

THE DIFFICULTIES THAT PREVENT FROM BENEFIT FROM JUST IN TIME SYSTEM IN PRIVATE INDUSTRIAL SECTOR IN LIBYA

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ABSTRACT

The importance of new and modern systems in the industrial world has increased in this decade because of the advantages that they bring to the companies and factories. Just in time system is considered as one of these new systems that receive more attention than others in developed countries, however developing countries are still unaware of the importance of this system because of the difficulties that prevent this system from being successful. There are many factors that control the success of just in time implementation; human is considered one of the important factors that prevent just in time understanding, and the suppliers are one of the difficulties that face JITS implementation, in addition to the importance of the inventory to ensure continuous production in tradition manufacturing systems, which is not allowed in the philosophy of this system. To overcome all these difficulties all issues are related to these factors must be understood, starting from choosing the right and better workers and make them multi-skills workers, to find the right suppliers that have the ability to provide the needed material at the right time, finally try to decrease all inventory types and unvalued activities to the lowest possible level.

This study highlights the difficulties that prevent this modern manufacturing system application in the private industrial sector in Libya, which is one of the largest petroleum countries in the world, and its strategic location in the southern Mediterranean coast line has made it one of the biggest exporting countries for more than five decades in Africa.

Key words: Key words: *JITS: just in time system, TQM: total quality management, , WIP: work in process.*

1. INTRODUCTION

Recently all business companies and manufacturing environments competitive depend on the ability of highest quality of its products and lowest cost, which make them focuses in adopting modern systems that may help in achieving their goals to control the production strategy by increase the flexibility of its manufacturing, and production productivity, and reduce products costs. Just in time system is one of these modern systems that has attracted many business in this time because it is refer to link between production quality and production cost, in addition to keep continuous of improvements, and solve inventory problems by reducing it to minimum, which in turn will reduce the final production cost, also that will result to many advantages such as save a large spaces, and reduce time setup. To know how to apply just in time system in traditional manufacturing systems and know how to success, it must be understand the main elements, and the difficulties that prevent from benefit from this system en, and how to overcome them because change from push to pull system is not easy. In pull system the product must start from the end of line back to the beginning, , and use kanban system that represented demand. To meet this system objectives the process must be relies on signals between different point which tell production when to make the next part, but it must be noticed that the stock depletion requires personnel to order new stock is critical to the inventory reduction of the center of this system, and that raise the level of risk, in addition to other problem may result. (Kumar, 2010). And we cannot forget that this production system focuses on the concept of human resource development, and teamwork more than it in traditional manufacturing ways.

2. STATEMENT PROBLEM

Although there is no sufficient accounting information system in place to introduce the considerable factors and difficulties that face JITS application in order to provide a practical example in Libya, from a personal experience working for nine years in the industrial environment, it is possible to point out a number of indications which can shed light on these huge problems that prevent form benefit of this system: such as, facilities used to run and control the production process, also to store raw materials and goods, unnecessary activities, inventory that needed to ensure production continuous, and others. Therefore, it is believed that the private industrial sector in Libya needs a modernization process that will upgrade the level of its local industrial Companies, and allow them to achieve the highest possible level to compete globally.

Currently there are very few studies in this field and therefore a complete analysis of the industrial sector in the Libyan environment is lacking. The majority of them focus on the assurance of the presence of a traditional cost system in general and how it provides effective information. Therefore, the researcher was interested in introducing. The difficulties that face JIT system, as a new and modern system might help to improve and develop the industrial Sector. Given that the current economic climate has changed, it is now an ideal time to implement these modern systems which were once prevented. It's time to bring in new ideas to improve all sectors throughout Libya.

3. OBJECTIVES

- a) Statement and discover the difficulties that face JITS implementation.
- b) Know the best way to overcome these difficulties.

4. QUESTIONS

- a) How to benefit from the application of the JIT system in industrial companies in Libya by reducing cost? This question is based on the fact that the application of modern theories and practice becomes critical to achieve the best production economy.
- b) How to overcome the difficulties that this system application faces.

5. SIGNIFICANCE OF STUDY

- a) This study is a novelty in Libya because it is one of the first few studies that aim to study the application of JIT system in industrial companies in Libya and the problems associated with it, because most of the studies in the field are directed to study the cost systems. Therefore, this study in the research and educational system is very rare in Libya, so this will be the basis of further studies in this area in the near future.
- b) This study will encourage the researcher in Libya to care and consider this area as an important research field that should improve the economy of Libya in general.

6. SCOPE

This study will focus on the industrial private sector in Libya, in different kinds of manufacturing companies.

1. BACKGROUND OF STUDY

Change is sometimes uncomfortable; however, it is necessary to achieve goals in some industries, and overcome the difficulties that prevent them from becoming more competitive in the world market and also to help them find innovative ways to cut its production cost, reduce waste and increase value

Just-In-Time system is a production and management system which was first used by Toyota Company in Japan to manage consumer demand, this system was able to help factories to improve and increase challenges through an approach that focused on people, plants and systems. JITS would be successful if the plant and processes were arranged for maximum output and efficiency, if quality and production programs were correctly scheduled to meet demands. (Adeyemi, S.2010) [1].

JIT manufacturing has the ability, when adapted to the company or factory, to substantially strengthen their competitiveness by reducing product cost and raise the quality of the product in the marketplace, and production efficiency. It is an approach that combines between conflicting objectives of low cost, high quality, manufacturing flexibility, and delivery dependability, Hamoda. M. M. (2008)[2].

The objectives of this system are to: implementing this system will lead to lower all production costs types such as storage cost, handling and transportation cost. It will also lead to produce high quality production in the required time which, in turn will increase confidence of the company's customer, and insure that the company continues to

increase its competition chances Produce the demand production without surplus, eliminate all kinds of wasting time, no defective production, reduce inventory to minimum, and eliminate unnecessary activities (Al-Yaquob. S. N. 2009) [3].

This system has many advantage can encourage any manufacturing organization to apply it, some of these advantage are:

- Production with high quality, the best production with an expected set of properties and features that appear on the product and the ability of these characteristics and appearances to satisfy the needs of customer.

- Production quality becomes every worker's responsibility,
- Eliminate production waste to zero, reduce the production process cycle by eliminating non valuable activities, achieve flow in production process,
- Achieve zero degree in all inventory kinds,
- Reduce all kinds of production cost such as storage, handling, transportation, paper work which, in turn will increase profitability,
- Increase productivity and the rate of return investment and inventory turnover,
- Increase workers' productivity, and participation, by learning because it's to prove labour productivity measured by repeating task, and less required time to complete the task, as well as reducing cost which means that the repetition process earns group skills and speed to get the job done with training and this is reflected in the entire organization including production units, affecting learning related to the time it takes to complete the task as well as the accumulated production volume, achieve high capacity to meet customers' demands and wishes. (Al-Yaquob. S. N. 2009)

Even though the industry in Libya is still unaware of these benefits, because of the problems and difficulties that are associated with the system application, which are people and plants, the application of JIT system in the local environment can provide a number of advantages for example: decreasing storage cost, decreasing work force, increase the number of qualified expert, and well trained personal, plus developing effective programs.

All these advantage will directly and indirectly affect the restructuring and reorganizing of the industrial sector. Also, the adoption of this system would affect the cost improvements in Libya which, in turn will affect other sectors.

The difficulties that JITS implementation faces could be divided to four parts:

- The first one which considers the most important one is the human: all factors that related the human side such as: employee resistance, lacking of understanding from system users, poor awareness of the importance of this system from the workers, Lack of top management support, the lacking in high level vocational training centre to prepare multi-skills workers, there is no respect for time and seriousness in following the application stages, the availability of internally suppliers, and the degree of job guarantee to the workers.
- The second part is the implementation steps: this will focus on the points that related to implementation steps such as: Lack of how to implement, Lack of time to implement, and failures of past JITS implement.
- The third part is the financial and management ability : it will focus on the points that related to the management such as: financial benefits difficulties to recognize, budget constraints, characterization and evaluation the work, the awareness and effectiveness of administrative system, also information technology, lacking in sustained support by administration.
- The forth part the general factors: we can summarize it to: the kind of economic system in the country and whether it capitalist or socialist. Some condition that may industrial policy put such as identifying certain areas of the projects for environmental or developmental reasons, Company culture, and back sliding to the old ways of working. (Wong. Y.C., Wong. K.Y.& Ali. A. 2009). [4].

Finally we can say that the main steps to overcome the difficulties that may face JITS implementation Are:

- The workers are the most important factor for this system to succeed. In traditional manufacturing systems, it's usual for workers to have limited skills, they cannot do number of processes such as, it is necessary to have workers to operate machines, another one for maintenance, and other one for inspection quality. However, in just in time system they must be well trained to have diversity of skills and talents, they must be multi-skilled which give them flexibility in doing many jobs, also doing other workers' jobs when needed, beside their main work. In addition to training them to do some maintenance and small repairs. That will help them to recognise production processing problems and to address them by finding solutions. Also human sources must have authority to participate in decision making after training them well, because learning is a beneficial approach to improving productivity of labour measured by the required time to complete the task as well as reducing costs which, means it will help the worker to earn more skills and speed up to get the job done, which will reflect on the manufacturing organization.

- Another factor that is helpful in this area is strategy to produce goods in small quantities as possible which in turn will need small spaces, meaning lower inventory and small ware houses.
- Avoid unnecessary activities that do not add value to production process, and increase cost. Trying to avoid all waste forms is another factor that helps to implement just in time system successfully. For that there are no workers' machines to process the defective products or secured inventory. The only activity that adds value to product is run time, which is the time needed to produce products; it's the necessary time to complete a series of operations to complete the product, which leads to physical alteration in the product. Also, eliminating non value activities will help in reducing time and workers that are needed to complete the production process, and make it easy to detect the defects. The other activities such as, waiting time, the time taken to transfer production from one department to another, time needed to move production from one department to another, starting and ending from warehouses, examine time, the time needed to make sure that the production is conformed to the productivity standards. This time also includes detecting products and testing time. Storage time is the real time of materials: under processing production and complete production in the stores before being used and shipped to customers. So, the philosophy of this system is to determine the reasons for the non-value time which is considered waste of time and try to minimize it to make the runtime to be the only completion time that adds value to product.
- Reducing the number of suppliers: this system is based on choosing a few numbers of trusted suppliers who have the ability to deliver materials needed in small batches in one day or less as scheduled, because the application of this system makes the company sensitive to any delay in receiving the needed materials in the needed time. Because, this system depends on the accuracy of everything that is related to production, the controlling must start from material purchasing which depends on reliable suppliers and long term contracts.
- Planning production lines which will be automated design to workers who are responsible for everything from examining manufacturing and solving quantity problems, and improving manufacturing flow-lines. Suppliers in short term have the ability to increase prices and limit quality which has a strong impact on conditions of negotiating power however, long term contracts are important to the client and the supplier, which will in turn improve quality and reduce prices.
- Reduce the inventory: keeping stocks is not acceptable in JITS; it must be reduced to a minimum where the required quantities are sufficient for deliveries that will reduce the other cost to the lowest possible level, in addition to transportation cost. Also, produces small quantities from production order that will lead to cost reduction because, all administrative expenses and transportation will be reduced to the lowest level. This system is production management method that is characterized by the Japanese industry, it's amid to reduce inventory between production stages, reduce supply time, reduce manufacturing cost, prevent malfunction and defective product, smooth material and parts, movement for product during stages and make it everyone's responsibility to add value to products.
- Factory organization: flow line is the physical path that the product takes when it moves throughout manufacturing processes. This line is being different when the Company uses JITs from classical manufacturing systems. At first, the machines' organization seems like a small factory for every kind of products within the main factory or plant because all the same machines are located in one location. On the other hand, the similar machines are then put in one group beside each other, which makes the products move from one stage to another after waiting between stages, all that, reflects the unnecessary delay, high handling cost, in addition to under processing inventory.
- Preventive maintenance: it's necessary to do preventive maintenance to avoid any problems that may happen as a result of lack of inventory production to meet the order time and avoid production reputation and breakdown machines, because in the traditional ways the cost of maintenance include repairing cost, labour cost, spare parts cost, additional time, and indirect cost of labour. Maintenance is done to avoid breakdowns, and increase performance of plants and equipment. Maintenance is performed to reduce the probability of failure processing.
- Problems solving: it is important in just in time system to look for problems and obstacles to solve them before they happen and cause problems that may interrupt production lines.
- Use TQM program: This is defined by naval air in1985 to describe the Japanese management style to improve quality. This concept has appeared since the beginning of the eighties in Japan,

and then the United States of America, to move on to the rest of the industrial and semi industrial countries, also developing countries. The simplest comprehensive quality management is management style focus on achieving long- term success through customer satisfaction, by achieving output quality at all stages, and confirm to consistently improve quality and performance, to achieve the sense of high rate of productivity (Kumar. V. 2010). [5].

1. METHODOLOGY

First, the literature review will be an important part of the study as well as play an important role in any academic research, which will focus on many different journal articles and books in this area of research. Also, collecting information from the internet to know the latest changes in developing countries industrial sector will be very helpful. During the research process search for news in every academic research paper and newspaper that is related to JIT application in any developed country which may prove useful in implementing this system and the difficulties that in face with it. Then preparing to the next step, which is to make a questionnaire containing many questions to collect quantitative data about this topic and carry it out to the target companies in Libya to distribute it to the appropriate people.

This questionnaire will consist of three. The first section will survey the elements of the current cost systems in the target companies, through many questions to judge the cost system in the industrial sector in these companies, and understand the possibility of change that this system will bring.

The second section will investigate the profile of JIT implementing; through many questions about the JIT concept, and the requirements for implementing it. The questionnaire will be conducted among the managers in the corresponding companies it will be sent to many different kinds of responsible people such as, general, financial, production, factory and other top managers who are in high positions, and have the knowledge to answer this questionnaire appropriately.

The third section of the questionnaire will discuss the difficulties that prevent JIT system implementation throughout the entire working environment within the Libyan oil industry, and the ways to help overcome it.

As a first step in distributing the questionnaire, a letter will be combined with it to the corresponding companies to illustrate some ideas about the main purpose of the questionnaire, and to make its goals clear in addition to explaining some points that may be confusing to them. Also, to give them some contact details. The questionnaires will then be delivered to the target companies. Making many visits to the target company also will help to encourage people to provide more information and knowledge about JIT system and its implementation.

The interview will be the third way of data collection to represent qualitative data. Conducting interviews with many important and responsible people in the private industrial environment is perhaps the best way of obtaining real information about the study proposition since it reflects people's experience and knowledge. Having meetings with many managers to discuss the possibility of the application of the just in time system, and how to overcome the difficulties that they may face with this application will serve as the main purpose of this study beside the questionnaire.

9. CONCLUSION

The main purpose of this study is to identify the difficulties that face Just-in-time application in one of the developing countries Libya, and focuses on how to overcome these difficulties to make JITS application easier to decrease the production cost, and improve the position of competition of the Libyan products in global markets, because this system will generate new ideas and ultimately new products. Also, providing a better understanding of Just in time system (JIT) implementation, and determining the problems associated with its implementation in which is, the lack of awareness of the importance and benefits of the just in time system throughout most of the Libyan companies.

To achieve the study goals, the interview will make with many responsible people in private industrial companies in Libya to know the extent of the JITS application and to determine the obstacles that prevent this system from develop and increase the efficiency and effectiveness of companies' products.

The study will suggest some ways to avoid some difficulties that may be faced during implement this modern accounting system due to its importance in the current stage, and to use the JIT system because it provides

management with information that is necessary for a rational decrease in the production cost. Moreover, managements will be advised to eliminate all obstacles that hinder JIT implementation. Finally, it is hoped that the Libyan industries sector would overcome the difficulties that this system face and make the necessary changes.

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