THE SUITABILITY OF LEAN, SIX SIGMA AND LEAN SIX SIGMA FOR SMALL, MEDIUM AND LARGE SCALE FIRMS

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TOPIC OVERVIEW

- Lean, Six sigma and Lean Six sigma are well known quality improvement techniques.
- Six sigma focusses on statistical removal of variation and defects.
- Lean thinking is based upon the reduction of waste.
- Lean six sigma uses a combination of lean thinking and six sigma project methodology.
- This paper will help compare the above three methodologies.
- The paper will also help organizations (divided into small, medium and large on the basis of their scale of operation) determine suitable methodology based on comparison of characteristics.
LITERATURE REVIEW

- Schroeder, Linderman, Liedtke and Choo (2007) have defined and explained the underlying theory of six sigma very effectively.
- Comm and Mathaisel (2000) have tried analyzing lean characteristics in their paper.
- Bendell (2006) has rightly reviewed each of the above strategies of lean and six sigma individually and draws comparison of both the strategies.
- The integration of Lean six sigma has been further studied by Salah, Rahim and Carretero (2010).
- Kokemuller (n.d.) has explained the characteristics of small scale firms in his online article.
- The characteristics of large scale firms have been studied by Mohrman, Tenkasi, Lawler and Ledford (1997).
Based on the above literature review, the paper answers the following questions-

1) What are the most relevant characteristics of six sigma?
2) What are the most relevant characteristics of Lean?
3) What are the most relevant characteristics of Lean six sigma?
4) How is the categorization of each of the small, medium and large scale firms done?
5) Which is the most suitable quality improvement methodology for each firm based on the comparison of characteristics of the quality improvement tools and requirements of the firms?
SIX SIGMA CHARACTERISTICS

- Six sigma stresses the application of statistical and problem solving tools and techniques to achieve high quality results.

- DMAIC (Define, measure, analyze, improve and control) and DMADV (Define, measure, analyze, design and verify).

- The six sigma is the highest sigma level and has the least defects possible, that’s 3.4 defects per million.

- Who implements Six Sigma?

- Are you Ready for six sigma?
LEAN CHARACTERISTICS

➢ Some characteristics of lean are: preserve value with less work, strive to be better, faster and cheaper than the competitors

➢ Lean is used to eliminate waste, variation and work imbalance

➢ “Lean production is able to manufacture a larger variety of products, at lower costs and higher quality, with less of every input, compared to traditional mass production: less human effort, less space, less investment, and less development time” (Dankbaar, 1997)

➢ Continuous Improvement and standardized work procedures
LEAN SIX SIGMA CHARACTERISTICS

- Combined positive effects of applying six sigma and lean together and elimination of shortcomings leads to a successful methodology

- Order of Application of lean and Six Sigma and its significance

- The integrated framework of application of lean and six sigma and benefits to an organization
**SMALL, MEDIUM AND LARGE SCALE FIRMS**

- **Small scale organizations** are labor intensive units and work at creating employment opportunities at lower cost, low capital investments and budgets and usually benefit the economy of a single community or city.

- **Large scale organizations** include all the global firms, big names multinational companies and these companies have huge number of employees with a greater impact on economy.

- **Medium scale organizations** have features lying somewhere in between small and large scale firms and have grown from being a small company but have not yet gained the status of being a large scale firm.
SMALL SCALE ORGANIZATIONS AND SUITABLE QUALITY IMPROVEMENT TECHNIQUE

- Recommendations based on the comparison of characteristics of the quality improvement tool and the type of firm

- Lean methodology has the highest suitability

- **Benefits**: Identify value stream, reduce waste, continuous improvement technique, continuous pursuit of perfection, standardizing work procedures, eliminate the non-value added steps

- It may not be essential to go through the entire DMAIC in the case of small organizations and it may just take up more time and resources for smaller problems
LARGE SCALE ORGANIZATIONS AND SUITABLE QUALITY IMPROVEMENT TECHNIQUE

 Lean Six Sigma has the highest suitability

 Large businesses may produce larger variations in results and at the same time has to eliminate waste and focus on other fruitful tasks rather than wasting time on reworks

 **Benefits:** Curb defects on large scale and eliminate non value added steps for the same, huge production chain needs a combination of measure, higher success rate

 Enough resources present to adopt this methodology
MEDIUM SCALE ORGANIZATIONS AND SUITABLE QUALITY IMPROVEMENT TECHNIQUE

- Six Sigma has the highest suitability

- Systematic application of DMAIC at this stage will help uncover possible problems or hindrances in growth

**Benefits:** Removal of defects and variation beneficial at this stage, one can assume they have applied lean at small scale, process control, cost down, profit up

- The medium funds invested in quality are capable of hiring six sigma teams
CONCLUSION

- No methodology is wrong or right for any firm as each brings with it, its own benefits
- The paper tries comparing the characteristics of these three methodologies with the requirements of the three types of firms and suggests the most suitable methodology for that firm
- The paper does not try to suggest that the other methodologies are unfit for certain firms, instead it tries to suggest the one which will prove most beneficial for the firm
- Thus, the paper concludes that every quality improvement methodology is suitable in its own way, the firms should just try choosing the one which will satisfy their requirements, goals and motives most suitably
REFERENCES


Thank you!!!

Questions???