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INTRODUCTION
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1. The Topic of the PhD Thesis

The topic of the thesis is broadly related to the areas of Production Management, with special focus on Cost Reduction Techniques in order to maintain the ‘competitive edge of superiority’ of a firm in the present ethos of global reforms. It is also closely connected with ‘modern science of intrapreneurship’, in which the companies promote ‘cost cutting’ along with ‘enhancement of quality’ and maintain their market share and leadership not only in conditions of cyclical slowdowns and recessions but also in stable and normal conditions of industrial climate.

It is a common observation that topic of the ‘Production Management’ and that too ‘Cost management’ is very rarely chosen by the students of Advanced Management Research. The areas of Marketing Management, Financial Management, Human Resources Management, Supply Chain Management, Materials Management, Strategic Management and in recent years Retailing Management, Insurance and Risk Management are relatively more favourite to young Management Researchers. Production Management specially requires in depth knowledge and experience of Engineering therefore it can only be opted by those MBA students who have
academic background of Engineering faculty. Since this topic has remained much unexplored, I am strongly motivated to choose the same and endeavor to produce some original research work; which not only, will enrich this area of management but will also become immensely useful to those corporate managers who face the crisis of losing the market to their competitors and close the production wing, which makes huge losses during recession.

Just recently, because of Crash of Lehman Brothers and other Financial corporations due to lending against ‘sub-prime mortgages’ and recession in Automobile Industry, all over the world; many units had to shut down their production operations and were compelled to give lay-off to huge number of their employees.

The deep study of Business Cycles reveals that ‘Recessions’ are not only recurrent but their frequency has increased in post 1980s. The modern manager therefore has a much more difficult challenge to cope up with the crisis of slowdowns and recessions’ by grasping the advanced techniques of ‘cost cutting’ and retaining the market share, by enhancement of quality and efficiency by the application of ‘Six Sigma’ and similar techniques. The research done in this field will thus be useful to enrich Management Theory and to improve the Management Practices, too.
2. **The Title of the PhD Thesis**

The approved title of this thesis is viz. “A Comparative Case study of the role of automation and optimization by the use of Six Sigma and other ‘Cost reduction’ management techniques.” [Case studies of some selected companies in and around Pune.]

3. **The Scope and Coverage of the Research Study**

The scope and coverage of this study broadly consists of following aspects.


b) The role of innovations in improving the technology, productivity, quality and reduction of the cost and price and still improving the market share and profitability of a firm.

c) The role of cost minimization and cost effectiveness- The effects of rationalization- The pricing policies under different conditions of market.

d) The importance of the concept of ‘Optimization’.

e) Survival and Sustainance of efficiency in the keen and ruthless competition caused in recent years after the entire world has adopted economic reforms of privatization, liberalization and globalization. The countries, continents and regions cannot afford to have ‘closed economies’ due to the new regime of WTO.
f) The vital role of ‘Cost reduction’ during Recession.

g) Factual cases studies of some selected companies in Pune and around Pune, which have successfully and efficiently managed their costs and improved their market shares; with detailed ‘Break-up’ of their Cost-cutting item by item, or operation by operation.

4. **Objectives of the Study**

1) To identify and understand, the ‘Creative’ and ‘innovative role’ by which ‘Cost-consciousness’ is developed and correct diagnosis of the wrongs and weaknesses of the prevalent system of production which causes huge and exorbitant amounts of wasteful expenditure, can properly be adjusted by the persons who try to do the ‘cost-cutting’.

2) It is further interesting to note; how appropriate solutions to sort out the problems of wasteful expenditure; bring drastically down the routine amounts of spendings’ which for a long time were not noticed and continued in the system, as if taken for granted.

3) To examine the importance of continuous quality enhancement, at the lowest possible cost by means of automation and eliminating fabulous amounts of Labor-Payrolls.
4) To find out ways and means for making the most optimum use of plant, machinery, resources, labour and materials and getting maximum utilization of their capacity.

5) To cut down huge expenses and time consuming practices caused by conventional manual operations involved in secretarial and administrative practices, by introducing use of ‘smart cards’ and ‘paperless office’.

6) To establish the automatic control on the actual working of the personnel and obtain maximum productivity from them.

7) To find out ways and means of saving energy, fuel, natural resources, as well as, finance, time, space, Capital and labour.

8) To prove the vital role of ‘Cost cutting’ for very survival during recessionary conditions and for sustaining the efficiency in retailing the largest share in the market.

9) To investigate the evidence and concrete proof of the results obtained by ‘Cost cutting’ by not only global Businesses but by the companies in and around Pune; in which, I had the opportunity to be the member of a team assigned to do the actual cost cutting and expand Our clientele and business.

10) On the basis of this empirical evidence, to prove the validity of the hypothesis of this research study.
11) Lastly to judicially separate the ‘qualitative profit’ from the normal ‘quantitative profit’. Normally, any firm having assured market; can expand its sales (without doing minute and intensive cost cutting) at the prevailing market price; which is a case of a quantitative profit. But when overall market demand reduces, and the firms conduct neck to neck competition by price cuts and cost cuts; and thereby earn profit, that is a case of ‘qualitative profit’. It is no doubt easier to earn quantitative profit in any seller’s market but it is very difficult to retain market share and profits during the conditions of recession in which ‘Cost cutting’ occupies place of prestige.

12) To highlight the role of a modern manager, who can accept the challenge of sustaining the leading position of his firm during the common crisis of recession, thus partly it is a study of crisis management, too.

5. The Sources of the Data

There are a large number of text books and advanced theoretical literature published by well known management Gurus, all over the world. E.g.

1. Allan DeMacro-Principles and practices of integrated cost reduction.
2. Dunning- “Alliance capitalism”
3. Joel Dean (Managerial Economics)
4. Alfred Chandler- “Dynamics of Industrial Capitalism”
5. Salvator- “Microeconomics”
7. Lerter Thurow- Theory of Profits- The Future of capitalism
8. Peter Drucker- “Management by Results” etc. etc.

There are Seminar papers, Conference Research papers published by International Economic Association etc.


Thus vast and authentic secondary data is available. In recent years, internet access also has become a time saving source of classified data. Especially the topic of ‘Cost reduction’ has evoked a lot of attention and interest among the worldwide leading management faculty and business experts because of the radical changes in the global market, from protected and closed ones to free and open markets, vulnerable to the recurrent crises of slowdowns and recessions because of the growing pressure of stiff competition!

[N.B-Please refer bibliography which is included in the Appendix A]

6. Methodology of the Study

This research study will collect the theoretical contributions; as well as, the authentic secondary data concerning the results of the actual cases of ‘Cost cutting’ of Global Giant Businesses like General
Motors, General Electric, IBM, Microsoft, Ford, Chrysler, Toyota, Nissan, Honda, Krupp, Mercedes, Xerox, Coca-cola, McDowell, Dominos, McDonald, Canon, Dell, Axlerod, Kodak, Intel, AT&T, American Airline, De Beers Diamond and Walmart etc. This data consists of facts and figures which are authenticated by the prestigious Global Business Journals.

In addition, the author of this study had a good fortune and privilege to be associated with the task of ‘Cost cutting’ which was assigned to him, as a member of the expert team in initial stage and later on as chief leader of the team by well known International and National companies like Honeywell U.S., Tata Honeywell, Compulink etc. He has successfully been instrumental in maximum cost reduction and promoting the growth of the turnover and profits of the companies which he served. He collected primary data with essential statistics and technical details from following case studies; which were made available to him by his clients.

He has furnished the authentic primary data of following case studies.

1) World’s cheapest car-Nano.


3) Cost cutting by introducing the use of smart cards in H.R. Department of TCS, Hyderabad.
4) Cost cutting by replacing manual security system by introducing electronic security system at Bombay House, Mumbai.

5) Cost cutting of H.R. Department of ONGC.

6) Huge Cost cutting in IT firms like Wipro, Infosys etc.

7) Cost Reduction Automatic Devices of PLC and DCS given to HPCL.

8) Diagnostic Software produced by Eco-axis for getting ‘Boiler Health Intelligence’; from minute to minute.

9) Energy Cost Saving by automation in the Building of Taj Hotel, Mumbai, Apollo Hospital, Mumbai, TCE Mumbai.

10) Minimizing Errors and Cost Savings done by application of Six Sigma method given to Tata Honeywell Building controls Division.

11) Capturing the market of HVAC (Heating, Ventilation and Air conditioning of huge buildings) by the lowest bid of the price made by Tata Honeywell and obtaining Number 1 Position in the global market.

N.B. [For all these achievements, Six Sigma Leader of Asia Pacific, as well as, Tata Honeywell company have given him the honor of ‘Green Belt holder’, The highest level of Award “Chairman’s Club Award” and official letters of appreciation.]

The recorded data of these case studies will furnish the quantitative and qualitative evidence of its authenticity as such, any finding derived from both the secondary and primary data; can be,
without a tinge of doubt, acceptable and true. The entire research is based on the analysis and processing of the secondary and primary data.

7. **The Hypothesis reads as follows:**

“The role of Cost Reduction and Quality Enhancement techniques, has proven their importance for maintaining the competitive edge in the present globalised Business Environment in general, and its vitally indispensable in the conditions of cyclical slowdowns and recessions, in particular.”

The hypothesis will be tested, verified, proved and confirmed word by word (in the letter and spirit) by the analysis of the secondary and primary data.

8. **The Reason to choose this topic**

In the present ethos of globalized competitive market, a global slowdown can erupt any time, anywhere but it will take toll of a number of businesses all over the world like a wild fire. Indian firms should note this ‘alarming call’ and have to be alert and safeguarded for deploying five key levers, proactively to ride the impending storm namely

a) Revenue and Margin enhancement  
b) Cost reduction and performance improvement  
c) Reassessing planned capital expenditure
d) Seeking new opportunities and 
e) improving employee performance management.

This will enable firms to successfully navigate tumultuous times and position themselves for future growth. Needless to state the extraordinary importance of this subject in current Management Research.

My Guide, after going through my bio-data, measured my potential capacity to undertake this specialized study, because of my B.E. Degree in Industrial electronics, Master’s degree in Finance, 27 years of industrial experience, 3 years experience in industrial electronics, 12 years experience in Industrial Automation, 6 years experience in Building Automation, 6 Years experience in Information Technology and my achievements such as Green Card in Six Sigma Technique and letters of Appreciation of my employers. He also gave due weightage to my teaching experience of five years in prestigious Management Institutes of Pune. In fact, I have not chosen this topic of research by myself; My Guide has used his intuitive discretion for motivating me strongly to offer this subject for my Ph.D. Thesis.

9. Research Design and Plan of Chapters

The entire thesis consists of Three Parts. Part 1 deals with the review of secondary literature which provides the highlights of the theoretical background concerning the importance of cost-analysis, along with aspects of Theory of Profit. The optimum output which minimizes the cost and maximizes revenue, hence profit; the role of
innovation, rationalization etc. and the special need of cost management during economic slowdowns and recession. Thus it combines the theory of Microeconomics and Management Science.

Part 2, covers about two dozen factual case studies of World’s most renowned corporations highlighting positions by sorting out their problems posed by their competent competitors. This part thus furnishes entire secondary data; which is essential for proving the validity of the main hypothesis of this study.

Part 3, provides detailed case studies of eleven renowned corporations which are located in and around Pune; the authentic material of the Primary data along with statistics and analytical break up of the entire exercise of the cost cutting; has been provided by the courtesy of the concerned companies. This data also is very useful for making key findings and conclusions of this thesis.
In all, there are 5 chapters which are as follows:

1) Chapter 1- Introduction

2) Chapter 2- Theoretical framework of Cost-Analysis (Based on review of Secondary data)

3) Chapter 3- Review of factual cases of cost-cutting done by successful global businesses (Based on Secondary data)

4) Chapter 4- Case studies of 11 companies and the positive results of their ‘cost-cutting’ (Based on Primary data)

5) Chapter 5- Main findings and Conclusion.