

THE IMPROVEMENT OF PROCESS COSTING METHODS IN COST ACCOUNTING

Tashnazarova Difuza Samiddinovna, Ph.D

Tashkent State Agrarian University "Department of Accounting, Analysis and Audit" acting Associate Professor

Annotation: Process costing, an essential cost accounting tool for many industries continues to evolve in response to technological advancements and shifting business needs. Modern approaches, incorporating artificial intelligence, blockchain, and the Internet of Things, offer companies unparalleled precision, efficiency, and transparency in cost accounting. As businesses operate in an ever-changing landscape with increasing competition, innovations in process costing will be pivotal for their success and resilience, enabling quick, informed, and strategic cost-related decisions.

Key words: Process costing, Cost accounting, Technological advancements, Artificial intelligence, Blockchain, Internet of Things (IoT), Business innovation, Decision-making, Operational efficiency, Strategic planning.

Introduction

Process costing is a costing method used in manufacturing industries where production is carried out in a continuous flow or where goods are mass-produced or mass-produced. In contrast to custom costing, where each order is considered separately, process costing collects production costs by stages or departments, distributing the total costs among all produced units.

Historical Context

With the development of the Industrial Revolution and the increase in the scale of production, the need for a cost accounting method that could track the costs of mass production became relevant. In the early 20th century, the focus was on collecting and analyzing direct labor and material costs, while indirect costs were often ignored or allocated in proportion to direct costs.

Over time, as production processes have become more complex and accounting research has deepened, process costing methods have become more complex and accurate. In the mid-20th century, new methods of allocating indirect costs, as well as methods of accounting for loss and waste, emerged.

At the end of the 20th century and the beginning of the 21st century, with the development of information technology and automation of accounting systems, process calculation has become even more dynamic and adaptive, allowing companies to quickly respond to changes in production conditions and the market environment.

Current Challenges

1. **Complexity of indirect cost allocation:** Existing methods may not always accurately reflect the true allocation of indirect costs across products or processes, which can lead to distortion of the cost of goods.
2. **Process standardization:** Process costing is most effective in a standardized production environment. In situations where production is changing or adapting, traditional methods may not be effective.
3. **Loss and waste accounting:** Not all methods adequately account for loss and waste, which can lead to underestimating or overestimating the true cost per unit of production.

4. **Technological change:** With the rapid development of technology, production processes are becoming more complex, which requires accounting systems to be more flexible and adaptable.
5. **Lack of time consideration:** Time plays a critical role in modern manufacturing. Traditional process costing methods may not take into account the time spent on the various production steps.
6. **Lack of integration with other systems:** To get a complete picture of costs, it is necessary to integrate the process costing system with other accounting and operating systems of the enterprise.
7. **Difficulties in adaptation:** Implementing new methods or changing existing ones can be costly, both financial and time-consuming, and may face resistance from staff.

Thus, despite the many advantages of process costing, existing methods face a number of challenges that may limit their effectiveness in today's manufacturing environment.

Improvements and innovations: New methods and approaches to process costing.

1. **Decentralized AI-powered costing:** With the application of artificial intelligence, it is possible to analyze and allocate costs at a more granular level, providing deep insights into the cost structure.
2. **Real-time:** New technologies enable real-time costing, enabling rapid response to changes in the production environment.
3. **Activity-Based Costing (ABC):** This method treats an activity or operation as the main cost center, allowing you to identify cost sources more precisely.
4. **Blockchain technology:** It can be used to create transparent and continuous cost chains, improving accuracy and reducing the possibility of errors.
5. **IoT Integration:** Sensors and devices connected to the Internet of Things can automatically collect data about the manufacturing process, improving the accuracy of material and labor accounting.
6. **Forecasting and optimization:** With the application of analytics and machine learning, companies can predict future costs and optimize production processes based on these predictions.
7. **Cloud-based systems:** Moving process costing to the cloud can increase the availability, scalability, and flexibility of the system, making it more adaptive to changing conditions.
8. **User Interface and Visualization:** Modern systems offer intuitive interfaces and visualization tools that make the costing process more understandable and accessible to different levels of staff.

Implementing these innovations and improvements can help companies overcome the traditional limitations of process costing, improving the accuracy and efficiency of cost accounting.

Practical application: Examples of successful use of new methods.

1. **Automotive:** Major automakers are integrating IoT sensors into their production lines to collect data on every step of the vehicle's assembly. This allows you to better understand and control costs, as well as optimize the production process.
2. **Pharmaceuticals:** Companies in this industry are using activity-based costing to more accurately track the costs of drug research and development, manufacturing, and testing.
3. **FMCG (Consumer Goods):** Some companies are using blockchain technology to track raw materials and their value all the way from the supplier to the final product.
4. **Airlines:** Using analytics and machine learning, some airlines have optimized their operating costs by predicting fuel, maintenance, and flight management costs.
5. **Agriculture: Farmers and** agribusinesses are integrating IoT sensors to monitor soil conditions, weather, and plant health. This allows them to better understand their costs and make informed decisions about planting, fertilizing, and yielding.

6. **Retail:** Retail chains use cloud-based systems to monitor and analyze sales, personnel costs, rent, and other operating expenses in real time, allowing them to quickly adapt to changing market conditions.

These examples demonstrate how new methods and technologies of process costing can be successfully implemented in various industries to improve the efficiency of cost accounting and provide a competitive advantage.

Conclusion:

Process costing, a key cost accounting tool for many industries, continues to adapt and evolve in response to technological innovations and changing business needs. Modern approaches and tools, such as artificial intelligence, blockchain, and IoT, provide companies with new opportunities for accurate, efficient, and transparent cost accounting. Applying these innovative practices can help organizations not only streamline their current operations, but also pave the way for a future where cost decisions are made quickly, informed, and strategically. In an era of a rapidly changing business landscape and increasing competition, innovation in process costing will play a crucial role in the success and sustainability of enterprises.

References:

1. Бухгалтерия ҳисоби тўғрисидаги қонун, 7-модда. <https://lex.uz/acts/2931253>
2. Мирзиёев Ш.М. Танқидий таҳлил, қатъий тартиб интизом ва шахсий жавобгарлик – ҳар бир раҳбар фаолиятининг кундалик қонидаси бўлиши керак., 2017 йил 14 январь.-Тошкент: “Ўзбекистон”, 2017, -26 б.
3. Ўзбекистон Республикаси Президентининг 2020 йил 24 февралда ПҚ-4611
4. “Молиявий ҳисоботнинг халқаро стандартларига ўтиш бўйича қўшимча чора-тадбирлар тўғрисида”ги қарори. <https://lex.uz/docs/4746047>
5. <https://qomus.info/encyclopedia/cat-i/ishlab-chiqarish-xarajatlari-uz/>
6. <https://qomus.info/encyclopedia/cat-t/tannarx-uz/>
7. Ст.253 НК РФ “Расходы, связанные с производством и реализацией”
8. Ўзбекистон Республикаси Солиқ Кодекси. <https://lex.uz/docs/4674902#4684425>