BACK-FLUSH ACCOUNTING
IN JUST-IN-TIME BUSINESS

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The just-in-time (JIT) production is adopted by enterprises with a view to attaining the competitiveness. The JIT implementation may substantially change the business operations, forcing the accounting disclosure to be changed accordingly. By going over the JIT production, the authors will analyze features of the traditional accounting methods in order to prove that the JIT business must be accompanied by the back-flush accounting, which is supposed to be the most suitable for the JIT business, thereby presenting basic features of the back-flush accounting method.

1. Abstract

In the present-day competitive business climate, its participants must try its best to remain their standing. They reduce the production costs and improve product quality with a view to satisfying the most stringent consumers. The birth of JIT has helped enterprises enhance their competitiveness in that it helps save production costs, insure the product quality and deliver goods in time (Swenson & Cassidy, 1993). This method was first adopted by the Toyota of Japan in the 1970s, then it was employed widespread by many enterprises in the world. Recently, several of foreign-run companies in Vietnam such as Toyota, Nike, Honda, Canon and Liksin have implemented this JIT in a hope of well adapting to the competitive trend in the context of globalization.

The JIT production is the consecutive process which helps reduce the in-process inventory and the production time to the minimum. A JIT business must be started from the purchase orders so as to define what to make and what inputs to acquire. In the traditional production method, once the enterprise predicts the market demands, it will plan to acquire raw materials and then comes into production. Products are often kept in stocks prior to before tradable. For this reason, the JIT implementation will basically make a change in the enterprise's operation, causing the information demand at service of business management to be changed accordingly (Dalci & Tanis, 2004).

The traditional accounting method concentrates on recoding and disclosing information adequately from the acquisition of raw materials, storage and in-process arising issues to storage of inventory and sale. Yet, once an enterprise starts implementing JIT, the traditional accounting method may be unsuitable in this case (Johnson, S., 2004).

2. Introduction to the JIT production

The JIT production may be construed as a goods production based on the consumer demand so as to reduce the in-process inventory and associated carrying cost to the minimum. The philosophy of JIT is very simple: inventory is waste. Therefore, during the production, each process is manufacturing each component in line with another department to build a final part to the exact expectation of delivery from the customer. In other word, the center of JIT production is the pull system where just the quantity of items needs are made and the final stage of production will 'pull' the operation of previous ones (Hiroyuki & Furuya, 2006). For instance, as in a motorcycle factory, the enterprise will base on the purchase order to plan the operation of each stage of production, raw materials, machinery and workforce for the beginning production. The later stage of production is deemed as the consumer of the previous one and no item or component will be produced in the previous stage of production without the order of the later one. For this reason, the JIT production will reduce the inventory of raw materials, semi-finished products and finished products in stocks (Atkinson & Kaplan, 2004).

As was stated above, this depletion is merely

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because raw materials is just acquired when needed; the semi-finished products will not be produced if they are not needed by the next process and the finished products are immediately delivered to consumers right after completion. Thanks to JIT, the enterprise may save a lot of costs such as those on acquiring materials and inventory; and associated costs like workforce payment, depreciation on warehouse and devaluated inventory, delivery of materials and semi-finished products within the factory, etc.

If the enterprise may perfect a consecutive production process, the materials and semi-finished products of previous process will be always available for the next stage of production use. Thus, if implemented correctly, the enterprise may save substantially inventory of raw materials, semi-finished products and finished products and the production time as well.

For the consumer-oriented production in the JIT business, any activity not generating the value added to consumers is deemed as unnecessary and must be left out (Ward & Graves, 2004). Simultaneously, the JIT implementation also forces enterprises to set up a standardized and effective production process which is put under the stringent control with a view to insuring the product quality. Through that, the competitiveness of JIT business will surely be improved due to the fact that it provides consumers with high-quality-but-low-cost products and such the products are delivered in time.

3. Features of traditional accounting method

With regard to the traditional accounting method, the production process is planned on the basis of maximizing the enterprise's production competence and according to the 'push system'. Accordingly, the next stage's inputs depend on the quantity of items outputted in the previous stage of production (John, 2000). In addition, in order to make the most use of machinery and workforce available, goods are often made more than needed so as to have a buffer stock and in the long time. In other word, the philosophy of traditional production is that because the production is based on the enterprises' competence and the enterprises would like their products to be consumed, they inventory raw materials, semi-finished products and finished products in large quantity with a view to insuring the production and consumption.

In order to have adequate information and control assets during the production, it is a must to record costs corresponding to each production stage, thereby calculating the finished product cost as well as the value of semi-finished products in each stage. The traditional accounting must track adequately and continually all economic practice arising in accordance with the sequence of production from acquisition of raw materials to sale of finished products. This method may be described as follows.

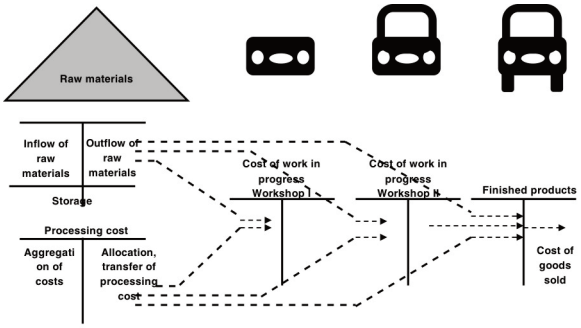

Figure 1: Traditional accounting model

In brief, the traditional accounting method has the following features.

- Recording and tracking fully accounts concerning inventories of raw materials, semi-finished products and finished products;

- Executing a lot of book entries regarding acquisition of raw materials and distribution of raw materials for production, production costs, stocking finished products and trade sale, etc.;

- Employing methods as the weighted average method, LIFO, FIFO and specific identification method, etc. to value the inventories;

- Listing and evaluating semi-finished products by the end of accounting period;

- Defining the value of finished products on the ground of the total costs arising within the accounting period, in which, costs on raw materials and workforce are deemed as direct overheads; the general cost running business are indirect overheads collected within the accounting period and distributed to each finished product according to a certain method such as the workforce payments.

- Dividing the production costs within the accounting period into two parts: cost of goods sold and inventory;

- Costs controlled on the basis of regular observation and reports on the production cost of each stage.

4. An outline of back-flush accounting

a. Formative basis for back-flush accounting:

Application of the above-mentioned accounting method serves well companies following the traditional operation systems. As for companies with the JIT system, the process of making production plan and demand for management information have experienced a sea change although their production process is still a traditional one. The production only starts according to purchase orders; and the calculation of production cost, overheads, and cost of goods sold are also based on the orders. As for the JIT-based companies, their production and supply processes have to follow the strict system of setting workload, which allows application of the method of calculating the production cost based on the purchase order. That is why the cost of products in progress at the end of the period is the cost of orders to be filled. This makes the calculation of cost based on production process unnecessary, namely, the companies do not need accounts recording costs of different production stages and products to be finished (Dalci & Tanis, 2004). Moreover, acquisition of raw materials only takes place after receiving the purchase order and they will be used up when filling the order with the result that the company does not need methods of calculating cost of goods delivered.

We can see that changes in the management based on JIT system compared with traditional production patterns creates a basis for the back-flush accounting, a newer and simpler accounting method, while the supply of appropriate and useful information to the management is still ensured.

b. Characteristics of the back-flush accounting:

The back-flush account starts from output of the production process in which records of operations related to this process are only made when the products are finished and/or delivered to customers (Martin, 2006). This means that after products are made and delivered to customers, the accountant starts tracing costs related to the production of the said volume of finished products. In other words, although the production still follows the traditional model, the accountant, instead of recording arising operations chronologically, waits for the order to be filled and starts to calculate expenses on raw materials and processing costs according to standards adopted by the company, thereby identifying the production cost or cost of goods sold. The accountant does not record costs from each production stage or the whole production process in accounts of products in progress.

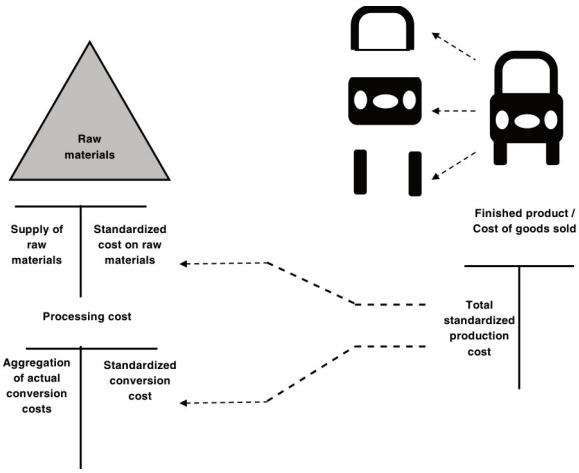

Figure 2: Back-flush accounting model

At present, there are two cases of application of the back-flush accounting based on trigger points when costs are included in inventory value (John, 2000 & Johnson, 2004).

- Case 1 - Accountant records two "trigger points": In this case, the back-flush accounting is not applied radically. The company still employs two inventory accounts for raw materials and finished products.

+ When buying raw materials:

Liability Account: raw materials (in actual price)

Asset Account: liabilities, cash...

+ When the product is finished, the accountant records raw materials and processing costs on the volume of finished products in:

Liability Account: Finished products: standardized production cost

Asset Account: Raw materials: standardized use of raw materials

Asset Account: Processing cost: standardized processing cost

This case is applied when the company keeps raw materials and finished product inventories at a certain safe level to ensure a continuous production and distribution process.

- Case 2: Only one trigger point is recorded when the finished product is made or delivered to

customers. The accountant records entries in the following accounts according standardized costs:

Liability Account: Finished product or cost of goods sold

Asset Account: Liability, cash

Asset Account: Processing cost.

Aggregation of actual processing cost in both cases is not different from each other. The accountant makes entries in liability account (processing cost) and corresponding accounts on the asset column.

Although companies adopt different ways of applying the back-flush accounting, continuous record of costs in various accounts according to traditional accounting becomes unnecessary for managers and they are put aside. This practice helps reduce considerably the number of entries related to the production process and makes the accountant's workload less heavy (Dalci & Tanis, 2004).

Moreover, in applying the back-flush accounting, the accountant's work only starts from recording the standardized production cost or cost of goods sold to recording actual raw materials and processing costs because all costs are only recorded when the finished products are delivered to customers. If some differences between standardized and actual costs exist, the accountant should adjust them at the end of the period. Besides these tasks, the accountant need not work out the price of outflow raw materials, inventory and value of work in progress in order to identify the value of inventories as required by the traditional accounting.

c. Handling of the difference between standardized cost and real costs:

As was mentioned above, when a product is completed or sold, the accountant records the value of the finished product or the cost of goods sold in accordance with the standardized cost of each purchase order. Then, relevant documents are accounted in order to confirm actual costs and record them once again by the end of each accounting period. Though enterprises applying the JIT model are always interested in confirming standardized cost as an effective instrument to control cost, there are always a difference between actual cost and standardized cost for many reasons. The difference between standardized cost and actual cost of raw materials is caused by the change in the raw materials prices and the production mistake. This difference rarely occurs because enterprises are aware that the price of raw materials and the loss of raw materials in the JIT business is not popular. However, the difference between standardized cost of production and the actual cost always exists. For enterprises applying JIT production system, production cost is recognized as indirect overheads that occurs whether the enterprises do produce or not. At the same time, the standardized cost of production depends on the designed capability of enterprises. Thus, when enterprises do not have enough purchase orders and do not make the most use its designed capability, a difference would occur between the fixed overheads and the allotted cost for meeting purchase orders.

The management of the difference between standardized cost and actual cost is often carried out by direct adjustment on the account of finished product or that of cost of goods sold (John, 2000; Johnson, 2004; Dalci and Tanis, 2004) at the end of each accounting period in order to confirm the value of the finished product or the cost of goods sold in accordance with actual cost as follows:

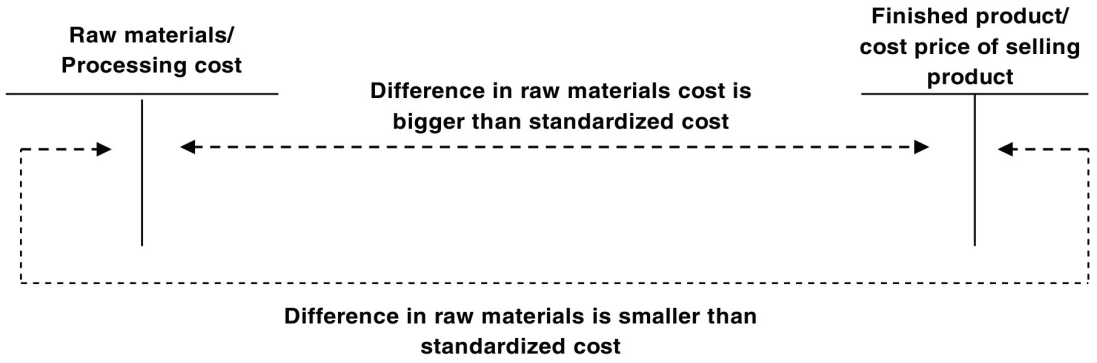

Figure 3: Direct adjustment on account of finished product or on the account of cost of goods sold

However, for enterprises with long production cycle, if the production is not maintained regularly in the accounting periods of a year, the difference between standardized cost of production and the actual cost is rather big. When this happens, enterprises could adjust book entries on the undistributed account to handle it at the end of accounting year.

d. The possibility of applying back-flush accounting method:

The back-flush accounting model helps bring lots of profits to enterprises that apply the JIT production system which helps reduce considerably accounting costs and could provide appropriate and relevant data for the better control of cost. For the traditional method, only at the end of each accounting period could enterprises analyze the fluctuation of cost by comparing the actual cost with the standardized one. Meanwhile, enterprises applying back-flush accounting method could control fluctuation of cost during the process of production by applying standardized costs during the process of planning and implementing. Based on accounts designed to provide data on the difference between the actual cost and the standardized one, enterprises could at once analyze causes affecting the upheaval of cost. When a non-standardized cost arises, enterprises could use warning documents for amounts exceeding the standardized costs. Moreover, the management of difference between the actual cost and the standardized one in back-flush accounting always helps enterprise managers have data to control upheaval of cost better.

However, the back-flush accounting method does not put much emphasis on data on inventory in each stage of the production. Especially, for enterprises with long production cycle, the value of raw materials at the end of a production process would expose them to difficulties in auditing because such an accounting process would not leave any traces of accounting.

5. Conclusion

The JIT production system is a modern production model that brings to enterprises many interests and much competitiveness. By using the pull system to reduce the inventory cost to the minimum, activities that could not create any value added for the customers will be unnecessary and be the fundamental for executing a better accounting method. The back-flush accounting method is absolutely different form the traditional one. The recording of cost is done once the production is completed. Thanks to the application of standardized costs on the basis of purchase order, it is possible to get rid of many accounts and book entries but insure the accounting disclosure within the JIT business. In these enterprises, accounting practice becomes simpler; production time and workforce can be saved more. For that reason, the back-flush accounting is the proper accounting method and is often used in JIT business. However, it should be noted that the back-flush accounting method is not suitable for every enterprise in absolute term. It still has some certain limits and enterprises should find out more about it before deciding to use this method■

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