

# Research on Optimization of Project Procurement Management Process in Telecommunication Enterprises

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**Abstract:** In the project procurement management process of telecommunication enterprises, due to the complexity of technology, the professional procurement project manager is responsible for the whole process of professional procurement in a one-stop way. The integration of this management process superficially improves labor productivity, but in essence lacks effective checks and balances and supervision. In order to supervise the project procurement management process and ensure the legal compliance of procurement management, this paper studies the project procurement management process of telecommunication enterprises, proposes the optimization process of project procurement management in the segmentation of purchasing manager-business manager, and constructs a matrix project procurement management model, which will contribute to the overall improvement of the telecommunication enterprises' procurement performance.

**Keywords:** Telecommunication enterprises; Project procurement management; Process optimization

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## 1. Introduction

Due to the huge investment in communication infrastructure, the procurement of telecommunication enterprises is mainly based on communication equipment and materials, such as mobile communication base station equipment, transmission equipment, core network equipment and IT equipment, etc., and materials such as communication fiber optic cables, communication copper cables, telephone cables, and small components. At the same time, there are also large-scale communications engineering projects involving the design, construction, supervision, and other services procurement, as well as carrying out various types of business information systems integration, business platforms, and other project procurement. In addition, due to the intensification of competition in the market in recent years, with the marketing of advertising, marketing gifts, business hall configuration, and other items required for the procurement of telecommunications enterprises, procurement has become another major category, and the proportion of procurement has been gradually increasing. This is also an important manifestation of domestic op-

erators' response to competition and increasing marketization.

The communications industry is also a technology-intensive industry, with faster iteration of communications technology, and the demand for the application of various information technologies in the era of "Internet +" makes the situation more complex<sup>[1]</sup>. Based on the technical complexity of the traditional procurement project, the telecommunications enterprise procurement management organization formed a professional classification of the procurement manager project responsibility system, requires the procurement manager to have a certain technical background, familiar with the technical performance of communications equipment and materials, usually according to the procurement category distinction, delineation of professional procurement manager, who is responsible for the whole process of the procurement of this type of product. For example, it is divided into professional procurement managers of wireless communication equipment, professional procurement managers of transmission, professional procurement managers of core network, etc. The professional procurement manager is responsible for the whole process of project management of the procurement of these types of products, and the key business processes mainly include:

- (1) Soliciting and defining procurement requirements: quantity, delivery time and place, main technical performance requirements, investment or cost budget, etc.;
- (2) Developing procurement program: determining which procurement method to use, competitive negotiation, bidding, or directed negotiation, preparing procurement documents, commercial negotiation documents, or bidding documents;
- (3) Identify suppliers, complete the procurement, and sign the contract;
- (4) Supervise the arrival and delivery;
- (5) Quality testing and acceptance;
- (6) Payment;
- (7) Supplier evaluation: According to the implementation and completion of the procurement project, the comprehensive ability of the supplier to form an assessment report for later procurement management and the development of medium- and long-term supplier partners to provide a reference basis.

The management of the project procurement process, which is a fundamental link connecting the enterprises in the supply chain, is no longer a simple operational management function under the traditional management model, but has gradually transformed into a strategic management function of modern enterprises. Project procurement strategy centralization, customer bargaining power, procurement management and governance standardization, procurement contract formalization, etc., will have an impact on the project procurement management and governance of the formalization of the use of various supplier selection criteria<sup>[2]</sup>. Supply chain management and procurement process is a key element in every public and private organization<sup>[3]</sup>. It is decisive for the long-term business development of the organization. Firstly, the system of selecting, managing, and evaluating suppliers has been strengthened. Unlike the traditional procurement management model, the relationship between modern enterprises and suppliers is no longer a simple commercial buying and selling relationship, but is converted into a long-term, mutually beneficial partnership. Establishing a strategic partnership with suppliers is an effective means to maintain the interests of enterprises and realize their business objectives. As the source of the supply chain, the status of suppliers is self-evident. The choice of suppliers will not only restrict the manufacturing capacity of downstream manufacturing enterprises but also seriously affect the harmony and stability of the entire supply chain. Secondly, it can improve and optimize the procurement process. The management and improvement of the procurement management process of the project under the supply chain management mode not only includes the

improvement of the internal management operation process of the enterprise, but also includes the management of the external information resources of the enterprise, as well as whether the operational efficiency of the overall supply chain of the enterprise has been improved, and whether it is in line with the principle of cost minimization. Optimize the organization's procurement process, strengthen the cooperation with suppliers, establish strategic partnerships with suppliers, strengthen information sharing and communication, maximize the benefits of both parties, and achieve a win-win situation. Furthermore, it can give full play to the profit leverage of procurement management. Nowadays, modern enterprises have increasingly recognized that procurement management can bring great value to the enterprise. A large part of the enterprise's profits from the savings in procurement costs, such as in the procurement of savings of 1 million yuan, you can directly create 1 million yuan of gross profit, if the enterprise's sales margin of 10%, the creation of equal profits need to increase sales by 10 million yuan, which the high value of the procurement activities created can be seen. In the telecommunication enterprise, this kind of huge investment-driven industry, the profit leverage of procurement is more prominent, the centralized purchasing scale is huge, and can also have negotiation price pressure, creating profit value in the space. By fully optimizing and coordinating the organization and management mode of the procurement project and giving full play to the profit leverage in procurement activities, the enterprise can be invincible for a long time. Finally, the country's external policy regulation and the double constraints of the internal control of enterprises, in the procurement management of the organizational management system and production organization process, must form a set of corresponding management system, checks and balances and supervision of procurement, anti-corrosion and anti-corruption, to ensure that the procurement management and the behavior of the healthy operation of the procurement management and behavior, to enhance the overall effectiveness of the procurement management of the fundamental guarantee.

## **2. Analysis of existing problems in the project procurement management process of telecommunication enterprises**

With the progress of science and technology, the development of social productivity, the user demand has not only improved but also the increasingly fierce competition between enterprises, production, and product-centered management model has not been adapted to the needs of the modern market competition, and has been replaced by a customer demand-centered supply chain management model. Advances in science and technology and the diversification of user needs have shortened the product life cycle, enterprises are generally faced with the pressure to shorten the delivery period, improve product quality, reduce costs, and improve services. All these require enterprises to respond quickly to the changing market, and constantly develop customized products to meet user needs, to capture the market and win the competition. The existing project procurement management process cannot adapt to this change. Effective management of procurement projects requires a more agile and flexible management model<sup>[4]</sup>. In line with the market environment, telecommunication enterprises are facing new situations in competition, and at the same time, the national anti-corruption efforts have increased. The anti-corruption of large state-owned enterprises is a key area of supervision, and the characteristics of the procurement business determine that it has become a top priority in the anti-corruption, and the dual constraint mechanism of external supervision and internal control of telecommunication enterprises requires that they set up a set of more reasonable procurement organization and management mode, and solve the main existing problems at present.

(1) The internal procurement management system is not unified. A general group of companies has a lot of

procurement management rules and regulations, but these rules and regulations are not perfect, and most of them are based on the micro level of the specific operation to develop, from the macro level of the entire procurement decision-making system appears to be relatively lacking and insufficient. Purchasing management functions only within the group and the subsidiaries, branches of the coordination and standardization, but in the subsidiaries, many problems and obstacles exist in the communication between the branches, not to mention the external suppliers, partners between the exchanges and collaborations. Various enterprises in the manufacturing sector, that is, the procurement needs of the department, the lack of understanding of the enterprise procurement process, the market is not familiar enough, but they are often very tough on the views of the procurement department, unwilling to back down, while the procurement department for the two sides of the problems do not understand the explanation, so that the conflict is more intensified in the emergence of the problem, we blame each other and shirk their responsibilities.

- (2) The system is not standardized, the degree of information technology is low, poor traceability. For mega enterprises, according to the enterprise's own procurement process to develop a complete set of standardized procurement management system is not an easy thing. Telecommunications enterprises have a huge system covering the whole country from top to bottom, the whole network, from the group to all levels of branches and subsidiaries of the procurement, both intensive and unified characteristics, as well as immediate and unexpected geographical characteristics. In recent years, telecommunications enterprises have gradually improved the centralized procurement-based, decentralized procurement as a supplement to the procurement management system, but many of the system is not specific refinement and quantification, many effective procurement methods and techniques cannot be documented for posterity to learn for reference, which also makes the procurement performance of the telecommunications enterprises greatly reduced, the procurement of internal audits cannot be adequately carried out. Moreover, the slow processing of procurement information, the lack of rapid and effective information updating, and the lack of analysis and research on the latest procurement data also make it difficult to improve procurement performance.
- (3) Lack of assessment and evaluation mechanisms for procurement. Although the procurement departments of telecommunication enterprises have formulated corresponding procurement management systems, there is a lack of corresponding assessment mechanisms for the personnel of the procurement departments (procurement project managers) and for the activity of procurement project management itself, which results in the system being non-binding and lacking in enforceability. Procurement analysis and decision-making is a major issue, but the leadership decision-making system, that is, the purchaser does not have their own views only according to the leader's decision to implement the procurement project, the leader's decision-making certainly has the inviolability, but due to the leadership of the time and energy of the finite nature of their lack of understanding of the procurement market, it is easy to make decisions based on their own subjective views and experience background. This is quite unscientific.
- (4) The supplier assessment and evaluation index system is not sound, and the results are difficult to effectively quantify and apply in procurement. Long-term, stable, and good supplier relationships are the basis of supply chain value enhancement; if you cannot make a comprehensive, accurate, and objective evaluation of suppliers, it will affect the stability of the supply chain and value acquisition. The assessment and evaluation system of suppliers generally includes quality, cost, delivery capability, service level, technical strength, corporate strength, social value, and other aspects, both simple and quantifiable indicators, as well as soft and difficult-to-quantify evaluation dimensions. How to fully consider the actual production



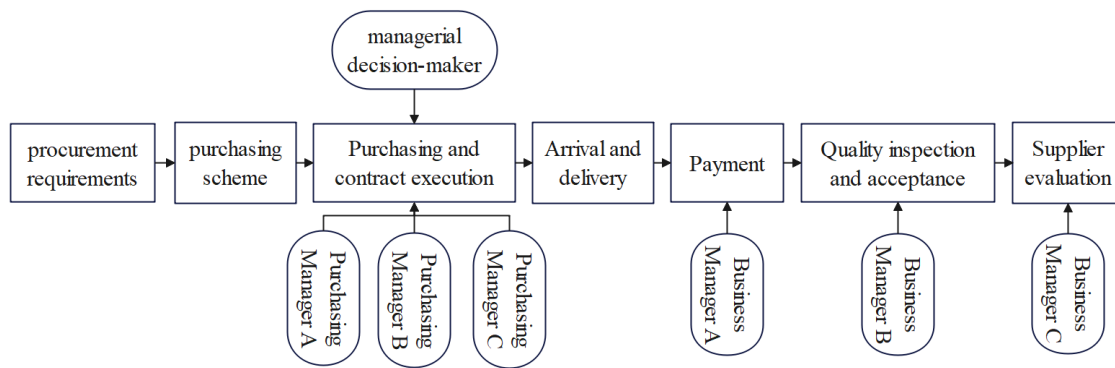
and operation of telecom enterprises, combined with the history of supplier cooperation and practical experience, to establish a scientific and reasonable indicator system and apply it in the procurement behavior is a relatively large topic. Supplier assessment and evaluation index system is often set up to over-pursue the “big and comprehensive,” resulting in the index system being too large, with too many levels of indicators, indicators of the classification are too detailed, which may mislead the decision-makers and shift their attention to some insignificant issues. The key is to effectively quantify the application in specific procurement projects.

- (5) Excessive pursuit of business process integration and a lack of corresponding check and balance mechanisms in procurement organization management. As mentioned above, due to the technical complexity of telecommunication enterprises, the professional procurement project manager is responsible for the whole process of professional procurement in a one-stop shop, and the integration of the business process has improved the labor productivity superficially, but lacks effective checks and balances and supervision in essence. Moreover, the daily purchasing of the enterprise procurement department is often decided by the procurement department, and other departments do not have the right to speak, and cannot objectively and systematically supervise the activities of the procurement management department and judge the level of purchasing. Most of the procurement activities do not involve participation beforehand, supervision during the process, and control afterward, and the decision-making power of procurement is mostly in the hands of the leaders, who lack the corresponding check and balance mechanism, which is not conducive to the improvement of the overall effectiveness of procurement.

### **3. Optimizing the project procurement management process**

The current situation of the project procurement management mode of telecommunication enterprises is the division of labor among procurement managers based on the attributes of the procured materials, and the management of the whole business process of procurement according to the project manager system. The closed management of the project manager responsibility system from the beginning to the end is theoretically more efficient, but it lacks the supervision and evaluation in essence, and the agility of project managers is not high, which is not conducive to the horizontal intervention of the managers and the horizontal evaluation and comparison of different project managers.

According to the characteristics of the business process of procurement, you can separate the three business processes of payment, quality testing and acceptance, and supplier post-evaluation, and set up a comprehensive position independent of the project manager’s procurement business to undertake the business. The resulting construction of a matrix procurement organization management model, which can improve work efficiency, but also the formation of a certain regulatory constraints, the overall improvement of procurement performance to play a catalytic role (**Figure 1**).



**Figure 1.** Optimization diagram of procurement project management process

Compared with the procurement program and technical specifications, the three business processes of payment, quality testing and acceptance, and supplier evaluation are relatively independent, and their technical complexity is not high, so they do not require too much technical background, and can be undertaken by general business personnel. Payment business process is relatively simple, according to the agreement of the procurement contract can be initiated, as shown in the figure, the business manager A to undertake all the procurement manager's payment business, greatly enhancing the overall coordination of fund scheduling, such as the effective integration of different procurement projects may involve the same supplier's payment needs, to facilitate communication with the financial into the fund-raising and scheduling. Quality testing and acceptance, due to the key elements of the procurement program has been clear in the technical specifications of the procurement of products or services, quality testing and acceptance of a clear quantifiable standards and requirements, so this business is also relatively simple, quality testing is generally commissioned to independent, national and industry-qualified third-party testing organizations, business manager B only need to submit the requirements of the technical specifications of the testing organization in accordance with the specifications. The test results and physical acceptance can be combined to complete the business; at the same time, the conclusion of whether the procurement project meets the technical performance. The business of supplier evaluation is relatively complex, as mentioned earlier, it is a multi-dimensional, quantitative, and qualitative evaluation system. In each specific procurement project, the business behavior of the procurement project manager determines the supplier selection, i.e., the procurement project manager selects a particular supplier, and the good or bad evaluation of the selected supplier indirectly affects the performance assessment of the procurement project manager. This association is not conducive to the objective, fair, and effective evaluation of suppliers, so the business organization process should be separated, business manager C is responsible for obtaining relevant information from the procurement project manager, payment business manager, quality testing and acceptance of business manager, integration of the first six business process output of the specific information on the cooperation of the supplier, to formulate a scientifically sound supplier evaluation index system, to carry out a comprehensive evaluation and the formation of the results provide decision-making basis and reference for procurement management decision-makers. At the same time, the results can also be exported to the procurement manager, payment business manager, quality testing and acceptance business manager, in their respective business processes according to the results of different supplier evaluation, the application of different business strategies to improve the performance of their own business processes, so as to improve the overall performance of procurement project management. Such as a supplier evaluation results are A-class strategic partners, the procurement manager in the procurement project scoring for "corporate strength and prospects for

cooperation” in the score should be given a high value different from ordinary partners, payment business manager should be given priority to ensure that the payment of funds, quality testing and acceptance of the business manager in the huge business volume, can be given to the supplier. In the huge business volume, the quality inspection and acceptance business manager can give the supplier the privilege of exemption from inspection and inspection; on the contrary, the procurement manager will give the project a low score evaluation, and the order of payment of funds to be ranked after the increase in sampling batches and efforts, strict acceptance. The supplier to obtain a high level of evaluation qualification, it is necessary to cost, delivery, service, quality, and other aspects of the enterprise to making more efforts. Procurement project organization and management process of the closed loop thus formed, the matrix optimization structure not only takes into account the characteristics of the business of the production organization process, while separates part of the relatively independent business, the formation of effective checks and balances and supervision. In the long run, the overall effectiveness of procurement management can also be improved.

## 4. Conclusion

This paper analyzes the development status quo of the project procurement management mode of telecommunication enterprises to analyze the problem, and puts forward the project procurement management optimization process, and builds a matrix procurement organization management mode, which can improve the work efficiency and form certain regulatory constraints, and play a facilitating role in the overall enhancement of procurement performance.

## Disclosure statement

The author declares no conflict of interest.

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