

Optimizing the Material Management of Electric Power Enterprises Based on Information Technology

Zhichao Li^{1, a}

¹Inner Mongolia Electric Power (Group) Co., Ltd. Ordos Electric Power Bureau, Ordos, China

^ae-mail: 921194164@qq.com

Abstract

With the rapid development of information technology, the role of information means in material management is becoming more and more important. Improving the material management level by means of information technology has become the key topic of most electric power enterprises. Under the influence of highlighting the concept of cost reduction and efficiency, material information management has gradually become one of the most important ways for enterprises to improve their profits. This paper optimizes the material management of electric power enterprises based on information technology, effectively controls and counts material information, so as to increase the speed of material data information circulation, and use real-time information to reduce the cost of material management.

Keywords

Informatization; Power enterprises; Material management.

1. Introduction

Informatization is flooding all corners of life. As an important part of enterprise management, material management is very important to combine informatization methods with material management. The efficiency of material management directly determines the height of the enterprise. For a long time, electric power enterprises have been faced with serious inventory overstock, low material turnover rate, idle and waste of inventory materials and other storage management problems. If we change the procurement method from "purchasing on demand" to "profit first, then purchase", the demand plan and the large amount of inventory data will be compared and calculated manually, which will inevitably increase errors and difficulties. In order to improve the material management ability. This paper proposes to optimize ERP system by means of information technology to develop the function of balanced inventory, so as to realize the automatic comparison and processing of demand planning and inventory, and improve procurement efficiency.

2. The Background of the Topic

In the fierce market competition environment, if power enterprises want to achieve sustainable and high-quality development, they must rely on scientific modern management. For a long time, many electric power enterprises have faced serious inventory backlogs, low material turnover rates, and idle waste of inventory materials. Therefore, it has been urgently needed to strengthen the management of balanced profitability and change the procurement method from "purchasing on demand" to "profitability first, then purchase". The realization of informatization is an important means to improve and enhance management, which not only improves work efficiency, but also reduces work costs. The use of information technology to optimize material management is the actual need of enterprise management, to achieve the management goals of "precise budget transition, control to advance change, service to the front

end, and material and financial integration development", effectively optimize and improve the level of material management and enhance Core competitiveness of enterprises.

3. Brief Theoretical Background

ERP is based on information technology, through advanced management ideas and methods, to integrate internal and external resources of enterprises, through standardized data and business operation process, to integrate human, financial and material resources of enterprises closely, and finally achieve the purpose of resource optimization and business process optimization. After the theory of ERP was put forward, information systems based on this idea have sprung up, such as SAP, Oracle, ifs, Baan, QAD, UFIDA U8, Kingdee K / 3 and so on. These powerful basic software also provide the possibility for the realization of material informatization.

4. OptimizingThe Material Management Of Electric Power Enterprises

4.1. The Construction Of System Automatic Balance Inventory Platform

This paper optimizes the material management of electric power enterprises based on information technology, optimizes ERP system and constructs the system automatic balance inventory platform, so as to realize the automatic comparison and processing of the demand plan and inventory, and automatically select the inventory materials that meet the demand to generate an ERP material allocation list. The system will automatically generate the purchase request number and purchase plan for the materials meeting the demand. The flow chart of Balance Inventory is shown in Figure 1.

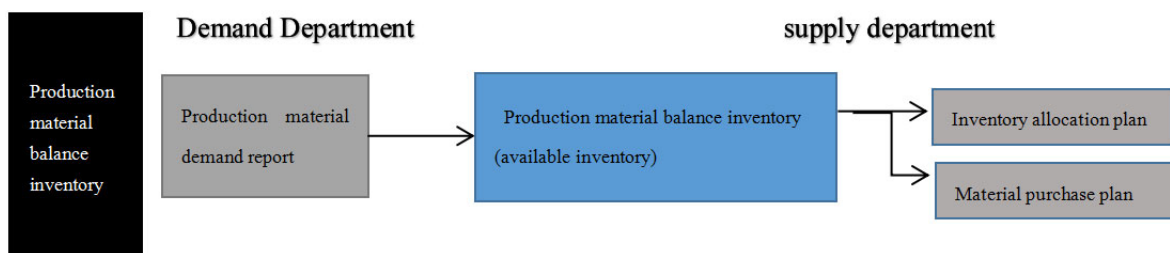


Figure 1. Balance inventory process

4.2. The Construction Of Material Distribution Management Platform

In order to centrally organize materials to ensure that materials are delivered to the material demand site in a timely and accurate manner, change passive supply to active service, and ensure the safe and stable operation of the power grid and the reliable supply of materials. The paper proposes to build a material distribution management platform to realize the online management of the entire process from distribution requirements, distribution plans, distribution execution to distribution settlement. The distribution flow chart is shown in Figure 2.

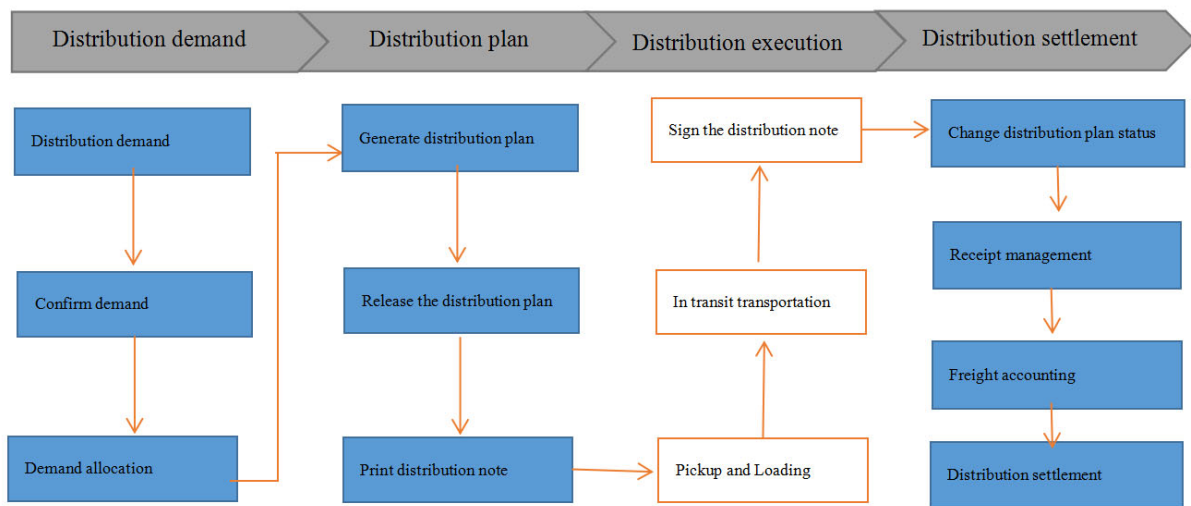


Figure 2. Distribution process

4.3. Usability Analysis

Purchase management is crucial as the starting point of the entire material business, and purchases are inevitably driven by demand. Therefore, the accuracy and scientificity of demand directly affects the accuracy and scientificity of material procurement, and even affects the continuity of the entire material management. By analyzing individual materials in terms of usage amount, usage rate, usage time node and other large numbers, the balance profit library will revitalize the inventory materials, realize the optimal allocation of materials, realize the profitability library does not purchase, greatly reduce the procurement cost, and scientifically purchase Linked with inventory management, accurate feedback will inevitably improve procurement efficiency.

4.4. Real-time Analysis

As we all know, the most important and core content of material management is the real-time supply. The power industry has extremely high requirements for the real-time supply of goods due to the particularity of its engineering projects. The balance inventory platform organizes materials centrally to ensure that materials are delivered to the site of material demand in a timely and accurate manner, changes passive supply into active service, and ensures the safe and stable operation of the power grid and the reliable supply of materials. Build a material distribution management platform with the help of an ERP system to realize online management of the entire process from distribution requirements, distribution plans, distribution execution to distribution settlement. Achieve accurate, rapid, and high-quality supplies of materials to the construction site or the warehouse of the receiving unit.

4.5. Risk Analysis

For supplier interviews caused by supply delays, the supplier interview record form is drafted in the system, and both parties perform electronic signatures in the system to reduce offline contact with suppliers, avoid risks, and draft the "Breach of Contract" in the system "Confirmation Letter", the liquidated damages will be calculated automatically according to the arrival time recorded by the system, and both the supplier and the buyer will electronically sign and sign in the system to ensure that the performance of the contract is resolved online, avoiding risks and improving efficiency.

5. Conclusion and Future Work

This paper proposes to use information technology to optimize the development of ERP systems for electric power enterprises to develop a balanced library function, to promote real-time sharing of inventory information, to strengthen the reasonable reuse of idle materials, to control repeated purchases, to reduce inventory increments, and to save corporate costs. In the future, relying on informatization will further improve safety, quality, efficiency and service assurance levels, and create a modern power grid with high reliability, interaction and friendliness, and cost-effectiveness.

References

- [1] Li Z, Li G, Zhang Y, et al. Risk Early Warning Model for Distribution Network Material Supply Chain of Electric Power Enterprises[C]// 2019 12th International Conference on Intelligent Computation Technology and Automation (ICICTA). 2019.
- [2] Chen J. Research on Application and Countermeasures of Standardization in Material Purchasing Management of Electric Power Enterprises[J]. Quality and Technical Supervision Research, 2019.
- [3] Zhen L I, Gao H W . Discussion on Material Cost Management of State-Owned Electric Power Construction Enterprise[J]. Construction & Design for Engineering, 2018.
- [4] Meng F B. Discussion on Material Management in Economic Management of Electric Power Enterprise[J]. Telecom Power Technology, 2017.
- [5] Xue X, Company M S . Materials Storage Strategy for Power Enterprises Based on Improved CFLP Model[J]. East China Electric Power, 2014.
- [6] Zhou Y, Zhou T. Problems and Optimization Measures of Material Storage Management in Electric Power Enterprises[J]. Value Engineering, 2014.
- [7] Niu D, Gu X . Application of HGPSOA in Electric Power System Material Purchase and Storage Optimization[C]// International Conference on Service Systems & Service Management. IEEE, 2007.