Research and Application of Aptitude Information System and Management Software in Environmental Protection Mechanism

Xiayun Wu
Nanchang Business College of Jiangxi Agricultural University, Gongqing City, 332020, China
xiayunwu2019@jxau.edu.cn

Abstract. Environmental protection is an important measure to maintain sustainable economic and social development. In response to the increasingly complex external environment and the improvement of lean management requirements of enterprises, the financial management of environmentally-friendly enterprises are an effective way to develop blueprints and strategic goals, and it has an important role to improve corporate efficiency. As an important part of the allergy economy, environmental protection enterprises must innovate their financial management models, improve their budget management systems, actively respond to environmental conditions, and strive to maximize their financial value. Based on this background, this paper takes environmental protection enterprises as an example, analyses the innovative methods of lean management of financial affairs within the enterprise, and hopes to provide new ideas for the financial management of the industry.

Keywords: Environmental protection enterprises, financial management, lean management, business management innovation.

1. Introduction
With the establishment and improvement of the socialist market economy system, the role of financial management in business management has become increasingly important. Improving financial management level can promote enterprises to save resources, control expenses, reduce consumption, rational use of funds, and help optimize resource allocation, maintain and increase the value of corporate assets, create more value, and promote enterprises to achieve "maximum with the least consumption". The central goal of "economic benefits" also makes the various economic management activities of the enterprise more harmonious, closer, more effective and safer collaboration. Therefore, the implementation of lean financial management has become a guarantee for enterprises to achieve their strategic goals. Environmental protection is a very important way for the sustainable development of contemporary economy, and financial management of environmental protection enterprises is very important. Financial innovation management for environmental protection enterprises is a powerful guarantee for maximizing corporate benefits. Existing research on lean financial management mainly focuses on two aspects of the lean financial management theoretical framework and lean financial management methods, while the research focusing on mining lean
financial management models is relatively lacking. Based on the above shortcomings, this article adopts a case study method, from the perspective of lean, and takes the financial management implementation process of environmental protection enterprises as the case study object, explores the interaction mechanism between the important components in the financial management implementation process, and summarizes the general application to enterprises. The lean financial management model provides valuable scientific guidance for the further improvement of the financial management level of Chinese enterprises.

2. Theoretical analysis

2.1. Financial management
Financial management refers to a series of scientific management behaviours such as cost budgeting, cost analysis, cost decision-making and cost control in the production and operation process of an enterprise. Financial management specifically includes all members of the enterprise, and scientifically and reasonably manages the business process of the enterprise on the premise of ensuring the product quality of the enterprise. First, the control scope of financial management has evolved from the production area to the full value chain area. Financial management includes all aspects of the company's production and operation process, pre-control, process control, and post-event analysis. Transform the business process of the enterprise into a dynamic process, look at the production process of the enterprise from a global perspective, and then improve the overall competitiveness of the enterprise. Second, financial management focuses on the long-term nature of the enterprise. The purpose of financial management is to ensure the long-term survival and development of the enterprise, and to base it on the long-term strategic goals of the enterprise. And financial management combines the internal and external of the enterprise, and is the financial management of the entire value chain.

2.2. Lean financial management
Lean financial management is based on the needs of customers and the goal of obtaining the maximum benefits by pursuing the minimum cost investment. Lean financial management is to continuously reduce costs, use existing resources to eliminate non-value-added operations, reduce waste, improve efficiency, maximize customer satisfaction, enhance corporate competitiveness, and achieve the strategic goal of maximizing corporate value. Lean financial management is to achieve ex-ante control, in-event management, and post-event supervision to control the entire cycle of product costs.

Lean financial management exists for enterprise strategy and business operation. It combines the idea of lean production and financial management, so that each link of the supply chain can be reasonably controlled. In the face of changes in customer needs, lean financial management pursues zero inventory, achieves the unification of the internal and external environment of the enterprise, and enhances the competitiveness of the enterprise. From design research and development, procurement, production, sales, logistics and distribution to after-sales service, the company conducts comprehensive cost control to eliminate non-value-added operations and eliminate waste. Figure 1 shows the connotation of lean management [1].

Figure 1. The connotation of lean management.
3. Current financial management status of an environmental protection company

The environmental protection company has a wide variety of raw materials, including iron and steel materials (hot metal, scrap steel, self-generated iron and outsourced pig iron, etc.), alloy materials (aluminium blocks, aluminium particles, ferrosilicon powder, etc.), pellets, oxide balls and other raw materials. It accounts for 45% of the cost and a large proportion of the cost, which is a major feature of the company's current financial management. The difference in the specifications and grades of each raw material directly affects the quality and cost of its raw materials. Therefore, cost control of raw materials becomes the key to cost control. In the formulation of the cost of stainless steel, the cost is fixed. It does not combine the changes in the market and the needs of the market. It simply judges the strength of the consumption index from the level of metal consumption, and does not comprehensively balance the various factors. Guide the angle to control the cost of metal. Figure 2 shows the company's financial management system.

![Figure 2. Corporate financial management system.](image)

3.1. Issues to be addressed before implementing lean management

3.1.1. Disconnected product development stage from cost control. 80% of the company's product cost has been determined during the research and development stage. For a professional, large-scale manufacturing enterprise, the product design and development stage are the most important link in the entire value chain of the company. At the product design and development stage, the technological route and cost of different specifications of steel grades, as well as the costs of procurement, production, sales, logistics distribution and after-sales in different links have been determined. However, environmental protection companies have previously implemented traditional financial management methods. In order to meet customer needs, there may be excess design quality and functions. The design plan has been determined, and the cost control product production stage is too late. Therefore, the financial management of the enterprise's research and development stage cannot effectively carry out cost accounting and control, resulting in the cost control of the entire supply chain cannot be optimal, and the waste and losses caused are inestimable [2].

3.1.2. Product production does not match customer needs. In efficient financial management, the goals and content of financial management must meet the needs of customers, respond quickly to market changes, and adhere to the concept of creating value for customers and the principle of timely production (JIT). At the same time as rapid economic development, market competition has increased, supply-demand relationships have been unpredictable, and customer needs have also differentiated. If managers lack awareness of the value-added of customers and do not pay attention to customer needs, it may cause excess capacity and increase business pressure.

3.2. The Necessity of Implementing Lean Cost Management in Enterprises

The traditional cost management is to increase profits by increasing the selling price, and use the formula "selling price = cost + profit" to carry out cost management. However, increasing the selling
price is not good for the company's market share and is not suitable for the long-term development of the company. From the perspective of lean cost management, improving corporate profits by reducing costs, that is, applying the formula of "cost = sale price - profit" to implement effective cost management.

Lean cost management has perfected the entire supply chain. From the source R & D design stage, the cost has been controlled to minimize the cost of the entire supply chain. From R & D design, procurement, production, sales, logistics distribution and after-sales service all links are cost controlled, eliminating non-value-added operations as much as possible, and optimizing the entire supply chain. Lean cost management is based on competition between enterprises, highlighting the advantages of competition among enterprises, so that competition not only stays on products and services, but also reflects on the entire supply chain of the enterprise. Lean cost management is also based on customer demand, linking product production to customer demand, focusing on customer value, and reducing inventory to capacity. Lean cost management also effectively integrates the financial department and the business department to effectively allocate resources and achieve lean management of product costs.

4. Application of lean management in financial management of environmental protection enterprises

4.1. Support Tools for Implementing Lean Cost Management——Establishing ERP Information System Platform

With the continuous innovation and development of modern information technology, on the road of rapid development of information technology, UFIDA ERP information system came into being. The ERP system is based on the mature development of information technology. It systematically manages enterprise resources, integrates enterprise resources, and meets the needs of business management. ERP-NC is a comprehensive information system for enterprises. It integrates financial accounting, management accounting, supply chain, manufacturing, human resource management, customer relationship management, enterprise performance management, knowledge management, etc., covering enterprises. All departments and procedures. The ERP-NC system is based on the core concept of centralized management, uses the Internet as the medium, and adheres to an internationalized management method. Based on this, it provides customers with solutions [3].

![ERP system](image-url)
As can be seen from the above figure, the ERP-NC system is a shared service center of the enterprise, which focuses on the business of the enterprise and integrates the business with the information system to support the lean cost management process of the enterprise. The financial module in the ERP system realizes the horizontal and vertical integration of the enterprise. Both the parent company and the subsidiary companies calculate under the A/C set in this system, so that the information is shared in real time, and the information is shared among the cost management systems of the enterprise.

4.2. Implement comprehensive budget management

In order to achieve effective control of product costs, promote continuous improvement of cost targets, and carry out a comprehensive budget for cost targets, the environmental protection company began to implement comprehensive budget management as early as 1999 [4]. The PDCA cycle is divided into four phases: planning, execution, inspection, and processing. First set a target for product cost, predict product cost and formulate methods and measures to achieve the target to achieve ex-ante control; then in the production and production link, put various plans into practice to ensure the realization of budget goals; the third stage is to control the budget management in the matter, to check whether the product cost has reached the expected target, and to find out the existing problems; the last stage is to control the budget management after the fact, sum up the experience, take the experience of success, and for the deficiencies and the remaining issues are left to the next cycle and continue to be resolved.

The PDCA cycle forms a closed-loop model, which enables comprehensive budget management to achieve comprehensive management before, during, and afterwards. In budget management, accounting, statistics, and financial analysis are the focus of measurement in budget management, which helps to improve in the future. The company combines business, finance and performance from three aspects of responsibility and rights to achieve PDCA cycle management of comprehensive budget management. Figure 4 the application of PDCA cycle management in this enterprise.

4.3. Unified aggregation principle, fine cost management

The fine accounting after "small scale" requires that the costs be accurately collected into the small business units. If the budget release has been decomposed into the business units and other smallest units of the company, they can be directly aggregated and calculated based on the actual costs. To the smallest unit, it is necessary for the financial department to make scientific allocation and apportionment according to the principle of relevance, to unify the principle of cost collection after "decreasing", and to achieve fine cost management has become an important method to promote "lean financial management" for enterprises. According to the industry characteristics of environmental protection enterprises and the relevance of cost attribution, their cost items can be divided into two major categories: one is directly related costs, which need to be detailed calculated according to the "smaller" accounting unit and directly grouped; the other is indirect Relevant costs need to be
scientifically apportioned according to certain cost-related attributes of the accounting unit after "reduction" and then collected. As shown in Table 1, the relevant financial indicators and corresponding data of the company [5].

Table 1. Financial indicators and corresponding data.

| Serial number | Financial indicator                  | Annual budget | Actual amount | Increase / decrease rate /% |
|---------------|--------------------------------------|---------------|---------------|-----------------------------|
| 1             | Annual output / 100 million tons     | 1.95          | 2.02          | +3.58                       |
| 2             | Total annual profit / 100 million yuan| 235           | 243           | +3.40                       |
| 3             | Controllable cost / yuan             | 104.38        | 99.20         | -4.96                       |
| 4             | Sales volume / 10,000 tons           | 15100         | 15401         | +1.99                       |
| 5             | Professional service fee / 100 million yuan | 48.41 | 47.89 | -1.07 |
| 6             | Logistics service fee / 100 million yuan | 24.07 | 23.86 | -0.87 |
| 7             | Product comprehensive price / yuan   | 301.99        | 304.69        | +0.89                       |

Examples of direct related cost aggregation processes. The first is the cost of employee compensation (wages, insurance), which is usually calculated by the human resources department according to the "smaller" accounting unit and then collected and submitted to the financial department for detailed accounting. The second is the maintenance and distribution costs of the main distribution network, usually by the project. When applying for expense reimbursement, the execution unit is subdivided into "small" post-accounting units based on the location of the project for detailed accounting by the financial department. Third, physical office consumables and items are usually reimbursed by the office and other comprehensive departments for project expenses and Relevant items are subdivided into "small" post-accounting units and submitted to the financial department for detailed accounting; the fourth is other professional service costs (information system maintenance, intermediary fees, etc.), usually by the project implementation unit when applying for reimbursement of expenses According to the service department, it is subdivided into "small" post-accounting units for detailed accounting by the finance department [6].

An example of the indirect related cost aggregation process. First, the cost of employee compensation (union funds, education funds) is usually apportioned by the financial department based on the total monthly salary of each "smaller" accounting unit to complete the detailed accounting. Second, depreciation and amortization costs are usually financed by the department calculates the depreciation and amortization cost of each unit based on the value of assets under management or actual use and the depreciation rate of each unit after the calculation of the "small-sized" units. The third is the real estate and land taxes and fees. The real estate value and land area under the "small" post-accounting unit are allocated to each accounting unit; the fourth is that it is difficult to directly integrate the total cost, which is usually provided by relevant departments according to the "small" post-accounting unit and is associated with such costs Reasonable apportionment of attributes that can be counted separately.

5. Summary
"Lean" is a kind of consciousness, a concept, and a culture of excellence. Applying "lean" to corporate financial management is conducive to better cost savings and stable and healthy development. "Small accounting unit" is an effective means of lean management. "Small division" can allow the smallest unit of the enterprise to achieve leaness fundamentally, let the lean concept run through every link of production and operation, timely find and correct waste, and help enterprises to continue develop and grow. The environmental protection enterprise system is huge, important, and has a high level of financial management. It is believed that through reasonable "small scale", fine accounting, and
effective management, it can vigorously promote the realization of "lionization" and create greater economic value.

References
[1] Harrington, H. J., Charron, R., Goehl, F., & Wiggin, H. The lean management systems handbook., 41 (4) (2015) 421-422.
[2] Röcken, C. [industry 4.0 in pathology: process optimization by lean management]., 38 (6) 489.
[3] P Arora. (2016) Application of lean principles / lean management can improve. Indian Journal of Medical Microbiology, 34 (2) (2017) 259.
[4] Ala'a Abuhejleh, Mohammed Dulaimi, & Samer Ellahham. Using lean management to leverage innovation in healthcare projects: case study of a public hospital in the uae. Bmj Innovations, 2 (1) (2016) 22-32.
[5] Lai, T. L., & Xing, H. Risk analytics and management in finance and insurance., 19 (20) (2017) 42-4.
[6] Schuh, G., & Stüer, P. Framework for lean management in industrial services., 29 (5) (2017) 1265–1277.