERP system; the ERP system provides a scientific and efficient electronic platform for the ISO/TS16949 management system. The two are different and closely related, complement each other and promote each other. This kind of relationship, which has both extensive internal relations and obvious external differences, makes the integration of ISO/TS16949 system and ERP system a possibility.

#### **3.1 ERP and ISO/TS16949 Consistency Analysis.**

ERP is consistent with the management philosophy of ISO/TS16949. ISO/TS16949 is the essence of the combination of modern quality management theory and practice. It inherits the important technical achievements of ISO9000 series and embodies the following eight management principles: "Customer focus, leadership, full participation, process methods, processes" Systematic approach, continuous improvement, fact-based decision making and mutually beneficial relationships with suppliers."

ERP is consistent with the management requirements of ISO/TS16949. The ISO/TS16949 specification standardizes the process by compiling systemized documents, and relies on a sound management mechanism to ensure the implementation of standards. Human factors have a greater impact on the effectiveness of continuous execution; while ERP systems are based on process rationalization and standardization. On the basis of, relying on the mandatory system of the computer system to enable the business to be carried out in accordance with standard procedures and specifications, this mandatory just makes up for the impact of the flexibility of the ISO/TS16949 specification, which can assist the ISO/TS16949 quality management system. Effective operation.

#### **3.2 ERP and ISO/TS16949 Complementary Analysis.**

The excellent quality management system established by the enterprise in accordance with the ISO/TS16949 standard is often disturbed by human "flexibility" and cannot be maintained and cannot play its due role. When combined with the ERP system, they will be mutually restrained and support each other, and the resources can be properly allocated and the ideal effect can be achieved with half the effort.

The ISO/TS16949 specification provides a framework for principles and management systems for quality management of ERP. ERP imports the management ideas and methods of the ISO/TS16949 specification. Helps to standardize its quality management functions. The ISO/TS16949 specification introduces a process-based quality management model. These processes are any activity or group of activities that use resources to turn input into output. The ISO/TS16949 specification includes four major processes: management responsibilities, resource management, product implementation, measurement analysis, and improvement. In the area of quality management, the content covered by the ISO/TS16949 specification is deeper than ERP. According to the process of ISO/TS16949, the process of enterprise management is identified, and the corresponding business processes and monitoring measures are set, so that the function of ERP can be completed more standardly.

ERP is an effective tool for implementing the ISO/TS16949 specification. The ISO/TS16949 specification puts forward a lot of requirements on how to implement the system, but does not propose specific implementation methods and means, but emphasizes that these requirements

should be met according to customer requirements. Therefore, in the process of implementing ISO/TS16949, the organization should implement it according to the specific requirements of the customer if the customer has a clear request. However, when there is no specific requirement from the customer, the lack of strong and effective implementation measures will result in the ISO/TS16949 specification not fully playing its role in the actual application process. The combination of the ISO/TS16949 specification and ERP can make the application of the ISO/TS16949 specification more effective.

#### **4. Discussion on the Fusion Mode of ERF and ISO/TS16949**

Through the correspondence between ERP and ISO/TS16949, it can be seen that the two have great similarities and consistency in management ideas and implementation methods. For these commonalities, this section will be prepared from fusion, integration points, fusion modes and Four aspects of integration implementation are discussed.

##### **4.1 Process Reorganization Preparation.**

Practice shows that the application of ERP system has a close relationship with the company's staff quality, business mechanism, management model, management methods, business processes, process control, organization, rules and regulations, and responsibility. Application of ERP must implement corporate process reorganization to ensure that the company has a scientific and standardized management foundation. The work at this stage is especially necessary for the long-term management of most enterprises in China, and the current low level of ERP application in China. Similarly, in the implementation of the ISO/TS16949 certification program, business process reorganization is also required in accordance with the requirements of the ISO/TS16949 specification to meet the requirements of the standard. For example, ISO/TS16949 requires product design to be customer-centric, and companies should investigate and research customer needs. The customer's actual needs and potential needs are taken as input to the product design, and multiple evaluations, verifications, and confirmations are made during the design process to ensure that the design output can meet the customer's needs. Therefore, before the implementation of ERP and ISO/TS16949 integration, it is necessary to lay a solid foundation for enterprise business process reengineering.

##### **4.2 Highlights of Integration.**

Based on the above analysis, when considering the combination of ISO/TS16949 and ERP, it is necessary to grasp the extent to which "business process reorganization" or "process method" is adopted. In the long run, process methods and business process reorganization can complement each other and work cyclically. Therefore, the process approach and business process reengineering constitute the enterprise's "circular development" picture: optimize and enhance the depth through business process reengineering, and promote the ISO/TS16949 quality management system to make breakthrough improvements at a more efficient level; The method's breadth of specification promotes the implementation of the target business process and strengthens the foundation for further optimization and improvement.

##### **4.3 Integration of ISO/TS16949 and ERP.**

To implement the ISO/TS16949 and ERP integration model, enterprises must first implement the training of people. In the implementation process, we must adhere to the full participation of the staff, promote leadership, and implement the ISO/TS16949 specification and the ERP system in the daily management activities of the enterprise. Second, we must pay attention to improving the management level of enterprises. The ISO/TS16949 specification and ERP have specific scope of application and application conditions. The promotion and application of the ISO/TS16949 specification and the ERP system and the strengthening of enterprise management must be mutually complementary and mutually guaranteed. Finally, pay attention to consulting. The knowledge and experience of the consulting experts should be used to conduct a comprehensive and in-depth systematic analysis of the management status and development trends of the enterprise, identify various problems that restrict the survival and development of the enterprise, propose ideas and methods for improvement and problem solving, and guide enterprises to adopt the plan.

Implementation and internal changes to achieve the goal of improving corporate management, overall quality and economic efficiency.

## **5. Conclusions and Prospects**

This paper expounds the necessity of the integration of ERP and ISO/TS16949 through the analysis of ERP core ideas and ISO/TS16949 quality system requirements; and the consistency of management ideas, management content and management requirements from ERP and ISO/TS16949. The complementary perspective illustrates the possibility of convergence. Furthermore, a preliminary study on the integration of ERP and ISO/TS16949 based on business process reengineering and process methods is carried out, which lays a theoretical foundation for the implementation of integration.

## **References**

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