SJCC Management Research Review
Printed ISSN - 22494359
Vol: 4 No : 1 June 2014, Page No: 1-10

Knowledge management: A key Strategy to achieve Six Sigma Quality Standards.

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Abstract

In globalization era people are looking for a quality oriented products and services where they are ready to invest more on quality products. To achieve high quality standards even organizations also focusing on world class quality standards like ISO 9000 certifications and six sigma standards to attract customers towards their products with low cost. In this process organizations need a key strategy to adapt and meet all these standards in the work environment, for this the top management should follow a structured process to achieve desired standards in the company. Knowledge Management is a emerging process of all organizations to adapt and implement critical processes in the companies nowadays. The power of Six Sigma and its systematic approach and the power of knowledge management (KM) are probably not ephemeral and will probably not come and go. What they will do is become part of the fabric of the way we work and our job is to make sure that the best of both those comes together. For this the organizations should follow a structured approach like KM. This efforts typically focus on process and ingredients of KM and how it is useful to implement six sigma quality in the organization, such improved performance, competitive advantage, innovation, the sharing of lessons learned, and continuous improvement of the organization.

Key Words: *Knowledge, quality, customer needs, implementation.*

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Objectives:

1) To understand process of knowledge management.
2) To find out the link between proposed two themes.
3) Find out the importance of six sigma implementation in the organizations.
4) Suggested model for implement six sigma by using knowledge management.
5) Results by effective implementation of suggested model.

Statement of the problem

"A lot of what firms are trying to do when they do KM is save on the cost of not knowing: the duplication, waste, and mistakes of the past, "They're trying to shorten their learning cycles, cross silos and boundaries (which is one of the things we think is going to be a value-added to Six Sigma), and apply robust methodologies. And it also focuses on knowledge creation, which you would expect from Design for Six Sigma."

Need for the Study.

"Quality is the success mantra for companies in today market", to achieve desired quality standards compare with competitors we need a tool and its implementation process. Both Knowledge management and six sigma is two sides of a coin where two issues are most important and too difficult to understand and implement in organizations, where we use properly both together we can get excellent quality products and services in the organizations. At the same time both are need systematic planning and process we expect 100% results in all aspects of quality like customer satisfaction, 0 defects rate, 0 wastage etc...

Knowledge Management (KM) *comprises a range of practices used in an organization to identify, create, represent, distribute and enable adoption of insights and experiences. Such insights and experiences comprise , either embodied in individuals or embedded in organizational processes or practice."*

Definition: "knowledge management (KM) as a process of organizing and distributing an organization's collective wisdom so the right information gets to the right people at the right time." Robbins (2003)

An Intersection of Approaches Both KM and Six Sigma are quickly infiltrating business management systems with problem-solving and process-optimization methodologies. Six Sigma should not be viewed as a quality program that is commissioned to reduce defects but as a methodology that helps companies better meet the needs of their business. KM shares this goal.

In a recent teleconference with more than 100 participants representing all corners of the marketplace, KM thought leaders at APQC discussed how the principles of Six Sigma and KM support each other and create a strong foundation for a learning organization. "APQC believes there is a very powerful intersection and synergy between the discipline of Six Sigma and the discipline of KM," said O'Dell.

KM is an Identical tool which is used to implement of any modern techniques like six sigma in any organization in a systematic way followed by an pre defined sequential format ,where problems in each and every area should be consider as a valid feedback and that should be considered as a valid lesson for future .

KM process starts with Creation of new knowledge to implement various departments what to implement for better results, then identify the areas where this is the need of implementing advanced knowledge and find the potential people who can ready to adapt quality knowledge. Collect the list of areas for change and assess the pros and cons of the change whether it is fruitful for change or not. Organize the proposed knowledge implementation and share all the departments where do you want to adapt it and use it successfully for effective results.

Culture through five principles:

1. Specify value in the eyes of the customer.
2. Identify value stream and eliminate waste and variation.
3. Make value flow at pull of the customer.
4. Involve and empower employees.
5. Continuously improve knowledge in pursuit of perfection.

KM champions promote the four-step KM process (Figure 1) in every business and

function. Our approach was to recruit knowledge management champions that were in the Six Sigma expert populations," said Baker. "So we wanted the change agents, if you Will, that were already trained to be the knowledge management champions."

What is six sigma?

Six sigma can be defined as a highly disciplined, organized, systematic, proactive, powerful and multifaceted problem solving method (OR)

continuous break through business process improvement strategy that can to find out and eliminate the sources of error the causes of customer defined mistakes or defects, drive out waste in business process, and reduce variation ,thereby improving the efficiency and effectiveness of organizational operations, and strive to reach a level of 3.4 DPMO (Defects per million opportunities) using extremely rigorous data gathering and statistical analysis ,thereby meeting or even exceeding customers needs and expectations with a focus on financial measurable bottom line results.

Why six sigma is more popular?

The success mantra for all multinational organizations in the world is maintain top most quality in their products. For the sake of quality contest in the market companies are acquiring world class quality tool called like CMM, six sigma etc.., which needs a more micro view observational process where all myriads of issues are consider for a product quality improvement ,which called as metrics in six sigma (like FMEA, kaizen etc..).

What Companies will get with six sigma:

1) Cost reduction in production and reduction of wastage of raw material.
2) Productivity improvement by providing effective training to employees
3) Market share growth with brand name and fame for the quality.
4) Decreasing customer retention rate.
5) Cultural change in the society with high quality product.

Six basic themes of six sigma:

- ✓ Genuine focus on the customer needs.
- ✓ Data and facts driven management.
- ✓ Process focus on management and improvement.
- ✓ Pro active management

- ✓ Boundaries less collaboration for quality improvement (joint ventures, mergers etc..).
- ✓ Drive for performance and tolerance for failure.

KM approaches include self-service, networks and communities of practice , and the transfer of best practices. Self-service – involving content management, portals, search functions, and expertise locators – is highly technology-enabled and involves explicit knowledge. "In the self-service arena, KM approaches are about connecting people to information, "In Six Sigma initiatives, self-service involves project databases and dashboards so that the Black Belts can see what sort of projects have been done and what the results have been."

Six sigma implementation Methodology

Six Sigma has two key methodologies: DMAIC and DMADV, both inspired by Deming's[2] Plan-Do-Check-Act Cycle. DMAIC is used to improve an existing business process; DMADV is used to create new product or process designs.

The basic methodology consists of the following five steps:

D*efine* process improvement goals that are consistent with customer demands and the enterprise strategy.

M*easure* key aspects of the current process and collect relevant data. ***A****nalyze* the data to verify cause-and-effect relationships. Determine what the relationships are, and attempt to ensure that all factors have been considered. ***I****mprove* or optimize the process based upon data analysis using techniques like Design of Experiments.

C*ontrol* to ensure that any deviations from target are corrected before they result in defects. Set up pilot runs to establish process capability, move on to production, set up control mechanisms and continuously monitor the process.

Six Sigma identifies several key roles for its successful implementation.

Executive Leadership, Champions, Green Belts, Black Belts, Master Black Belts

But the purpose of KM is different than Six Sigma. "The purpose of KM is to help the right information and knowledge flow to the right people at the right time so they can make decisions," said O'Dell. "Some of those decisions are going to be about improving a process, but the objective of KM is not the same as process improvement."

KM approaches include self-service, networks and communities of practice (CoPs) , and

the transfer of best practices. Self-service – involving content management, portals, search functions, and expertise locators – is highly technology-enabled and involves explicit knowledge. "In the self-service arena, KM approaches are about connecting people to information," "In Six Sigma initiatives, self-service involves project databases and dashboards so that the Black Belts can see what sort of projects have been done and what the results have been." Networks and CoPs are groups of a common interest that share and learn information, trade tools and best practices, and solve business problems. "Networks and communities of practice (CoPs) are probably the most vibrant and powerful KM approaches," Some organizations have begun to use them in their Six Sigma initiatives, either with communities of their Black Belts or of people who may use the results of those projects. APQC thinks CoPs are not used significantly enough, and that could be one of the problems with the replication of findings from Black Belt projects."

Integrated approach for six sigma and Knowledge management (Figure 2):

The KM process starts with creation of knowledge for where to implement, when to implement and why to implement new things in the organizations. The area of six sigma implementation is somewhat critical to adapt in the present running system where training of employees is a major tough task for the companies to learn them how to deal with six sigma metrics and their implications in different areas of manufacturing and services sector. The essence of Knowledge management comes here to identify the needs of employee training methods and asses their present capabilities where they are strong and weak in six sigma related issues .

Often employees are not ready to invite new changes in their daily job work, but the importance of quality should be explained them and importance of gaining loyal customers towards your products needs us to learn new things and adapt new technologies in the present running system.

All these important measures are made by considering customer needs and wants in the present product structure if they are ready to accept new changes and new technologies in their mind with less or affordable cost ,then we go for implementation of all quality things in our product otherwise it is waste process to adapt six sigma in our organization.

Results by implementation of suggested model:

- Employees understand the need of quality.
- Employees are ready to work on customer needs to satisfy them with quality.
- Organizations are ready to train the employees according to the company needs.
- Continuous knowledge improvement programs will be conducted for the quality improvements.

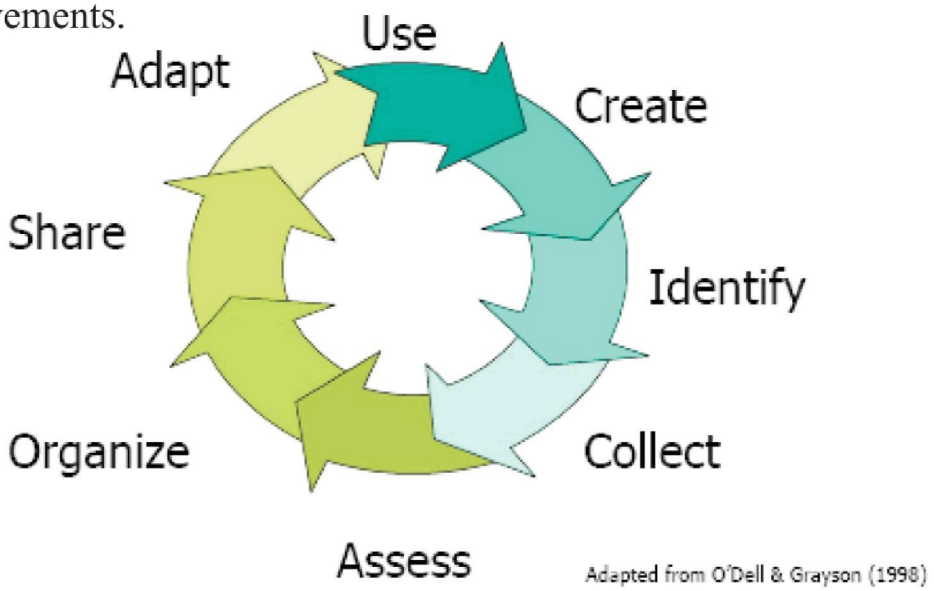

Figure 1: Knowledge Management Process adopted from O'Dell &Grayson (1998).

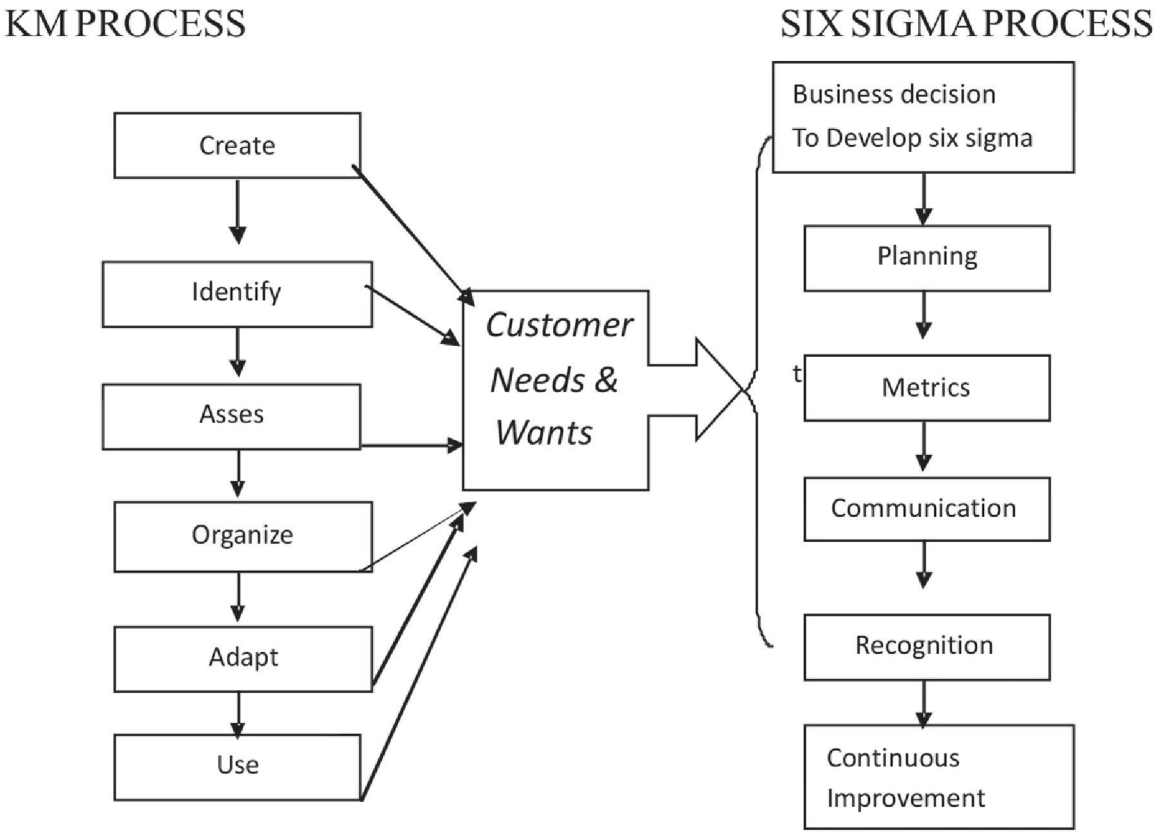

Figure 2: Suggested Integrated Model

Correlation between Km & Six Sigma

Six Sigma professionals also can learn from KM strategies that sustain change. For instance, communities of practice are more effective than handing off or turning over a project. Larry Handler from Capital One said, "All of the people in their day-to-day business, you're kind of converting everything into a Six Sigma way of doing it. And it's not really a turnover to some functional group; they are direct members of the given functional group," And with the potential duplication of projects across the enterprise, Six Sigma does not fall victim to corporate amnesia. KM can also be used as a model for the transfer of best practices. How do you capture knowledge so it will be reused? How do you transfer improved processes to other sites? "Part of the dilemma with Six Sigma without KM is what happens when the members on the team you need are outside your normal managerial sphere of influence," said Gia Preston of Sprint. And what the KM community of practice and tools like the charter do is allow us to have that ongoing Six Sigma, where it breaches divisional or departmental … boundaries. And that's where it has really helped us."

Conclusion:

Six Sigma has not only its place as a process and quality improvement methodology but also for creating knowledge in an organization. Employees being exposed to Six Sigma projects through their participation as team members not only share their knowledge but also gain new knowledge. Both are valuable assets as they help building a learning organization thus being a source of competitive advantage. The efficiency and effectiveness of repositories for knowledge storage is very much depending on the individual that uses or not uses it though. The organizations have to encourage the use of such databases. This will not only foster the ongoing efforts to become a learning organization but also have the advantage of potentially reducing the cycle time of projects through best practice sharing and application. Improvements could therefore not only be achieved faster but financial gains locked in earlier. When leveraged within the organization, the benefits could also multiply five to seven times. The idea will be to move people from a departmental thinking in which they are least inclined to share information all the way up to an ideal where knowledge is shared intuitively. It has been discussed in several papers already that e.g. reward systems need to be established to promote the use of such repositories and to facilitate building such co-dependent communities; how to achieve this still needs to be discussed in more detail yet.

References:

1) O'Donnell, D., McGuire, D. and Cross, C. (2006), "Critically challenging some assumptions in HRD", International Journal of Training and Development, Vol. 10 No.1, pp. 4-16.
2) De Koning, H. and De Mast, J. (2005), "Grounding of Six-Sigma's breakthrough cookbook: how to research a methodology?", International Journal of Six-Sigma and Competitive Advantage, Vol.1 No.3.
3) De Mast, J. (2003), "Quality improvement from the viewpoint of statistical method", Quality and Reliability Engineering International, Vol.19 No.4,pp. 255-64.
4) Eckes, G. (2001), The Six-Sigma Revolution – How General Electric and Others Turned Process into Profit, Wiley, New York, NY.
5) Ingle, S. and Roe, W. (2001), "Six sigma black implementation", The TQM Magazine, Vol. 13 No. 4, pp. 273-80.
6) Klefsjo¨, B., Wiklund, H. and Edgeman, R.L. (2001), "Six sigma seen as a methodology for total quality management", Measuring Business Excellence, Vol. 5 No.1, pp. 31-5.
7) Antony, J., Banuelas, R., 2001. A strategy for survival. Manufacturing Engineer 80 (3), 119–121.
8) Anbari, F.T., 2002. Six Sigma Method and Its Applications"San Antonio, Texas. Oct 3–10. Project Management Institute, Newtown Square, PA.
9) Hahn, G.J., Doganaksoy, N. and Hoerl, R.W. (2000), "The evolution of Six-Sigma", Quality Engineering, Vol. 12 No. 3, pp. 317-26.
10) Breyfogle, F.W. (1999), Implementing Six-Sigma – Smarter Solutions Using Statistical Methods, competitive advantage", Journal of Quality Management, Vol. 5, pp. 5-26.
11) Hahn, G.J., Hill, W.J., Hoerl, R.W. and Zinkgraf, S.A. (1999), "The impact of Six-Sigma".
12) Harry, M.J. (1998), "Six-Sigma: a breakthrough strategy for profitability", Quality Progress.
13) Hendricks, C. and Kelbaugh, R. (1998), Implementing Six Sigma at GE, th Journal of Quality and Participation, Vol.21, No.4, pp. 48-53.

14) Harry, M.J. (1997), The Vision of Six-Sigma, 5th ed., Tri Star, Phoenix.
15) Juran, J.M. (1989), Juran on Leadership for Quality: An Executive Handbook, The Free Press, New York, NY.
16) Ishikawa, K. (1985), What is Total Quality Control? The Japanese Way, Prentice-Hall, Englewood Cliffs, NJ.
17) Duncan, A.J. (1986), Quality Control and Industrial Statistics, 5th ed., Irwin, Homewood, IL.