Analysis Of Lean Accounting, JIT And Balance Scorecard In The Company's Lean Manufacturing

Irwan Sutirman Wahdian

Abstract: This research purpose to analyze the concept of Lean Manufacturing, which is influenced by the role of JIT. This research uses a theoretical approach. This study portrait thinking companies that have yet to implement lean manufacturing and after doing the concept of lean manufacturing. This study shows that the concept of lean manufacturing can make the company more efficient and effective. This paper shows some lean manufacturing dimensions of the researchers previous researchers. This study also confirmed that lean manufacturing will not be separated from the concept of balance scorecard.

Key Word: Lean, Lean Manufacturing, Lean Accounting, Balance Scorecard, JIT.

1 INTRODUCTION

The development of the company at the moment so rapidly, the management company should receive more attention. Another problem that occurs in the company is still encountered many waste in terms of production time due to the inefficient activities or do not have added value. Thought "Lean" today, the 21st century is indispensable for companies in various sectors, especially manufacturing. Multinational firms with a global market share would have to lean concepts. Product development and innovation to move quickly - to remain relevant, producers should be able to keep up with the pace. As a company that is able to compete to be the first on the market with a new concept. The manufacturing sector is a problem that is always changing and each year the industry faces new challenges. Manufacturing companies must ensure they have complete visibility throughout the supply chain. Many companies/organizations have responded by adopting the lean business model, whose goal is to eliminate waste while "satisfying the customer providing a positive return" to the company[3][4][6], Boczko (2007) describes. “Not only had the once-established logic of traditional push manufacturing found itself under increasing pressure, despite its many years of proven success, alternatives such as lean manufacturing and flexible manufacturing had failed to deliver a cost-effective response to the increasing competition within the global marketplace. [5]. Today’s manufacturing companies face unprecedented challenges in reliability, efficiency, sustainability, flexibility, accuracy, continuous and cost saving. Wang (2010), It’s because Escalating material and labor costs that trim margins, Global competition that is driving down prices and lead times, Ever increasing shareholder expectations for profit and sales growth.[9].

2. Literature Review

Lean

Lean concepts can be realized if companies understand the basic philosophy underlying. Examine the Lean System, we can’t miss the Toyota Production System (TPS) owned Toyota. Kumar 92003) describes that lean is a production practice that contained the expenditure of resources for achievement the target [10]. Gloria (2012) almost the same thing to say that lean as a continuous improvement business strategy is here to stay,[19]. The TPS is often used interchangeably with the terms Lean Manufacturing and Lean Production. Regarding the technical issues of TPS and Lean. It is called Lean because, in the end, the process can run: Using less material, Requiring less investment, Using less inventory, Consuming less space and Using less people. [2]. Lean thinking can be interpreted by conducting efficient and effective manner to produce something good and useful. Lean concepts can be exemplified as heating water with a lot, to be worn three. So heat the water to be wear three people (don’t heat up as much as three times). This will save on fuel and labor. and all the hot water used up everything.

Lean Manufacture

Term “Lean Manufacture” can also be interpreted as “Lean Production”. Where the company in operational activity adds a Value Added Products. Implementation of lean concepts is mostly done by a company that produces a product that is known to the term lean manufacturing among companies. Lean manufacturing concepts discussed the pattern of cooperation between producers, distributors, suppliers and consumers. all three must work together efficiently and effectively so as to get optimum benefit. as well as the production process. beside that lean manufacturing can be defined as a something process that lean resources companies to increase financial performance. Furthermore, some opinions of some experts; Hansen. (2007) describes, lean manufacturing systems allow managers to eliminate waste, reduce costs, and become more efficient [7]. The same thing Wild (2010) says that “The main purpose of the lean business model is the elimination of waste.[4]. In other hand wild describes Concepts such as total quality management and just-in-time production often aid in effective application of the model” [4] Furthermore, and also Norren (2010) has opinion that lean Production organizes resources around business processes and pulls units through those processes in response to customer orders. The result is lower
inventories, fewer defects, less wasted effort, and quicker customer response times.[1]. Lean manufacturing can also be pursued to lean effort and wasting time to increase goal production. By disappearing all of these wastes such as time, effort, and finance. The company can compete with other companies. And face uncertainty in the future. This terms supported. Wang [2011] Lean manufacturing is the production of goods using less of everything compared to mass production: less waste, less human effort, less manufacturing space, less investment in tools, and less engineering time to develop a new product.[9] Furthermore Boczo [2007] said that Lean manufacturing is a generic process management philosophy derived mostly from the Toyota Production System (TPS) as well as other industrial best practices. Lean manufacturing is renowned for its focus on reduction of Toyota’s original “seven wastes” in order to improve overall customer satisfaction [9]. Lean manufacturing has good designed to the company that especially in the manufacturing field. Furthermore Hansen [2007] described that Lean manufacturing is thus an approach designed to eliminate waste and maximize customer value. It is characterized by delivering the right product, in the right quantity, with the right quality (zero-defect), at the exact time the customer needs it and at the lowest possible cost [7]. Line manufacturing can be priority by company to reach target achievement production appropriate customer demand. Cesaroni [2014] has opinion that Zero setup times, zero defects, zero inventories, zero waste, producing on demand, increasing a cell’s production rates, minimizing cost, and maximizing customer value represent ideal outcomes that a lean manufacturer seeks.[17]. In other hand lean manufacturing has concept to eliminate waste throughout the organization, such as Toyota production system (TPS). Which has philosophy concept of lean manufacturing. In this terms lean production is an manufacturing system was created from the Japanese Toyota automobile Production model. This company did production where there’re customer to ask product. where closely coupled manufacturing systems characterized by very low inventory and first-time quality remove much of the non-value-added work. [8],[23]. Lean production has intention the way of detail to reduce risk finance which useful for the company and get benefit to value production. Namen [2013] describes that Lean is a production practice that contained the expenditure of resources for achievement the target. In this practice the waste is completely removed throughout the process and added the value in production [10]. In this currently there’re many company use a lean manufacturing as one of alternative to improve advance competitive with old system replace. Cesaroni [2014] said that A lean manufacturing system replaces the traditional plant layout with a pattern of manufacturing cells. Cell structure is chosen over [17]. Using lean manufacturing it is very useful for the company from cost, time, quality, especially departmental structures. if value production in the company accomplished absolutely can good effect for the company. S. Kaplan,[1996] describes that departmental structure because it reduces lead time, decreases product cost, improves quality, and increases on-time delivery lean production involves a re-conceptualization of the entire production process as a closely interconnected system from which buffers are removed. All the different activities that are part of the production process must be carefully coordinated to maximize the benefits of lean production [23]. The concept of lean manufacturing can be exemplified make instant noodles for 5 people in the restaurant, but chef only cook once and split the 5 then the waiter gives the customer. Everyone has the desire to taste like spicy, salty, sweet it is in the table provided the spice seasoning. So here chef do cook only once even though tastes different flavor. Or the other exemplified use the concept of lean manufacturing is, if the someone want to buy and pant in the supermarket for their necessary. Only pants so it's very waste for their, from time, fuel, pay parking place, cost, reduce energy. If their in the supermarket. They should buy other necessary such as clothes, jacket, sock foot, style t shirt, neck. And other exemplified from lean concept like is if there’s parents have four daughter want to study in the same town. The parent should rent home for their daughter better then their daughter rent room in the boarding house. So it’s reduce finance to pay a room. And also the other benefit, if the parent want to visit their daughter can meet once time in one place without wasting time. So they can keep each other to study, until the can achievement target to be bachelor. For seeking the concept lean manufacturing some expert view from dimension same thing but there’re different main point such as:

Wahaba, [2013] describes that Dimension in LM Description:
1. Manufacturing Process & Equipment,
2. Manufacturing Planning & Scheduling ,
3. Visual Information ,
4. Product Development & Technology,
5. Workforce Management ,
6. Supplier Relationship,

And also other opinion from Hasan, [2014] statement that there are four lean manufacture dimension such as:
1. Continuous Improvement,
2. Waste Minization,
3. Lean Job Characteristic and
4. Employee Involvement [12].

In other hand, that lean manufacturing dimension can see from attributes of a Good Lean Performance Measurement System Drury’s,[2012] :
1. Supports the Lean strategy
2. Motivates the right behavior (such as, eliminate waste)
3. Number of metrics not excessive, so as to maintain focus
4. Mostly non-financial
5. Simple and easy for people doing the work to understand; the connection between their actions and each measure is clear
6. Measures the process, not the people
7. Measures compare actual versus goals
8. Avoids indices, as they are not actionable
9. Must be timely: hourly, daily, weekly as appropriate
10. Displays trend lines to mark continuous improvement
11. Make them visual and post where everyone can see them [25]

Beside that can also lean manufacturing dimension can see from, fives key principles McVay,[2013]:
1. Organizing around value streams. Value streams represent the total activity and resources required to develop a family of similar products or services from
initial order to customer delivery.

2. Building a production system of flow and pull. The ideal manufacturing system is one-piece flow that allows for maximum flexibility and immediate identification of process or product errors. In other words, batch sizes should be minimized. The flow system responds only to demand from its customer, creating a pull, rather than a push, production system.

3. Focusing on customer value. The focus of any production system should be on providing customer value, since it is the customer that keeps you in business. That means providing no more or no less than customer expectations in products, services, technology, timely deliveries, quality, and reliability.

4. Providing employees with the necessary empowerment to improve their jobs. Those doing the work have the greatest understanding of their jobs, so they should also have the flexibility, trust, and permission to determine how to make improvements and identify problems. Your employees should be considered your greatest asset and treated accordingly.

5. Always looking for ways to improve. The cornerstone principle of lean is to constantly strive for perfection. Realizing that the end is not attainable you should relentlessly pursue methods for improvement. [19].

Lean manufacturing is distinguished by the following five principles of lean thinking: Precisely specify value by each particular product, Identify the “value stream” for each, Make value flow without interruption, Let the customer pull value from the producer and Pursue perfection.[18][13][1]. Boczk, [2007] give statement that Focusing on the reduction of overproduction, the efficient use of transportation, the elimination of waiting, the elimination of excessive stocks, the minimizing of motion and the elimination of production defects, lean manufacturing encapsulates three core concepts: reflective analysis, continuous improvement, and mistake-proofing [5]. Other opinion from Cesaroni, [2014] that Lean manufacturing systems have also been implemented by the following companies with similar results [17] McVay, [2013] said that Interest in its (lean) philosophy is creeping into every aspect of business and all types of business. [19].

**Goal of Lean Manufacturing**

In the book Wang,[2011] with the title Lean manufacturing — business bottom-line based, According to TPS, waste in a process is any activity that does not result in moving the process closer to the final output or adding value to the final output. The seven wastes are:

1. Overproduction—Overproduction is to manufacture an item before it is actually required. Overproduction is highly costly to a manufacturing plant because it prohibits the smooth flow of materials and actually degrades quality and productivity.

2. Excess inventory—Excess inventory tends to hide problems on the plant floor, which must be identified and resolved to improve operating performance. Excess inventory increases lead times, consumes productive floor space, delays the identification of problems, and inhibits communication.

3. Waiting—Whenever goods are not moving or being processed, the waste of waiting occurs. Much of a product’s lead time is tied up in waiting for the next operation. Waiting is usually caused by poor design material flow and information flow.

4. Transportation—Transporting product between processes is a cost incursion that adds no value to the product. Excessive movement and handling cause damage and are an opportunity for quality to deteriorate.

5. Unnecessary motion—As compared to transporting materials, motion refers to the producer, worker, or equipment’s movement, which could cause damage, fatigue, wear, and safety issues.

6. Over processing—Using more expensive resources than are needed for the task or adding design features that are not needed by customers. Expensive resources also encourage overproduction in order to recover the high cost of this equipment.

7. Defects—Quality defects impact the business bottom line, resulting in rework or scrap and associated costs such as quarantining inventory, [9].

**Figure 1: Lean dimensions in a manufacturing system and its relation to wastes**

A lean manufacturing will be successful, if the enterprise uses implementation lean manufacturing by the right. With the result that can make significant improvement, such as reduced setup times, increased production rates, increased productivity, lower manufacturing, cost, major reductions in inventories. Lean manufacturing have objective for the company are to satisfy employees, reduce its inventories, serve its customers, increase its capacities and grow its financial,[17],[18]. The company’s ability to implement lean manufacturing is different, with the result of the failure or success of implementation, Such as Hospital, hospitality, restaurant, education. Etc.

**Lean Accounting**

Accounting should record every financial transaction in any existing business processes, if companies use the concept of "Lean Manufacture" it is necessary "Lean Accounting". Maskell, [2006] describes that companies using Lean Accounting have better information for decision-making, have simple and timely reports that are clearly understood by everyone in the company, they understand the true financial impact of lean changes, they focus the business around the value created for the customers, and Lean Accounting actively
drives the lean transformation[16]. Furthermore, Jaiprakash, [2014] says that accountants are quick to point out that you cannot have lean manufacturing without lean accounting, to support lean manufacturing concepts, the firm must also adopt lean accounting concepts, which means measuring and evaluating results by value stream management rather than by traditional departments.[8]. Lean accounting has gained greater acceptance in industry over the last decade due to the efforts of a growing number of passionate practitioners who have effectively conveyed the need for a different accounting system in support of lean operations [19]. Our vision is that Lean Accounting will:

1. Provide accurate, timely, and understandable information to motivate the lean transformation throughout the organization, and for decision-making leading to increased customer value, growth, profitability, and cash flow.
2. Use lean tools to eliminate waste from the accounting processes while maintaining thorough financial control.
3. Fully comply with generally accepted accounting principles (GAAP), external reporting regulations, and internal reporting requirements.
4. Support the lean culture by motivating investment in people, providing information that is relevant and actionable, and empowering continuous improvement at every level of the organization.[16].

Dermerwean, [2007] describes that Lean Accounting refers to attempts to derive monetary management information based on Lean principles. [14]. In Lean manufacturing absolutely need lean accounting as control in the enterprise. According to Aghdaei , [2014] said that Lean accounting is looking forward decreasing the stages in implementation process and omitting the standard prices for achieving real prices and inhibiting expense allotments, whereas lean control operations are still considering measurement of system performance and emphasize on social and behavioral controls[15]. Dermerwean, [2007] also said that Lean refers to the management system of applying Lean principles to operations, and Lean Accounting refers to attempts to derive monetary management information based on Lean principles[14]. Maskell, [2006] give statement that Lean accounting focuses on measuring and understanding the value created for the customers, and uses this information to enhance customer relationships, product design, product pricing, and lean improvement.[16]. Based on statement above lean accounting have some function to improvement all aspect about costumers and product. Management accounting information it provides with use one-touch flow design as lean accounting refer to lean operational principle, lean accounting also has alternative to traditional management system. [14],[17]. In the company has principle of lean thinking to grow their company use lean accounting. Rosa [2012] said that lean accounting is a new accounting approach stemming from the growing interest of companies in embracing the culture of lean thinking. [18] There’s new method to increase a companies. Every companies must to use good method one of such lean accounting to control financial. Womack,[2003] describes that lean accounting, more that a new method, is the adaptation of familiar financial and management accounting methods to the needs of lean organizations, with the aims of : providing information to motivate lean transformation; eliminating waste from the accounting processes while maintaining financial control; complying with reporting regulations requirements; and supporting continuous improvement.[20]. According to book Dermerwean, [2007] The process of evaluating LA requires addressing four aspects of the case for it as presented: (a) Lean Accounting assertions as stated in the literature, (b) understanding the implications of these assertions, (c) questioning the operations-centric view of Lean Accounting, and (d) evaluating Lean Accounting decision support capabilities[14].Based on Drury [2012] said that the four dimensions of Lean Accounting There are four dimensions of transforming accounting to support the Lean environment:

1) Transactions appropriate for the manufacturing practices employed
2) Performance metrics that measure the right thing and motivate the right behavior
3) Accounting processes, cost management techniques, and financial reporting that adhere to Lean principles
4) Recognition that investment management decision making is different [25].

Principally, a companies need a management accountant to keep financial the companies. And also need is required understanding about finance. Dermerwean, [2007] give statement that The management accountant is required to gain an understanding of Lean thinking, principles, and practices, and a manufacturing shop floor emphasis requires that those from service industries dig a little deeper before they will be comfortable.[14].

Figure 2: Main differences between lean accounting and traditional accounting systems

<table>
<thead>
<tr>
<th>Traditional Management Accounting Systems</th>
<th>Lean Accounting</th>
</tr>
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<tbody>
<tr>
<td><strong>Main Features</strong></td>
<td>Lean</td>
</tr>
<tr>
<td>Long and complex</td>
<td>Fast</td>
</tr>
<tr>
<td>Require large amounts of non-value work</td>
<td></td>
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<tr>
<td>Take’s long time</td>
<td></td>
</tr>
<tr>
<td><strong>Object</strong></td>
<td></td>
</tr>
<tr>
<td>Are focused on labor efficiency and overhead absorption</td>
<td>Financial performance and non-financial measures: quality, efficiency, timely, service, etc.</td>
</tr>
<tr>
<td><strong>Purpose</strong></td>
<td></td>
</tr>
<tr>
<td>Maximize use of firm’s resources</td>
<td>Maximize “Flow”</td>
</tr>
<tr>
<td>Minimize allocated costs</td>
<td></td>
</tr>
<tr>
<td><strong>Focus</strong></td>
<td></td>
</tr>
<tr>
<td>Products and costs</td>
<td>Value Stream Processes</td>
</tr>
<tr>
<td><strong>Tools</strong></td>
<td></td>
</tr>
<tr>
<td>Product costs</td>
<td>Value Stream Costing/Value Stream Profit &amp; Loss.</td>
</tr>
<tr>
<td>Standard costs</td>
<td></td>
</tr>
<tr>
<td><strong>People involved</strong></td>
<td>Accounting personnel</td>
</tr>
<tr>
<td>Controller</td>
<td>Value Stream Team</td>
</tr>
<tr>
<td>Management</td>
<td>Management</td>
</tr>
<tr>
<td><strong>Reports</strong></td>
<td></td>
</tr>
<tr>
<td>Complex and often late</td>
<td>Clear and easy to understand</td>
</tr>
<tr>
<td>Use a language not always easy to understand</td>
<td>Frequent daily “weekly/ monthly basis</td>
</tr>
</tbody>
</table>

**Source:** Ana Cristina Raposo Rosa, Maria João Cardoso Vieira Machado

**BSC (Balance Scorecard)**

The companies use Lean Manufacturing will be better significant to apply balance scorecard. Because balance scorecard, can combine the aim companies, strategy companies, and measure performance companies, from the some aspect such as financial perspective, learning and growth perspective, costumer perspective, to achieve vision and strategy, with the result that facilitate management do it’s the function ( planning, organizing, actuating, controlling).
According to Maskell, [2007] said that The balanced scorecard is a model of lead and lag indicators of performance that includes both financial and nonfinancial performance measures [21]. The balanced scorecard system has function as a system of performance measures, and also balance scorecard involve group of financial and nonfinancial performance measurement vision on strategy. A companies use balance scorecard as strategy financial an nonfinancial, absolutely a companies can get maximum profits and improved financial performance. [4],[21].

**Figure 3: Balance Scorecard : translating strategy into Action**

Based on statement Maher, [2008] said that The Balanced Scorecard translates an organization’s mission and strategy into operational objectives and performance measures for four different perspectives: the financial perspective, the customer perspective, the internal business process perspective, and the learning and growth (infrastructure) perspective [22]. In other hand according to book Brewer, with the title Introduction to managerial accounting, 5th ed. Said that The **financial perspective** describes the economic consequences of actions taken in the other three perspectives. The **customer perspective** defines the customer and market segments in which the business unit will compete. The **internal business process perspective** describes the internal processes needed to provide value for customers and owners. Finally, the **learning and growth (infrastructure) perspective** defines the capabilities that an organization needs to create long-term growth and improvement. This last perspective is concerned with three major enabling factors: employee capabilities, information systems capabilities, and employee attitudes (motivation, empowerment, and alignment)].[1]. The **balanced scorecard** aids continuous improvement by augmenting financial measures with information on the “drivers” (indicators) of future financial performance along four dimensions: (a) **financial**—profitability and risk, (b) **customer**—value creation and product and service differentiation, (c) **internal business processes**—business activities that create customer and owner satisfaction, and (d) **learning and growth**—organizational change, innovation, and growth [4].

How to achieve the organization goals, one of the way use balance scorecard system that consist of an integrated set of performance measures that are derived from and support the company’s strategy throughout the organization. Under Balance scorecard closely, it can make top management translates its strategy into performance measures that employees can understand and influence. Its top and middle management better facilitate take decision for keep stability company activity. [1].

**JIT (Just In Time)**

Method just in time (JIT) much benefit for some saving. Just in time purchasing will useful in saving deliver cost, assurance cost preparations, maintain cost, risk defect material for producing. Just in time production will useful in saving time, energy, there is no wasting time in production (production cells) So value product accomplished by appropriate time by high quality. Just in time sales order will useful between companies and costumer especially in appropriate time. The customer will get good product and satisfy, Companies get profit finance from the customers. Using method just in time usually get improvement in quality product and quality time the product can acceptable for the customer in terms quality product. Based on statement Wild, [2010] said that Lean Practices Continuous improvement rejects the notions of “good enough” or “acceptable” and challenges employees and managers to continuously experiment with new and improved business practices. This has led companies to adopt practices such as total quality management (TQM) and just-in-time (JIT) manufacturing [4]. Drury’s, [2012] said that World-class manufacturing companies have responded to these competitive demands by replacing traditional production systems with lean manufacturing systems that seek to reduce waste by implementing just-in-time (JIT) production systems, focusing on quality, simplifying processes and investing in advanced manufacturing technologies (AMTs)[25]. Based on statement above that the high manufacturing companies have traditional system to improve production system, quality and simplifying processes. Kaplan, [1996] said that In the lean manufacturing model, JIT delivery requires very close linkages between suppliers and customers so that costs and waste are minimized throughout the production chain [23]. Based on statement above between suppliers and customers there is connecting in terms deliver product appropriate time until get profit each other. There are concept in just in time such as just in time manufacturing, just in time sales, just in time production, Just in time is saving production in the companies to reduce waste isn’t needed and as inventory control system in which materials are purchased and units are produced all needed. manager just in time inventory system use sales budget to minimize period to order materials to satisfy the immediate sales demand. some managers according to a just

**Figure 4: Balanced Scorecard Performance Indicators**

<table>
<thead>
<tr>
<th>Customer</th>
<th>Internal Process</th>
<th>Innovation/Learning</th>
<th>Financial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer satisfaction rating</td>
<td>Cycle time</td>
<td>Employee satisfaction</td>
<td>Net income</td>
</tr>
<tr>
<td>% of new customers acquired</td>
<td>Product costs</td>
<td>Employee turnover</td>
<td>ROI</td>
</tr>
<tr>
<td>% of sales from new products</td>
<td>Labor hours per order</td>
<td>$ spent on training</td>
<td>Sales growth</td>
</tr>
<tr>
<td>Time to fill orders</td>
<td>Production days with out an accident</td>
<td># of new products</td>
<td>Cash flow</td>
</tr>
<tr>
<td>% of sales returned</td>
<td></td>
<td># of patents</td>
<td>Residual income</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Stock price</td>
</tr>
</tbody>
</table>

**Source:** John J. Wild, Ken W.
in time (JIT) system as a make to order inventory system. In lean production have purpose to eliminates inventory between production departments, making efficiency of production the highest priority JIT purchasing requires suppliers to deliver product for the customers in appropriate time. Just in time (JIT) production is a part of lean production philosophy that has been created in many companies such as Japanese and U.S Companies. [1],[4],[8],[21],[7]. Based on statement maskell,[2007] said that Just-in-time (JIT) methods attempt to obtain materials just in time for production and to provide finished goods just in time for sale. [21]. In other hand Chynthia,[2001] said that JIT manufacturing is a demand pull manufacturing system that pulls products through the manufacturing process.[24]. Hansen, [2007] describes that Just-in-time manufacturing A demand-pull system that requires goods to be pulled through the system by present demand rather than pushed through the system on a fixed schedule based on anticipated demand.[7]. Bagranof, [2008] said that JIT is a great concept for a company that is intent on efficiently managing stock, but it makes life difficult for the accounts payable department that is responsible for paying all those JIT invoices [8].

Discussion

Analysis of Lean Accounting, Balance Scorecard, and JIT in companies that implement Lean Manufacturing, I will illustrate with pictures:

**Figure 5: Relation of four business entities (Firm, Distributor, Supplier and Customer) before Lean Manufacturing implementation.**

Describes pictures 5:

In the picture there are four entities cooperate in a business such as; Customer, Distributor, Company, and Supplier.

1. Direction of the arrow Company to Distributor then to the customer. The flow of finished goods from the company to the distributor up to the consumer, here takes time (lead time).
2. Direction arrows from consumers to the distributor and then to the Company. Flow Order Information finished goods (Demand)
3. Direction arrows from the supplier to company "C”. The flow of raw materials to some production processes in the company.

Box "C" is a production cell in which the company (In the picture. There are five cell production). WIP transition in cell looks far apart so it takes time (lead time) a lot. Figure below shows the changes caused by the concept of lean manufacturing

**Figure 6: Relation of four business entities (Firm, Distributor, Supplier and Customer) after Lean Manufacturing Implementation.**

Describes pictures 6:

Four business entities close together so there is no time lead times that much. Lead time the image is divided into three:

a) **Lead time of purchase.**

Delivery of raw materials is becoming shorter, it is caused, by choosing suppliers who are closer to the factory and can supply some raw materials as well.

b) **lead time of Production**

Delivery WIP from one cell to the next cell does not require a lot of time and if possible the production process is shortened by combining Cell (eg to buy a machine with twin engines)

c) **Lead time of sales**

Delivery FG (Finish Good) from companies to consumers can more quickly in a way closer to the consumer distributor, close the factory to the consumer.

With more nearby companies, distributors and consumers so that information requests can be quickly Finish Good (FG) up to companies. Thus the company can execute the concept of "demand pull". The application of the concept of proficiency level will have implications on the capital savings for the purchase of raw materials, raw material storage and inventory both Finish Good (FG) and Finish Good (FG) shipping costs. Balanced Scorecard concept greatly helped the success of the concept of Lean Manufacturing. Surely the concept must be adapted to business processes lean manufacturing. Making the Balance Scorecard card is designed based cell (value stream). Making the Balance Scorecard is done every day, week and month. With Balance Scorecard, each worker can coordinate quickly when an error occurs in one cell so that these problems can be solved.

Conclusion

The rationale of lean thinking is trying to eliminate waste (waste) in the process, or it can also be regarded as a concept of streamlining or efficiency. Lean thinking is a concept to do more and more with less human effort, little equipment, very little time, a little space, to meet what customers want. The complexity of the manufacturing company is very high, so it is necessary concepts efficient and effective on the flow of raw materials to the company', Finish Good (FG) flow of companies, distributors and consumers of the company to the consumer. Finish Good (FG) and the flow of information
requests from consumers to companies. All that can be overcome with the concept of "Lean Manufacturing". The concept of lean manufacturing can run well by using some tool like-JIT (JIT) include : JIT purchasing, JIT Manufacturing, Sales JIT). With the Lean Manufacturing (LM) concept, companies can reduce the wastage of various cell. The concept of lean manufacturing on produce Finish Good (FG) is not oriented to the department but focus on cell / Value stream. In carrying out the functions of management (Planning, Organizing, Actuating, Controlling) can be done by supported of the Balanced Scorecard. Lean manufacturing concepts very clear, measurable, and anyone can apply. That is the concept of improvement is not only a monopoly of Toyota Motor Corp., or companies other with different areas of the various adjustments that good. Lean manufacturing approach to identifying and eliminating garbage (activities without added value) through continuous improvement in product flow based on the will of consumers in providing maximum satisfaction excellence.

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