TQM's Resurgence and Six-Sigma

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ABSTRACT
Today, every modern organizations look forward to catch the successful in each steps in their work. To gain the successful factor they should follow set of tools and fixable technique. This technique can improve process by removing the cause of defect. Six sigma take the role for that purpose. The emergence of six sigma started at 1986 by Motorola and it use today by many industrial sector.

In addition, TQM (Total Quality Management) is another key factor to improvement but it's for the entire process. Total quality management and six sigmas are considered two independent systems to enhance businesses and organization's output regardless of they are products or services; both are concerned about improving the quality of the organization. Although each of these two approaches shares common aim however they have some differences. The ultimate goal of total quality management is customer satisfaction by enhancing the quality of products and services. On the other hand, six sigma's focuses on the continuous improvements

Keywords
Total Quality Management (TQM), Leadership, transformational leadership, transactional leadership, charismatic leaders, rational leadership, legitimate power, reward power, Coercive power, expert power, Customers' centered approach, customer relationship management (CRM),Supply Chain Management, Design for Six Sigma.

1. INTRODUCTION
The race to improvement and development and innovation the activities of the organization, and applied methods and techniques, and all of the outputs provided in the form of goods or services. With the increase of community and customer care, the quality is the difference in determining the organizations centers on the market element. Quality and require that each is trying to collect all the capabilities of each organization and recruitment materials to achieve its objectives efficiently and effectively. The concept of total quality management has become a day of the most important management concepts prevalent in the world, and since the start of this Declaration concept in the fifties in Japan and has achieved some of the organizations in which unprecedented levels of quality.

2. FACTUAL MANAGEMENT
The primary engine for total quality management is to motivate individuals to work, and relies on the principle of this administration not to be afraid of risk and seize opportunities. Management and be open and honest with employees, and establish channels of communication, reliable, and reward individuals and owners of constructive suggestions, and recognize their participation and help them in case of failure.

And calls on the concept of total quality management to accept the change and the continuing evolution of the organization and life, and emphasizes self-censorship and creativity by the staff, and demands the cooperation of an active rather than just receive commands and obey them.

It is therefore conclude that the environment of total quality management is keen on the following :
 -Ensuring customer satisfaction
-Building teamwork
-Openness in the work
-Listening to others
-Attempt to reach the stage of zero errors
-Clarify goals
-Analysis of the problem
-Address the problem
-Make decisions based on facts
-The application of a number of tools and statistical methods called by some name (basket of tools and methods of quality The Quality Box)
-Resolve conflicts
The total quality management need to achieve realistic to traffic so far are applied effectively.

3. PREPARATION
It is the stage where managers decide their intention to take advantage of the benefits of total quality management, where they are trained to gain the confidence of change that will happen at this stage managers seeking to implement quality for customer satisfaction and gain competitive advantages

4. PLANNING
At this stage is developing plans to manage and improve the quality and make it understandable by everyone as is the establishment of an advisory group task link between workers and improve the efficiency and the application of the required quality

Given the consequences usually on the application of total quality management of change, and what is expected to encounter this change of resistance it management must be ready to face the opposition at every level and Being Blindsided aware and know that it is difficult to change people's perceptions between overnight, and can in this case, through training, to face resistance before it occurs, and that good policy can convince everyone that the benefits of the application of total quality management

When developing any plan for the implementation of TQM must fit this plan, the organization's culture and needs, because what fits an organization may not be suitable for another organization, which differs from the application of total quality management for different objectives of the organization and the nature of its size and the technology used, The plan may be long or short-term, but the result should be an incentive to work and often includes planning for total quality management survey and the definition of their customers, and build teams to solve problems, and a full assessment of the organization.[1]

5. CONTINUAL IMPROVEMENT

Strength TQM come from moving beyond the administrative practices and common sense - using TQM facts, the process of measuring and evaluating statistical, rather than personal opinions, and practices based on experience, or arbitrarily set numerical targets. Makes a clear distinction between the processes and events - it uses different protocols for methodological issues and incidents. But, more importantly, total quality management is not a project for once - it's a different management model, which is at the level of business unwavering dedication to achieve long-term success through organized thinking, continuous improvement and a focus on customer satisfaction. It is necessary here to identify the evolution of total quality management since the start applied to organizations

Starting from Frederick Taylor coined his theory, which focused on the work and improve performance as well as Max Weber's theory of bureaucracy and the structural shape of the enterprise and Division of tasks

Then put Elton Mayo and his colleagues theory linking humanitarian and production quality morale of employees as linking them to the leaders

The Japanese also contributed significantly to the development of total quality management so focused on the strategic planning of the institution and teamwork and employing statistical and behavioral science in organizational development and administrative organizations tied quality output [2].

Thanks in establishing the concept of Total Quality Management to Edward Fleming, which has adopted a Japanese industrial facilities

And natural and applied his ideas on the ground and there appeared the Japanese model of TQM.

As put by Dr. Joseph Boumediene four historical phases of the evolution of Total Quality Management [3].

1-stage examination at the beginning of the twentieth century

A stage that has been the application of scientific management of its existence so that it is the division between the worker who produces and between the inspector who examines the quality of the product and thus produces a quality free from defects though it does not prevent the occurrence of the error in the product

2-stage quality control (1930-1950 AD)

At this stage, focusing on the facilities to reduce defects in the product

3- Phase quality assurance (1950-1970 AD)

At this stage has been the transition from product quality to the quality of the organization producing which aims to improve the levels of management

4-Total Quality Management (1970 - present)

At this stage, total quality management has become a comprehensive system for improving and operating so that shared workers, customers and suppliers to raise the level of quality.

6. RATIONAL LEADERSHIP

Leadership is the act of inspiring, motivating influencing others and making proper decisions as it highly demanded for all organizations to run effectively and successfully hence leaders can impact others to achieve organization's objectives and goals.

Leaders are future oriented with regards to their actions, the decisions they take and how they view the future of the organization. Trust and mutual respect are some of the traits they aim to share with their relationship with others. They always seek innovations and motivate their followers to achieve the organization's vision.

There are types for leadership, however at certain point all leaders possess certain type of power allow them to influence people's behaviors. Such powers are legitimate power which is represented in the authority a leader has due to his position in the organization. Another type of power is reward power where leader can give rewards or withhold them as way to influence the behavior. Coercive power is when leader use his power to penalize others and the expert power is when a leader distinguish him with great deal of knowledge, expertise, and skills that attach other to follow him and learn for him [4]. Effective leaders share common traits and personal qualities. Such personal characteristics are intelligence, high energy, integrity, maturity, honesty, confidence, expertise, patience and knowledge. Not necessarily all leaders possess all such trait, they might own some of them.

There are types of leadership Transactional, transformational, charismatic and rational leadership. The charismatic leadership is where leaders' vision inspires others and it mainly focuses on leaders' astonishing characteristics; usually charismatic leaders are enthusiastic and self-confident about their vision and their message can easily reach to their followers. On the other hand, the transformational leadership is a type of leadership where subordinated are influenced by leaders' actions that making them aware of how important are the jobs they are doing, aware of the contributions and the effort they are doing to achieve the organizational goals. Traditional leadership is where ruling is passed down by heredity, and rational leadership. Finally the leadership that rewards the followers when they do high performance and scolding them for weak act is the transactional leadership.

Rational leadership is a leadership form that has been usually tied to bureaucracy, legitimacy and legal rationality as it is empowered by believing in law. According to Max Weber the author who wrote about rational- legal authority and classified the types of authorities, rational legal leadership was found more in the modern state of the twentieth century as it was a result of feudal struggle for power [5]. Rational leadership can be found mostly in modern states, city government and business organization regardless if they were public or private.

Rational leadership and rational decision making is an important feature for an organization success hence rational decisions involve serious of actions such as gathering information, investigating it, analyzing it and evaluating it before making the final decision to insure accuracy and eliminate risks.

The relationship between leaders and the subordinates depends of rational self-interest behavior which has been defined as the act that leads to the best outcomes for the person. Leaders set the organization's environment by setting the vision, influence employees' behaviors and motivate and reward great performance. For that, the role of leadership is so important in controlling the quality across the organization hence leaders lead by example instead of imposing tasks to their employees [6]

Finally rational leadership has great impact in controlling the quality. Six sigma start by providing high-ranking leadership training and any organization can be successful in applying Six Sigma if it has sincere leadership and management execution [7]

7. SIX SIGMA EMERGENCES
Six sigma is set of tools for improvement. The aim of six sigma is to reducing quality costs. This concept started at 1987 by Motorola. [8]

Six Sigma methodologies have evolved into a statistically oriented approach to process, product or service quality improvement. As a bridge between the Quality Philosophy and the statistical tools available [9].

The six sigma was applying in many areas in business, health and education to emphasis improvement in these areas. The emergence of six sigma in more than area prove that many organization tend to six sigma to get improvement and minimizing the cost which cause by errors.

Depending on statically approach for the process inside the organization, we can determine how much error will occur in that area.

In business sector, some researchers present Design for Six Sigma (DFSS) as a versatile methodology for approaching supply chain design and performance measurement. The Demand Management process is described as a critical to customer requirements (CCRs) and its importance to business performance Elaborated [10].

8. CUSTOMER CENTER APPROACH
One of the important elements of stakeholders of the business's success is customers. Customers are the people who are willing to purchase the final goods of the organizations, their services or both. Without customers businesses might go out of the market. The ultimate goal of any business is to make profit which is considered as an outcome of customers' commitment in demanding the organization's product or service. For that, most organizations care about their customers as a first priority in their decision making process. Businesses always strive to attract their customers by delivering products or service with desired quality and prices [11].

Nowadays customers are educated and aware of what is good product and what is not, they are smart enough to choose what they will consume and if a company could not produce quality goods they can easily switch to competitors which are other businesses that produce same line product or services. Quality is defined as services or products' traits that satisfy the needs. Total quality has been always factor customers' satisfaction and creating values.

Customers' centered approach is the organization's actions of caring about customers' satisfaction and needs; Hence organizations always strive to care about the quality of the products and service received by customers. Also, in order for

enterprises to control the quality they deliver to customers, they need to satisfy their customers. Organizations listen and track customers' feedback about what they expect from their products or services and their real experience using them. They can track the customers' feedback through questioners, direct communication, and focus group and sometimes by observation. In addition, organizations should not only focus about delivering their products to customers, instead they need to ensure that customers' feelings towards the products are positive and they should encourage the post purchase feeling that customers develop after trying the products and services of the organization because that is a leading point for customers' loyalty and satisfaction. Some of the tools that the organization use to encourage satisfaction of post purchase behavior is like offering money back as a guarantee for the quality of the product and gaining the consumer's trust and loyalty. Moreover, is obtaining customer's contact information at the point of purchase to get customer feedback of product quality [12].

Customer satisfaction should be measured regularly by the organization to ensure business stability. Highly satisfied customers become loyal and last with the organization for the long run, their positive word of mouth can easily bring new customers and allow expanding the business. In order for the organization to keep on satisfying their customers they have to adopt the approach to total quality management which is the continuous improvements of the organizations' products and services. The quality improvement is very important factor that lead to positive outcome to the whole organization; hence as the product or service's quality increases, the customers' satisfaction increase which means that are customers are willing to purchase the products and this will increase the sale level and decrease the cost. For that quality have been always affecting the organization's profitability [13].

Caring about customers and establishing strong relationship with them is essential for the long term. Organization should apply the customer relationship management (CRM) approach which focuses on handling the customers' information, and feedback to elevate their loyalty. This will facility the process of serving customers effectively and efficiently and leads to great deal of customers' satisfaction.

9. CLOSE EMPLOYEE PARTICIPATION
The cultural of organization change cause by changing in many factors inside the organization. The employees are one of the key factors that can be considered as change. New organization concept tend to reduce numbers of hierarchical layers and to introduce more numerical and Qualitative flexibility for the labor force employed. The reality which emerges in today's labor relations is complex and characterized by the direct participation of core workforces in managerial human resource concepts, flexibility for the marginal workforce and diversifying policy options for trade union [14].

10. CONCLUSION
In conclusion, we emphasize that the commitment to quality and standards is the key to success for any organization in the atheist and the twentieth century and that any contemporary director is keen to apply the principles of total quality management in his organization to ensure the continuity of the success of the organization and its survival in the competition.

11. ACKNOWLEDGMENT

12. REFERENCES

[1] Alshamary, DR.Hamed. 2007. Total Quality Management industry success in the race challenges. 2007.

[2] Garza-Reyes, Jose Arturo, Vikas Kumar and Rocha-Lona, Luis. Jun 25 2013. Building Quality Management Systems: Selecting the Right Methods and Tools. Jun 25 2013. pp. 44-51.

[3] Joseph Boumediene, DR.Boumediene. Total quality management and outstanding performance. pp. 130-133.

[4] Jones, G. & George, J (2008). Contemporary Management. 5th ed. New York: McGraw-Hill Irwin. 560-578.

[5] Rational- Legal Authority.(2014). Boundless. Available at: https://www.boundless.com/sociology/textbooks/boundless-sociology-textbook/government-15/politics-power-and-authority-112/rational-legal-authority-623-8985/ retrieved at 9 Oct.2014.

[6] Barrow,L. & Mirabella,J.. (2009). Journal of Leadership Studies . An Empirical Study of Other-Oriented and Rational Self –Interest Leadership approaches. 3 (3), 3-4.

[7] Morgan,J.(2005). Six Sigma- the route to business excellence. Available at: http://web.a.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=7&sid=3ceb36f1-2cba-439a-b607-bb2b86a5f6d7%40sessionmgr4003&hid=4109. retrieved at 17 Oct.2014.

[8] Gerald, Hahn, et al. 2012. The Impact of Six Sigma Improvement—A Glimpse into the Future of Statistics. The American Statistician. 2012.

[9] Naidu, NVR, Babu, KM and Rajendra, G. 2006. Total Quality Managment. 2006.

[10] Implementing Design for Six Sigma to Supply Chain Design. Amer, Yousef, et al. 2007. australia : s.n., 2007.

[11] Madura,J (2007). Introduction to Business. 4th ed. Canada: Thomoson South-Westren. 16-17.

[12] Turner,P. & Krizek, R. (2006). A Meaning-Centered Approach to Customer Satisfaction. Available at HYPERLINK "http://mcq.sagepub.com/content/20/2/115" http://mcq.sagepub.com/content/20/2/115 retrieved at 30 Oct.2014.

[13] Kotler,P. & Keller,K. (2006). Marketing Management. 12th ed. New Jersey: Peasrson Education. 145-148.

[14] Information Technology, New Organizational Concepts and Employee Participation - Will Unionism Survive? Helfen, Markus and Kriiger, Lydia. 2002. 2002.