

# Lean transformation at kemet electronic, mexico



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### Introduction

Lean practices are usually applied in a variety of industries so as to enable them produce goods and services that will be of value to the customers while at the same time minimizing the amount of waste and maximizing the quality of the goods and services. Moreover, organizations that have undergone lean transformation have been in a better position to ensure use of minimal costs, human effort, space, capital and time (Lean Enterprise Institute, Lean Enterprise). KEMET Corporation, an electronics components manufacturer is an example of an organization that has undergone a lean transformation that integrated the lean practices in its operations so as to improve on the quality of its products.

### Lean practices at KEMET Corporation

KEMET Corporation is an electronics manufacturing company established in 1990 thus 18 years old by now. However it emerged from the Kemet laboratories and was formed by Union Carbide Corporation in 1919 in order to buy the Cleveland based Cooper Research Company which had invented a high temperature alloy that looked promising. The company achieved positive growth until it completed its Initial Public Offering in 1992 (KEMET Corporation, History of KEMET).

KEMET offers a line of products that could be considered the most complete in the surface mount and through-hole capacitor technologies. The company's products could be broadly categorized under two product platforms. These are the surface mounted which are mostly applied in

automotives as well as commercial and consumer applications. The through hole products on the other hand are mostly intended for reliability applications which may include medical, military and space applications. Some of the products produced by KEMET Corporation include tantalum, ceramic, film, aluminium, electrolytic and paper dielectrics. The capacitors produced at KEMET are used in a wide range of electronic equipment (KEMET Corporation, Products)

KEMET Corporation was formed after a group of investors together with senior managers at KEMET bought the remaining stock of KEMET Electronics Corporation. Therefore, the KEMET plant corporate headquarters today is situated at Simpsonville, South Carolina. KEMET Corporation has established manufacturing plants in Simpsonville and Fountain Inn in South Carolina. It also has manufacturing plants in Matamoros, Monterrey and Ciudad Victoria in Mexico, Suzhou in China as well as in Evora, Portugal. KEMET Electronics, Mexico has sales offices and distribution centres spread in various locations across the world (Shingo Prize, 1)

It is from Union Carbide Corporation's decision to divest its strategic business plans that KEMET Electronics Corporation was formed. This is because the management bought the company from Union Carbide Corporation. However, Union Carbide kept hold of 50% of KEMET's stock even though it remained as a stand alone company. However, KEMET Corporation was formed after the purchase of the remainder of KEMET stocks by the senior management at KEMET and Citicorp Corporation putting an end to the ties that the company had with Union Carbide Corporation. Therefore KEMET Electronics, Mexico is a corporation of a group of investors who cleared the

ties it had with Union Carbide Corporation, its parent company. KEMET Corporation also registers its filings with the Securities and Exchange Commission (KEMET Corporation, about KEMET history).

KEMET Corporation was challenged by the constant product demands from their customers. The consumers needed products that were smaller, faster and cheaper and this therefore called for the development of new products that would be meet the needs of the customers sufficiently. Besides the needs of the customers were covered by a wide product portfolio since they are used in a variety of applications (Shingo Prize 2). Further still, due to the wide product portfolio and the constantly changing demands from the consumers, KEMET Corporation was also faced with the challenge of producing products that are of high quality with minimal defects (Shingo Prize 2).

What is more, KEMET Corporation also had to overcome the challenge of applying minimal human effort, space, and capital as well as time so that their products could be of value to their customers. Additionally the company also needed to reduce problems that would arise in any cases of overproduction not forgetting unnecessary movement and conveyance. Therefore it was upon KEMET Corporation to design strategies that would look into the challenges that they were facing. This would couple the guidelines that the company was already following in order to ensure that their customers were satisfied with the products that they manufactured (Shingo Prize 2).

Therefore a look into these challenges was one of themotivationpoints for the company when they decided to apply the Lean practices. However apart

from this, the company also looked into the existing guidelines and since they were not sufficient enough on their own it was advisable to couple the existing strategies with strategies acquired from the Lean practices (Shingo Prize, 2).

Among the existing guidelines included the need to provide quality and reliable products and the need to apply the one stop shop manufacturing strategy. Additionally the company also needed to operate worldwide locations that were of low cost and easy for the customers to buy from. KEMET Corporation also needed to keep on building the organization not forgetting that they also needed to build what their customers want. Further still, KEMET Corporation was also guided by the application of methods and processes that guaranteed continuous flow and quality at the origin of the products. Therefore the company based on these principles the company saw the need for initiating the Lean practices so as to be able to follow through these guidelines (Shingo Prize 2).

The implementation of the Lean practices was however aimed at the achievement of certain goals as outlined hereafter. KEMET Corporation needed to ensure that there was constant improvement in the operations of the company as well as a constant production of quality products. Therefore the company's goals included extensive minimization of defects in the product produced and to ensure that it remained the technology leader in the industry (Shingo Prize 2).

Further still, KEMET Corporation aimed at guaranteeing sufficient delivery thereby providing on time delivery to their customers. The company also aimed at getting the capability of the Six Sigma process and maintaining the

lowest levels of the total cost of ownership. The company also aimed at achieving the world class cycle time efficiencies (Shingo Prize 2).

KEMET's strategy was to couple the Lean practices with the existent guidelines within the organization. This would enable them achieve the goals that they had laid down for the implementation of the Lean strategies. Therefore KEMET would implement the themes and priorities of the organization together with the Lean and Six Sigma tools during the implementation of the Lean practices (Shingo Prize 2).

KEMET also incorporated all employees ranging from floor operators to departments to plant managers in the execution of the objectives laid down for the implementation of the Lean practices. Further still, the company also intended to make sure that all the production systems of the organization were communicated to each and every employee at the various levels and forums. This would guarantee better understanding and application of the varied methods and processes that would be applied in the continuous flow (Shingo Prize 2).

In executing their lean practice strategy, KEMET ensured that all their employees including the management personnel had the best training. This saved the company from the need of outsourcing which would have been more expensive (Shingo Prize1). As well, the company executed their strategy by ensuring that the working environments were very safe and that its workforce was responsible for creating the significant changes geared towards superior services, good quality and great performance (Shingo Prize 1).

Ensuring that the employees fully implemented the lean practice business strategy required KEMET to come up with a system namely the KEMET Production System. This system enabled its employees to successfully apply the methods used in lean practice so as to ensure a constant flow and quality of the products (Shingo Prize 2). The management's role included ensuring constant improvement strategies in order to achieve a higher quality in the end products, lower costs and on time delivery of products. The management's role also included developing new products that will meet customer needs by delivering the services in time (Shingo Prize 2).

Having established how to best implement the lean practice strategy, KEMET's management role also included coming up with ways to eliminate shortcomings and errors that may lead to customer dissatisfaction. The management role also included key decision making which was based on facts. The decisions made significantly determined how problems would be identified, their causes highlighted and solved (Navy Enterprise, Lean Six Sigma).

Located in Mexico, KEMET is coupled with a culture that continuously strives to effectively improve and succeed. Therefore, it is faced with very stiff competition that arises from other companies. In order to keep up with the culture for competitiveness, KEMET has been forced to look into its ways of delivering their products by coming up with better and more creative ways in facing risks that will lead to successfully achieving their objectives (Shingo Prize 2).

In regard to the implementation of the Lean and Six Sigma tools, it is evident that KEMET has realized a change in its performance. The company has

managed to create tantalum capacitors that are faster than the previous ones and it has also been considered the world's fastest tantalum capacitor. Furthermore, KEMET also has managed to have the most complete line of capacitor technologies within the three types of primary capacitors. This means that it has been able to expand its product line. Besides, the company has also managed to expand its product speciality line (SEC Info, KEMET Corp).

KEMET has also managed to minimize the cost of manufacturing its products as it continues to apply manufacturing, assembly, testing and packaging machines and methods that are faster and more efficient in its operations. This has therefore enabled it to minimize its production costs and fix affordable prices for their customers. The company also a diversified market as its products are sold across various industries including computer, communications, automotive, military as well as aerospace industries (SEC Info, KEMET Corp).

During the three months which ended in June 30, 2007, KEMET reduced its workforce thus affecting approximately 273 employees. With regards to manufacturing relocations, KEMET incurred expenses which amounted to \$ 1.3 million in the month ending June 2007 as compared to \$4.6 million in 2006. Implementing lean practice enabled the company to improve on its operating income due to a realization of higher sales volumes, lower charges during restructuring and lower administration costs. For the period ending June 30, 2007, the company's operating income was estimated at \$6.2 million compared to \$0.5 million in the same period within the previous year (SEC Info, KEMET Corp).



In reviewing their performance, the operating cash for KEMET decreased and was attributed to a decrease in accumulated expenses, income taxes and increase in inventories among others. For the period ending in June 30, 2007, the company used \$25. 1 million which was very high when compared to the amount used in the same period the previous year which was \$3. 7 million. By evaluating their potential risks, the company was able to significantly address the problem of fluctuations in the demand for capacitors in the electronic market. The company managed to impact on their performance by reducing the costs of its products so as to combat the descending price trends in the market. The company's performance was also boosted by coming up with ways of keeping up with stiff competition and addressing adverse effects that may affect KEMET's profitability (SEC Info, KEMET Corp).

Aside from successfully implementing the use of lean practice and winning the Shingo Prize 2008, KEMET was able to make other achievements. In other words, the company successfully reduced the risk factor costs which consequently led to achieving better health, environmental and safety in the year 2007. The cost reduction included a 90% cost reduction for epoxy disposal. In achieving the set goals for quality, the customer complaints significantly reduced with the overall yield increasing approximately from 95% to 97% in 2005 and 2007 respectively (SEC Info, KEMET Corp).

KEMET Electronics was also able to achieve quality by reducing scrap level and the total plant cost. Additionally, the company was able to achieve a higher delivery and productivity by significantly reducing unnecessary costs in logistics and the purchase of raw materials among others. As well, this achievement was enhanced by increase in sales and the use of technology

and innovation which subsequently led to a realization of greater profits (Shingo Prize 1).

By implementing lean practices and following its guidelines and strategies, KEMET was able to achieve their set goals. Subsequently, this led to putting their business in a more competitive position over other similar companies. In fact, having a better knowledge and understanding of the basics of continuous flow and quality by its employees enables the business to effectively ensure that their products are of high quality thus making the business is able to maintain its competitive advantages (Shingo Prize 2).

The realization of their competitive environment led to KEMET coming up with better and more creative ways to meet the challenges so as to keep up with the market demands. Following different guidelines which included; ensuring that the business becomes a leading capacitance company, ensuring that the customers' needs and wants are responded put the business competitive position.

Use of Lean practice in a business enables a business to come up with better ways of ensuring that quality is improved and costs decreased. I think the company's success will continue only when the guidelines are strictly followed by the management. In other words, I think that working towards achieving their set goals will significantly impact on continuous success of the company. This will be so based on my thoughts that having a set goal will make the business management and employees work towards achieving their goals thus making them succeed in their business.

The company came up with better ways and guides that will work on their favour in terms of maintaining their competitive advantage. Being <https://assignbuster.com/lean-transformation-at-kemet-electronic-mexico/>

competitive will mean running an extra mile in ensuring that customers are heard and their preferences met so as to stand out from other companies. It is obvious that KEMET Corporation is aware of this thus the coming up with different strategies to ensure customer satisfaction.

The most important aspect in ensuring success for the company included reducing costs, providing more knowledge and understanding to the employees and ensuring quality. I think these three are very crucial and when considered, the success of the company will continue. It is also a clear indication that the company has been able to achieve a lot following lean practice.

Coming up with new, smaller, more affordable and faster products may also lead to success by the company since different customers will be catered for. The success of the company will therefore continue because I think that the company has been able to identify the key areas that are still lagging behind and which need to be improved on. Also, by identification of priorities puts the company in a better position of ensuring success.

Among the areas I would focus more on in order to ensure a continuous improvement if I ran KEMET operations will include coming up with superior substitute products which will be affordable and of good quality. I will do this so as to guarantee that the company offers different types of products that will not only look at satisfying a limited customer base but an unlimited one.

Also, for continuous improvement, I would focus on a continuous attempt to build the organization for better. This will include expanding and coming up with strategies that will enhance employees' knowledge and understanding on working towards certain goals that will build the organization and its

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employees. Since I will be in charge of operations, I will focus on expanding in low cost locations so as to decrease the costs incurred. This will also encompass the use of technology so as to keep up with modern trends which will lead to manufacturing of modernized and reliable products. I will make sure that these products will be easy to buy by coming up with competitive prices and a well networked distribution.

### Conclusion

Lean practice acted as an effective system for organizing and managing product improvement by ensuring quality for KEMET Electronics. Additionally, the practice enables a plant or company to determine the challenges it is faced with in its production quality. When successfully implemented and guidelines followed, undergoing a lean transformation will enhance productivity and quality factors which will enhance customer satisfaction and cost efficiency.

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