

Experience of Inventory Management Accounting in a Number of Countries in the World — Lessons Learned for the Vietnamese Manufacturing Enterprises in Integration Period

Huong Thao Phan, Tram Anh Le
(Thuong Mai University, Vietnam)

Abstract: In enterprises, inventory always plays a very important role in the process of production and business activities. For good management of cooperatives, there must be an effective combination between functional departments in the enterprise, in which management accounting is an important management tool indispensable for administrators. Management accounting provides managers in the enterprise with regular information on each type of cooperative system, assessing the current status and economic efficiency that they bring in each business period to ensure the medium of production continuous production while saving storage costs at the most reasonable level to operate business efficiently. However, inventory management accounting in VietNameese enterprises is still a relatively new content, so the organization and implementation process is still inadequate and embarrassing, resulting in incomplete, timely and unresponsive information meet the management requirements for this important asset division of the business (Pham Thi Tuyet Minh, 2015). It is therefore necessary to study the application of inventory management accounting in some developed countries in the world such as Japan, France, USA to draw lessons for the Vietnamese manufacturing enterprises in integration period.

Key words: experience; enterprise; inventory; inventory management accounting; integration period

JEL code: M410

1. Introduction About the Role of Inventory Management Accounting in Enterprises

In enterprises, inventory (INV) always plays an important role in the process of production and sale. Inventory is idle resources stored for future use. Inventories represent more than 50% of total investment cost of an organization. It was also a potential source of waste that needs to be reviewed regularly and closely reviewed e.g., through perpetual stock taking, periodic reviews also as well as internal and external auditing. Another view is that inventory is the number of goods and products created to meet a future demand. This can be manufactured products or supply materials during the manufacturing process. If the company has an optimistic viewpoint and is not worried about inventory costs, it will increase the inventory level to meet the business demand. Therefore, during the recession period, the enterprise will reduce its inventory. In order to manage INV better, there must be an effective cooperation of functional departments within the enterprise, in which accounting is an indispensable

Huong Thao Phan, Ph.D., Thuong Mai University. E-mail: thaoktc@gmail.com.

management tool for managements. INV in enterprises exists under a physical form, including many different objects, types, characteristics, storage conditions and formed from many sources. Determining its quality, condition, as well as the value of INV, is a difficult and complex task, which is not only reflected in the perspective of financial accounting but also management accounting. Poor inventory management accounting can result in increased costs during construction. Efficient management accounting of inventory can result in substantial savings in project costs. If inventory are purchased too early, capital may be held up and interest charges incurred for the excess inventory of inventory. Inventory may deteriorate during storage or get stolen unless special care is taken. Delays and extra expenses may be incurred if inventory required for particular activities are unavailable (Okwaro et al., 2017). However, management accounting in general and inventory management accounting (IMA) in particular in the manufacturing enterprises in Vietnam is still a relatively new concept, so the implementation process is still inadequate. Subsequently, there is not enough or updated information to meet the management requirements for this important asset division of the Enterprise.

Literature reveals that municipalities play an increasingly important role to deliver basic governmental services to the community. To achieve this, governments around the world, on all levels, have invested significant resources in municipalities with very mixed results, according to Schatteman (2010). As one of these municipal resources, inventory has become more complex and fragmented, and the question how it should be controlled has become more critical. Likewise, a study conducted by Schatteman (2010) in France reported municipalities to have abused government resources including inventory stocks. The author concludes that country municipalities need to be audited before any realistic measurement is made. Another study by Huefner (2011) found that inventory control was weak and caused losses in the twenty four municipalities of New York State. In the same manner, an article of Internal Audit Report (2005) found that poor IMA has resulted in a loss of \$ 118.25 in the Anchorage Municipality of the United State. In addition, the Audit report from the City of San Diego, in America, found that the authorization process for ordering goods or materials lacks strong controls, resulting in improper processing of unauthorized requisitions. Moreover, these results also indicated the lack of division of duties in the process of authorizing the purchase and issue of stocks.

The research methodology of this study was based on the data collection methods, questionnaire and the techniques used to analyse the data. A qualitative research method explores the attitudes, behaviour and experiences through methods such as open-ended questions, interviews, and focus groups. It attempts to get a broad opinion and comprehensive understanding of the phenomenon from the views of participants. Briefly, Welman et al. (2011) explain that a qualitative research has its own set of strength and disadvantages. Its strength includes creating a better understanding of the responses whereas its disadvantage is that its time consuming. This study did not conduct interviews; instead, it was predominantly quantitative in nature with only two open-ended questions allowing the respondents to express their views and opinions in the questionnaire. The study assisted the management accounting ensuring effective inventory management efficiency at all times as it was aid those entrusted with decision making to formulate strategies of combating the persistent problem of inventory management efficiency in the business. The research findings would hopefully add to the body of knowledge in the area of inventory management efficiency for common user items which would help researchers and scholars and be a basis for reference.

Up to now, Vietnam's accounting system in which IMA is still quite inadequate compared with many countries. According to the preliminary survey results in 2017 of the author, the number of enterprises knowing and applying IMA standards was simply about 23%; up to 61% of enterprises surveyed answered that they knew

but did not apply, the rest were unknown.

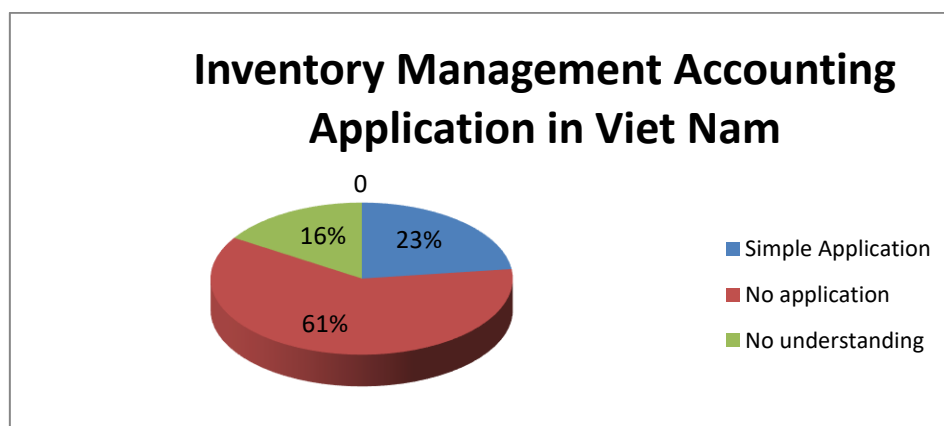


Figure 1 The Percentage of Applying Inventory Management Accounting in Vietnamese Manufacturing Enterprises

Source: Author's Survey (2017)

The awareness and the application process of IMA in the conditions and environment of Vietnamese enterprises are still having difficulties such as: enterprises have applied IMA but the application model is not scientific and reasonable, the knowledge of IMA Executive has not met the demand, the IMA information provided is still limited ... Therefore, it is necessary to study IMA application process in some developed countries in the world such as Japan, USA, France to draw some lessons for Vietnamese enterprises in the process of economic integration.

According to the author, Inventory management accounting is a part of Management Accounting that collects, processes and provides specific information about inventory for internal management purposes in enterprises. IMA in enterprises not only receives, processes, provides past information about the situation of managing and using inventory in time and meets the management requirements but also receives, processed and provides future forecasting information, forecast of consumption, serves as a decision of administrators: developing specific order plans as well as the selection of reliable suppliers who can be in a long-term relationship. Information provided by IMA not only includes financial information but also includes non-financial information. With the role of providing information for decision making, IMA information is extremely important for administrators. IMA has the function of linking between purchased and sold goods. When supply and demand of a certain kind of inventory are not consistent between periods, maintaining a regular amount of inventory to accumulate during peak periods is a very important task that every enterprise needs. When implementing this function well, the enterprise will ensure the consumption of goods, its prestige and especially the buying and selling prices. Inventory will be a good investment activity of the enterprise if the Managerial Accounting department has the right information and plans, calculations taking into account the risks in the reservation process. Thanks to the IMA information, the administrator then can plan to determine the demand for production and consumption, when to buy and what is the amount of each purchasing so as to achieve the highest efficiency in product management and consumption (Garrison, 2008). Therefore, IMA information facilitates the management functions to be better implemented and associates business activities with the environment outside the enterprise. It is through the exchange of information that enterprise, especially administrators, can understand the needs of customers, the capabilities of suppliers and the problems which can arise internally.

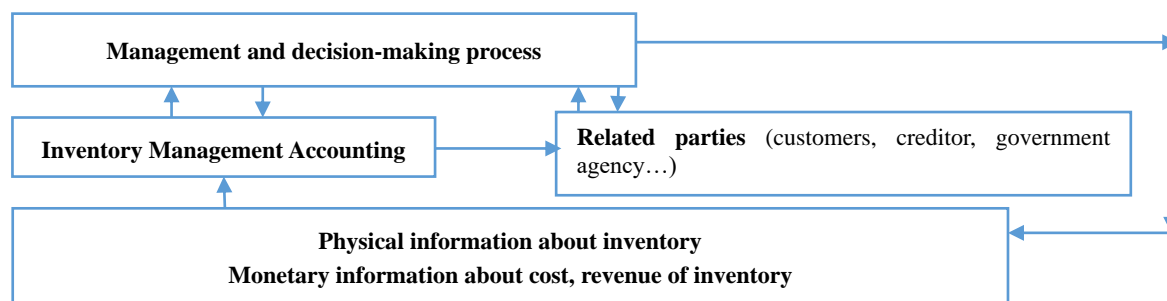


Figure 2 The Role of IMA for Decision-Making in Business

Source: Mayanja M. K. and Vander Poll H. M. (2011)

2. Inventory Management Accounting Experiences in a Number of Countries in the World

2.1 Inventory Management Accounting Experience in the Japanese Enterprises

Although it does not have such a long-lasting development in the UK and the US, IMA in Japan has strongly increased since the World War II. IMA with management functions in Japanese enterprises is greatly influenced by Western countries, especially those of Germany and Britain before World War II and later by the United States. The IMA system in Japanese enterprises is often built separately from the Financial Accounting system. In order to serve the functions of governance, IMA has to accomplish 4 purposes, including: Planning and budgeting (operating budget, strategic budget); determining inventory costs; calculating the price; making decisions (Yoshikawa, 2001). According to the survey results of Howell, Robert A. Sakurai and Michiharu (2007) in 500 Japanese manufacturing enterprises listed on the Tokyo stock market, Japanese manufacturing enterprises all considered the IMA system as an important role in managing inventory costs, establishing and controlling inventory estimates, determining selling prices as well as making business decisions.

Japan is a country that has successfully adopted a timely inventory management model (JIT — Just in time) and this model plays an important role in inventory management activities in particular and serves as management function in general. Many researchers believe that what Japan has accomplished today comes from a production foundation on that wonderful system. The foundation of the Toyota manufacturing system is based on the ability to continuously maintain product lines in factories to adapt flexibly to market changes, which is the premise for the later concept of JIT. Excess inventory and labor are minimized, thereby increasing productivity and reducing costs. In another study on the IMA application in Japanese enterprises conducted by Mahajan Sahil (2007) in 12 mechanical manufacturing enterprises, 5 commercial enterprises and 3 enterprises in the supply chain showed that the application of JIT is commonly applied in small-scale Japanese enterprises having less than 100 employees such as TS Corporation, Shinryo Co Ltd or in large-scale enterprises having more than 1000 employees like Toshiba, Toyota ... in all industries, services, construction, logistic ... JIT is a production philosophy with the goal of eliminating all sources of waste, including unnecessary inventory and production scrap. It can be said that the contribution of the IMA system to the success of Japanese enterprises is undeniable and one of the reasons for this success is that the IMA Executives have a deep understanding about their business. Before being an IMA Executive, they have to work in many other areas of enterprises such as Production, Marketing and Design departments, etc. The number of IMA Executives in a Japanese enterprise is also larger than those from other countries. According to a 2007 survey by Howell, Robert A. Sakurai, Michiharu, there were 18 IMA Executives on average in a Japanese Manufacturing Enterprise, and only 9 IMA Executives in German Manufacturing

Enterprise, and in other countries this number was much smaller. In addition, the IMA system of in Japanese enterprises is very closely involved in the process of estimating inventory costs for new products. The estimation of inventory costs for new products in Japanese enterprises was conducted very early, right from the planning stage (Mahajan Sahil, 2017). The IMA Executive closely participated in determining the quota of raw materials consumption through estimation. In the period of manufacturing products, Japanese enterprises apply JIT to manage and cut inventory costs, especially in automobile and electronics manufacturing enterprises ...

2.2 Inventory Management Accounting experience in the French Enterprises

A special feature in the IMA system of the French Accounting Chart is that the inventory is done in compliance with the periodic inventory method. The regular method is only used in analytical accounting to calculate the cost and price of all kinds of inventory. Under the guidance of the French Ministry of Finance, the IMA model has a more detailed level than the British-American model. The general regulations on IMA in France instruct enterprises to control their inventory by making reports on implementation and estimation based on accounting data but in fact, most French enterprises do not use these guidelines, they make inventory evaluation reports based mostly on non-financial information, not on financial data provided by accountants. Although the studies of accounting in this country encouraged enterprises when calculating inventory price, it is necessary to use many allocating production cost criteria, in fact the application of these theories is very limited, mostly using the criteria based on the volume of production. In French enterprises, IMA is considered as a tool in the corporate governance system, so the IMA organization is integrated with the Enterprise Resource Planning (ERP) and the Institute of Management Information System (IMIS)... According to Lucas Malcolm (2013), the purpose of the international economic inventory of enterprises is to accumulate, classify, evaluate, calculate and analyze the cost of cooperatives connected with production plans and strategic goals of businesses. On that basis, the general model of the international economic inventory of inventory includes the following basic contents: Classification of cooperatives, determination of cooperation costs and accounting bookkeeping system; System of calculating and allocating inventory cost and handling cost control process; inventory analysis and evaluation system; Detailed report system for inventory.

Therefore, besides the IMA system, the ERP also provides useful information about inventory. Inventory management features of ERP are directly linked with the Accounting and Sales department and also help these two departments quickly place orders, quote and set up contracts; which brought satisfaction to customers. According to research by Tamas Vamosi (2005), the results from the change and control of production processes, input materials have helped Manufacturing Enterprises in France save about 100,000 euros annually and increase productivity by 30% more. Thanks to the application of optimal Inventory Management method, these enterprises have reduced huge costs; comparison of the cost data of 2003 with 1993 showed that the cost of capital decreased by more than 50%, reducing operation costs by 35%, saving 28 million euros for storage costs. French businesses use the standard cost method in calculating product prices quite regularly. According to IFAC (2012), the percentage of enterprises using standard cost methods in France was 64%, 56% in Germany and 60% in Spain. The standard cost method are used by these enterprises to determine product cost, estimate and control inventory cost in the supply chain and evaluate performance, especially in foreign and joint venture enterprises in France. The application of measurement of inventories is quite limited in France (Gary C -Biddle, 2009). French businesses only use ABC (Activity Based Costing) method in their subsidiaries which are dominated by overseas parent companies.

2.3 Inventory Management Accounting Experience in the American Enterprises

America is a country with a long history of developing management accounting for both theory and practice. However, IMA in US enterprises is not organized into a separate accounting department but in relation to Financial Accounting, the departments perform each part of the assigned work. According to the survey of manufacturing enterprises in the US in 2014 by the National Accounting Association (NAA), 42% of enterprises applied JIT method, the purpose of this method was to help US enterprises easily estimate the amount of products and materials in stock, determining the amount of reserves whether is excessive or missing, is a relatively high rate compared to developed economies; 18% of enterprises applied EOQ method, 33% of enterprises applied both JIT and EOQ methods. In 2016, IMA for inventory management through the supply chain in Cordenos company which specialized in the production of art paper helped the company save annual costs; reduce scrap costs from \$630,000/year to \$54,000/year; reduce the inventory rotation time from 3 months to 2 weeks; time to order materials decreased from 7 days to 3 days. IMA has supported the effective investment in this paper company: the inventory cost in analyzing the IRR in 5 years increased from 2.6% to 35% thanks to annual savings from projects which is 3 times higher than the initial estimate. In the US, Derya et al. (2005) studied the effect of excess inventory on long term stock price performance. The problem of inventory has continued to receive much attention in most businesses. Inventory levels of raw materials, semi-finished and finished goods need to be effectively managed to control the cost of inventory.

Fung (2012) pointed out that the process of implementing inventory organization in US enterprises is done through 4 steps: Shaping cooperative activities carried out in enterprises through strategic budget; determine the cost of each activity; select the cost allocation standard of joint activities in direct relation with the final product and allocate operating costs for inventory through appropriate standard. By adopting this model, many companies in the US were able to create a cost-competitive advantage and continually add value to shareholders and customers.

On the other hand, the success of this company also came from the performance of corporate governance, the ERP system was effectively operated to meet all demand for costs including Management Accounting information and was designed for each workshop. The inventory management function of ERP helped enterprises identify and quickly obtain information inventory so that they could have strategies to promote the release of inventory, reduce the need for capital mobilization, thereby contribute to promoting efficiency business. The modern measurements of inventory (ABC costing method, Variable costing method...) were developed in the US since the mid-1990s and are considered as effective price calculation methods to determine product prices in a complex operating environment because these methods will help US enterprises detect activities that do not add value, limit points in production and can cut product costs for enterprises (Huefner R. J., 2011). These methods are evaluated as a tool to connect the product price determination system with the strategic objectives of the enterprise. According to the survey results of manufacturing enterprises in the US by NAA in 2006 the rate of applying these methods was 30% and in 2010 it was 38%, in 2013 it was 42%. However, the traditional measurements of inventory (the total price calculation method) is still applied quite popular among US enterprises, according to NAA in 2013, about 26% of US enterprises still used the traditional measurements of inventory. Thus, enterprises in the US are continuing to apply different measurements of inventory. Enterprises applying the variable cost method to calculate inventory prices have the highest price competition, the most cost-cutting efforts and thoroughly use cost information to analyze profits.

3. Lessons Learned for the Vietnamese Manufacturing Enterprises in Integration Period

In Vietnam, the concept of Management Accounting has been formed and developed for over 20 years and was officially recognized in the Accounting Law passed by the Congress on June 17th, 2003. On June 12th, 2006, the Ministry of Finance issued Circular No 53/2006/TT-BTC guiding the management accounting application in enterprises with initial orientation for management accounting implementation in enterprises; however the implementation in Vietnamese enterprises is almost unavailable. Therefore, despite having access to many modern management accounting theory, the application of these theories into Vietnamese enterprises is a really big problem. According to experience of applying Management Accounting in some countries around the world, even in countries with developed economies in both theoretical and practical aspects, the application of IMA is not simple. From research into IMA in the world, it showed the lessons learned for Vietnamese manufacturing enterprises as follows:

Firstly: Enterprises in many countries all over the world have applied IMA as an important tool to improve efficiency, effectively serve the management functions of administrators. Due to the influence of many different factors, the role and process of IMA of enterprises of different sizes in some countries are not quite the same. However, IMA is more effectively implemented in large-scale enterprises with abundant financial resources.

Secondly: IMA is an internal area of the enterprise so the application depends much on the information requirement of the administrators. Awareness of administrators and an understanding and conscious participation of accountants are the important factors for the application of IMA in enterprises.

Thirdly: IMA focuses on making estimation, from purchasing estimates to storage estimates. The estimates must be created in accordance with the business strategy and technical requirements of the enterprise. This approach has effectively worked for Japanese enterprises to improve the efficiency of managing inventory.

Fourthly: The ERP helps enterprises access reliable, accurate and timely management information. Data sources from departments will be focused on a single database and will be shared between all departments based on the authorization feature. Therefore, the application of this software in the activities of IMA will become more accurate, minimizing losses and errors in managing inventory.

4. Recommendations

In light of the findings outlined herein, the following recommendations were made:

Management accounting staff should be adequately equipped with appropriate qualifications, proper training & supervision, ensure adherence of stock record procedures & proper work allocation to promote effectiveness of stock record systems. The enterprise should ensure that inventory control function is only handled by competent well trained supply chain officers, stock record facilities must be adequately provided and full automation of stock control systems and software availed coupled with proper integration with other areas of supply chain management to attain the benefits of perpetual stock verification system, the current inventory audit practices and procedures need to be reviewed and redesigned while a fully computerized stock record system for posting inventory control data is adopted. Also stock records practice should be complied with fully during receipt, issuing, control and recording to ensure accurate and timely inventory management information, too much cumbersome rules and reliance on rigid rules and policies that slow down procurement process should be avoided by adopting a recent technology. Modernize the procurement process through computerization of the systems for example

embracing the E-procurement, which will realize real time procurement thus increasing transparency in procuring goods and services. However, it also helps in overhauling the paper based system that is inefficiency and lower transactions cost.

5. Conclusion

IMA is a part of Management Accounting in order to provide information about inventory and then each organization can perform the function of managing resource for activities, planning and controlling; evaluate performance and make sound decisions. Experience in IMA in enterprises in some countries around the world showed that although the management accounting methods have relatively long development steps, the application of such methods into practice in every country is quite diverse. Not all the IMA methods are applied immediately after birth, and not all the traditional management accounting are no longer practical, but the application process depends on the business environment, economic conditions, administrators' requirements and qualifications of accountants in enterprise.

References

- Derya et al. (2005). "Application of activity-based costing in a manufacturing company: A comparison with traditional", in: *5th International Conference Atlanta, USA*
- Ehrhardt and Brigham (2009). *Financial Management: Theory and Practice* (13th ed.), South Western Centage Learning.
- Fung (2012). "Discussion of management accounting information systems in a developing country", *Asia-Pacific Journal of Accounting & Economics*.
- Garrison (2008). *Managerial Accounting: Concepts for Planning, Control, Decision Making*, Irwin, Boston.
- Gary C - Biddle (2009). "Accounting methods and management decisions: The case of inventory costing and inventory policy", *Journal of Accounting Research*, University of Chicago.
- Howell Robert A. and Sakurai Michiharu (2007). *Japanese Management Accounting-A World Class Approach to Profit Management*, Management Accounting Research.
- Huefner R. J (2011). "Internal control weaknesses in local government", *CPA Journal*, Vol. 87, No. 7, pp. 26-30.
- Internal Audit Report* (online). 2005. Available online at: http://www.muni.org/Departments/internal_audit/2005%20Reports/20055.pdf (Accessed 6 August 2013).
- Lucas Malcolm (2013). *Management Accounting Practices of (UK) Small – Medium - Sized Enterprises, Improving SME Performance Through Management Accounting Education*, CIMA.
- Mayanja M. K. and Vander Poll H. M. (2011). *Management Accounting: An Instrument for Implementing Effective Corporate Governance*.
- Mahajan Sahil (2017). "Implications of just-in-time system of Toyota: A case study", thesis of doctor, Ritsumeikan Asia Pacific University.
- Okwaro, Fredrick, Iravo, Mike, Berut, and Zipporah (2017). "Factors affecting inventory management efficiency in Kenya seed company, Kitale Branch, Kenya", *International Journal of Recent Research in Commerce Economics and Management (IJRRCEM)*, Vol. 4, No. 1.
- Phạm Thị Tuyết Minh (2015). *Tổ chức công tác kế toán quản trị trong các DN thuộc Tổng công ty công nghiệp ô tô Việt Nam*, luận án tiến sỹ.
- Schatteman A. (2010). "The state of Ontario's municipal performance reports: A critical analysis, Canadian public administration", Vol. 53, No. 4, pp. 531-538.
- Tamas Vamosi (2005). "Management accounting and accountability in a new reality of everyday life", *British Accounting Review*.
- Welman C., Kruger F. and Mitchell B. (2011). *Research Methodology* (3rd ed.), Cape Town: Oxford University Press South Africa.