

CHAPTER 1

PRELIMINARY

1.1 Background

In this era, development of industries from years to years becoming faster. In other word the competition in all place and in all aspect become harder than before. Every industries try to expand their market and their research. They do many things, from many factor they improve the function until the maximum capability, like outsourcing some part of industries and concentrate to their plus point, using external resources, until build a large scale of supply chain all over the world to dominate the global market. Supply chain is one of the key, supply chain is the network created among different companies producing, handling, and/or distributing a specific product. Specifically, supply chain encompasses the steps it takes to get a good or service from supplier to the customer, supply chain is a crucial process for many companies, and many companies strive to have the most optimized supply chain because it usually translates to costs for the company. By mastering the way to control the supply chain efficiently, researcher believes that the companies will achieve a state where there will be a sustainable competitive advantage for long time. From Kementrian Perdagangan Indonesia (Kemendag) told that export product from Indonesia since 2010 – 2014 from various product experience the fluctuate increase and decrease from economy factor. The competition is not only come from service sector, but also from manufacturing sector. Service sector is the portion of the economy that produces intangible goods, where manufacturing sector is the production of merchandise for use or sale using labor and machines, tools, chemical, and biological processing, or formulation. The term may refer to a range of human activity, from handicraft to high tech, but it most commonly applied to industrial production, in which raw materials are transformed into finished goods on large scale. Nowadays, industries that cannot face the challenge will be left behind by their competitor and the worst case that may come is bankruptcy. Indonesia is in 18th most export product in terms of export furniture and handicraft since year 2013. That position is lower than the achievement in before year, which when Indonesia still sit in 12th in year 2012 [CITATION Was14 \l 1033].

Table .1 Export value happen in Indonesia

Year	Industries total (in million \$US)
2010	157.779,1
2011	203.496,6
2012	190.020,3
2013	182.551,8
2014	176.292,5

(Source: Data Processing, 2015)

By table above mentioned, the data represent total of export value happen in Indonesia for 4 years, since 2010 to 2014, below represent the data in graph form as follows:



Figure .1 Total Export in Indonesia

(Source: Kementerian Perdagangan, Accessed 27 may 2015)

From data gifted above, will be explained why the export can make this graph being so fluctuate. From data above, export value increased from US\$ 157779.1 million to US\$ 203496.6 million or as big as 29.1 % growth from year 2010 to 2011. It is because export value from Indonesia pushed by non-oil export in amount as US\$ 129739.5 million to US\$ 162019.6 million, it is equal to 24.9 % positive growth from 2010 to 2011.[CITATION Rol12 \l 1033] . From 2011 to 2012, researcher can

see the decrease of export value from US\$ 203496.6 million to US\$ 190020.3 million, equal to 21, 4% negative growth, the cause may come from commodities prices, especially minerals price suffer a setback. As for overall, both oil and non-oil export decrease which cause the accumulative decrease of total export [CITATION ant13 \l 1033]. In year 2012 to 2013 the export value decrease, from US\$ 190020.3 million to US\$ 182551.8 million, in this point, if researcher see only from the number, yes Indonesia experience setback in economy especially export section. But, actually the target that Indonesia put in year 2013 is to achieve US\$ 179000 million, that's not the only reason, Indonesia balance of trade record surplus in amount of US\$ 1.5 billion [CITATION ant14 \l 1033] in year 2013 to 2014 Indonesia export value re-experiencing decrease. From US\$ 182551.8 million to US\$ 176292.5 million, equal to 3.43% negative growth [CITATION cnn15 \l 1033].

From many industries happening to do export in Indonesia, one of industries that writer see as one of Indonesian big point in export product is Furniture industries, from Kementrian Perindustrian Republik Indonesia (Kemenperin) with the title “expor furniture ditargetkan naik 20%” written that the demand market of furniture from Indonesia to the world is coming better each day, Indonesia targeted that the increase will come to 20% in year 2015 from export total furniture year 2014 in total of USD 1,7 billion. [CITATION ant14 \l 1033] The table below will explain the value of furniture export product in Indonesia

Table .2 Furniture export value from wood

Year	Furniture export value (in million USD)
2010	2.935,4
2011	3.374,7
2012	3.448,5
2013	3.663,0
2014	4.070,5

(Source: Data Processing, 2015)

By table above mentioned, the data represent total of furniture export value happen in Indonesia for 4 years, since 2010 to 2014, below represent the data in graph form as follows:

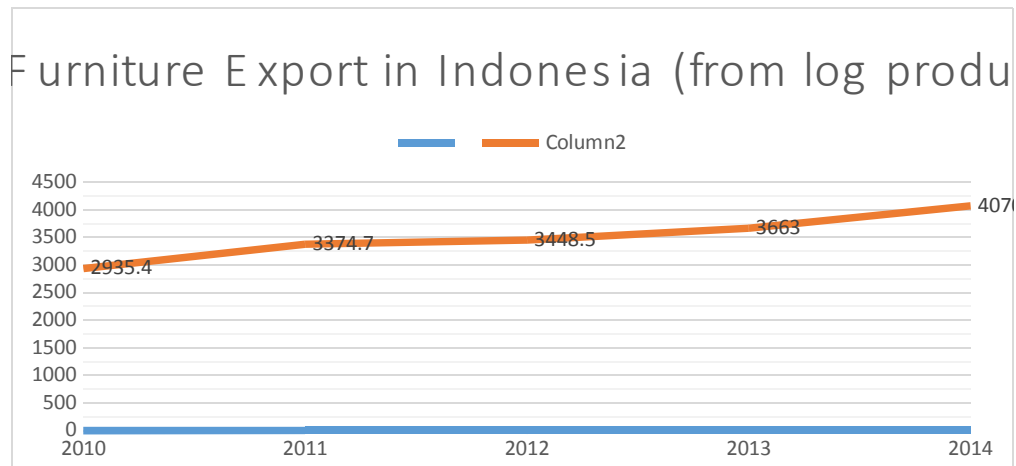


Figure .2 Total Export in Indonesia

(Source: Kementerian Perdagangan, Accessed 30 September 2015)

From the data above, researcher can see that there is a fluctuation in export value because of many factor, from the change of leader of Indonesia itself, from Susilo Bambang Yudhoyono to Joko Widodo, from the regulation point of view, where export being supported more by government, Joko Widodo as our president said to us that our furniture export need to achieve 5 million dollar in 5 years future coming. Based on survey being made by team, product that categorized as one favourite is outdoor furniture. Buyer also come all over the world. From what researcher can see, the majority come from Australia, China, USA, and Singapore, total of the buyer is about 2000 people from overall 6113 people [CITATION ant14 \ 1033]. By the increasement of dollar. There is some part that take the advantage position. It is the exporter, by the increasement of dollar, they will increase their income, because the value or rupiah that they retrieve will be much higher than before. That happen because all of the payment all over the world especially in international trade is using dollar as legal currency trade. [CITATION ant13 \ 1033]

Since 1940, Total Quality Management has been touted as the second industrial revolution where it began its journey, to bring Japan into the forefront of competitive quality[CITATION Con13 \ 1033]. A manufacturing company that possesses many complexity can be challenged when maintain production goals and standards in conjunction with a major change[CITATION Syd14 \ 1033]. Additionally, TQM's contribution to a competitive advantage remains unknown with the context of Management and organizational development research. It can

accurately described as a philosophy about quality that suggest for involving everyone in the organization in a quest for quality. However, the main theme this research is how to improve quality of industry by implementing Quality management in practice, which is a real challenge [CITATION Syd14 \l 1033]. Many researchers have studied and documented the underlying principles and practices of this quality management theory [CITATION Con13 \p 4 \l 1033]. Statistical Quality Control (SQC) built upon the QC phase. The SQC concept began in 1924 when Walter A. Shewhart, introduced the X-bar and R control charts. These charts used to map the results of inspection process in an attempt to Interpret and solve process problems. During World War II, the concept of acceptance sampling plan was introduced by Harold F.Dodge and Harry G. Roming [CITATION Con13 \p 5 \l 1033]. These statistical tools paved the way to a more proactive approach for QM. Statistical Process Control (SPC) follows SQC with a goal to focus more on process behavior in an effort to prevent defects in products or services[CITATION Con13 \p 5 \l 1033].

Beginning in 1950, end of World War II, a series of postwar lectures was given by Deming to teach statistical quality control practices in Japan. Deming's contributions placed more emphasis on management of a system for improving quality and his thinking was based on the use of statistical tools for continual improvement. In appreciation of Deming's work the Union of Japanese Scientists and Engineers (JUSE) created the Deming Prize to commemorate his contributions and friendship and to promote the continued development of quality control in Japan. The founder of JUSE was business leader Ichiro Ishikawa and his son Kaoru Ishikawa are researchers known for his development of the basic seven tools of quality[CITATION Con13 \p 5 \l 1033]. Kaoru is also credited with coining the term company-wide quality control. Writer choose to use seven tools of quality based on the history which said that seven tools already being used in the early found TQM in 1950s [CITATION Con13 \p 6 \l 1033]. Not only that, seven tools of quality also easy to understand, yet extremely useful in identifying and analyzing quality problems. Sometimes workers use only one tool at a time, but often a combination of tools is most helpful [CITATION Syd14 \p 346 \l 1033].

Another factor that researcher can conclude is the factor from the factories itself, researcher interpret it as internal factor. Many factor give effect to the working quality, performance, competence, or even the success of the companies. One of

many factor that become the vital key of the success of the companies is quality. Quality can be meant very extensive. Quality not only talk about product, but also can be mentioned for the productivity and the employer itself. From quality, companies can attract the customer and gain the loyalty for the product they sell, the quality benefit don't stop from that point, if researcher pull the strings over to the future, the cost of quality management will be decrease. That's why quality application doesn't applied to one point only, but to all over part of companies. From that way the profit of companies will increase.[CITATION Sur15 \l 1033]

In the practice, to create a good quality management won't be easy because the cost is way too big from start, the continuous improvement will sap the capital slowly. The commitment and will from leader to give the influence so the realization of achieve the minimum quality can be fulfilled. This was meant to the product so it can compete with its competitor[CITATION Sur15 \l 1033].

PT. XYZ is companies work in manufacture wooden market, it produce garden umbrella, and outdoor furniture which including tables, chairs, and benches, etc. because PT. XYZ make the furniture by themselves, they also the one who take care of the production from raw material to finished good. All the production took care by themselves to know the amount of succeeded product and the amount of failed product, this failed product could be seen from the high number of defect of product that happen in every process until the delivery, for example not only because the high defect number, but also because there is a high number of defect variation happening that makes the quality decreased. For example, the production of furniture in PT. XYZ will go through various process, from the log being put to the log yard, going through sawmill, assembling, until the finishing department, there will be 5 primary quality post to check the product, whether the product is defect or not, in every post, the quality measurement will be different, so it concluded that the defect that will happen in every post will be various. If the quality of product underestimated by the companies, there is a big chance that the companies cannot compete and will put extra cost into the quality management. This can cause the return of product from buyer because of defect, which will cost extra money. If this problem being let drowned deeper into the companies, companies will lose the credibility and will cause the decreasing of loyalty and company profitability[CITATION Sur15 \l 1033].

Mr Arief Suryadi as QC. Manager of PT. XYZ said that no furniture company who operate in production can make the defect to zero, the defect cannot reduced to zero, but can be decreased. Because the companies want to decrease the defect, writer put the interest to decrease the defect with seven tools of quality. Writer believes seven tools of quality is one of the tools known that can be the answer to reduce the defect. Seven tools of quality can help manager to do analysis in exact way and help to solve the problem of many quality problem, also giving the companies good feedback to increase the quality management [CITATION Sur15 \l 1033].

1.2 Problem

After observation done to PT. XYZ, then the problems that founded can be concluded as below:

1. How researcher can reduce the defect in the production in PT. XYZ?
2. How writer help PT. XYZ improve the working procedure?
3. What is the best solution that can be recommended to PT. XYZ to reduce the defect of production?

1.3 Scope of Research

The scope of research will include the analysis and design of Quality defect management. Writer will provide the result of data processing to support PT. XYZ to manage the defect. Limits of the scope will describe as follows:

1. Production division located in factories in PT. XYZ, because the companies itself consist of production factories from raw material handling to finishing the product and the packaging itself done there.
2. Information accessed by writer only the information regarding to the production and related to the quality measurement and control.
3. The data that can be accessed is the data with the range time from year 2014 to present date the research conducted.

1.4 Purpose of research

Based on the problem identification that happening, then the purpose of research can be categorized as below:

1. To find how to reduce the defect in the production in PT. XYZ
2. To help PT. XYZ improve the working procedure

3. To find the best solution that can be recommended to PT. XYZ to reduce the defect of production

1.5 Benefits of Research

From this research, writer hope that this research can give benefit to:

1. For PT. XYZ
 - To know the reason behind the defect that happen during production process. By knowing the factor behind, the companies expected to be more aware for the improvement of quality in future.
 - Make the companies easier to take decision upon the repair also decrease of production defect.
 - With this research, companies expected to reduce the cost of quality.
2. For Writer
 - To improve the insight about seven tools of quality.
 - To put more understanding about the need of quality management in companies
 - To know the real problem so researcher can compare it with the theory.
3. For another part
 - Giving the reader overview how to manage the defect use seven tools of quality.
 - For the reference for the next research
 - Giving the reader overview to manage the quality for their business.

1.6 State of art

Below is the summary of the research that has been done before that have correlation with the quality management, this research comes from Journals, which concluded as follows:

Table .3 State of Art

No	Journal	Method	Result	Adaptation
1.	<p>Parallel-meso and Process Owner Organizational Structures Relationship to Implementation of Six Sigma Quality Management Programs</p> <p>SANDRA R CUFFEE Prescott Valley, Arizona November 2014</p>	Six Sigma	<p>There is no statistically significant relationship between predictor variables customer satisfaction, parallel-meso structure, and outcome variable six sigma quality management program implementation was true</p>	<p>This journal tells about six sigma quality management implementation effect in real case.</p>
2.	<p>IMPLEMENTING TOTAL QUALITY MANAGEMENT APPROACH IN GARMENTS INDUSTRY</p> <p>Md. Syduzzaman, Md. Mahbubor Rahman, Md. Mazedul Islam, Md. Ahashan Habib, Sharif Ahmed</p>	Seven Tools	<p>By implement TQM on Ananta Apparels Ltd, there is an improvement in reduce of defect, increase in repair, quality, and efficiency.</p>	<p>TQM as quality management, is one of vital role in improving productivity, reduces manufacturing cost by reducing scrape and</p>

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No	Journal	Method	Result	Adaptation
3.	<p>CHALLENGES AND BARRIERS AFFECTING THE SUCCESS OF TOTAL QUALITY MANAGEMENT Approaches and Multi-Site Planning (2013)</p> <p>Connie Jean, Rokke</p>	Seven tools	As a result, only the correlations between leadership and human resource inclusion, human resource inclusion and transforming organizational culture, and leadership and dynamic customer focus remain when setting up the structural model.	The challenges and barriers TQM face attempting to quantify the impact of success in implementing TQM.
4.	<p>Quality improvement: Reducing real-time inventory errors through quality control circles</p> <p>Ting-Chen Hu</p>	Seven tools	Conducted series of work such as communication, coordination, self-criticism and improvement based on the causes.	The purpose of TQM is to increase the Quality by reducing the inventory error using seven tools.

Cont.

No	Journal	Method	Result	Adaptation
5.	<p>The Relationship Between Total Quality Management (TQM) and Organizational Performance</p> <p>Sanjar Salajegheh Ph.D., Rostam Pourrashidi Ph.D., Atefeh Yazdani</p>	Seven tools	<p>The result showed that there is a positive and significant relationship between establishment of Total Quality Management and the organizational performance in Kerman Steel and Rolling Plant,</p>	<p>The purpose of the journal is to prove there is a positive and significant relationship between total quality management establishment and organizational performance. It is noted that this study is descriptive-surveying method with the purpose of applying it.</p>
6.	<p>Proposing an Integrated Framework of Seven Basic and New Quality Management Tools and Techniques: A Roadmap.</p> <p>Arash Shahin, S. Mohammad, Arabzad,</p>	Seven tools	<p>A new roadmap was proposed for applying the seven basic and new quality tools and techniques in an integrative network.</p>	<p>By using seven tools of quality, writer hope that the journal can guide manager to make decision easier and help manager to solve the problem easier.</p>

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Based on the journal concluded above, researcher can conclude again that there is a relation between the past research and this research, it is in overall, all use of seven quality method proved success in help the researchers solve the problem of quality production that happen there. Because this research also have correlation with the production problem especially in quality management, all of journal above can be used for references and guidance to make this thesis better.