

Flexibility in Quality and Productivity Strategy for Corporate Success - A Study in Indian Context

by

Neeraj

Department of Management Studies

Submitted

**in fulfillment of the requirements of the degree of
Doctor of Philosophy**

to the



Indian Institute of Technology, Delhi

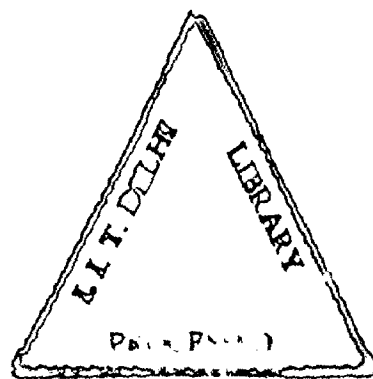
Hauz Khas, New Delhi - 110 016

INDIA

November, 1997

TH
658.562
NEE-F

LIBRARY
DELHI.
TH-2635



CERTIFICATE

The thesis entitled **Flexibility in Quality and Productivity Strategy for Corporate Success- A Study in Indian Context**, being submitted by Mr. Neeraj to the Indian Institute of Technology, Delhi, for the award of the degree of Doctor of Philosophy (Ph.D.) is a record of bonafide research work carried out by him. He has worked under my guidance and supervision, and has fulfilled the requirements for the submission of this thesis which has attained the standard required for a Ph.D. degree of the Institute. The results presented in this thesis have not been submitted elsewhere for the award of any degree or diploma.

Date



(Dr. Sushil)

*Modi Foundation Chair Professor
of Strategic Management and Head
Department of Management Studies
Indian Institute of Technology, Delhi,
Hauz Khas, New Delhi - 110 016.*

ACKNOWLEDGEMENTS

It is my proud privilege to have worked with Dr. Sushil, Modi Foundation Chair Professor of Strategic Management and Head, Department of Management Studies, a pioneer in the area of Flexible Systems Methodology, my mentor. I am deeply indebted to him for his initiation, constructive criticism and debonair discussion. His supervisory efforts and affectionate guidance have always served as a beacon light in my progress.

Under the expert eyes of the members of my Student Research Committee (SRC), Er A.D. Gupta, Department of Mechanical Engineering, and Dr. Kanika T. Bhal, Department of Management Studies, my endeavour has been rendered into the present form. I am deeply obliged to them for their constructive criticism. Offstage inspirations by all the members of the Department of Management Studies- Prof. Vinayshil Gautam, Prof. P.K. Jain, Prof. D.K. Banwet, Dr. S.K. Jain, Dr. (Mrs) S. Karunes, Er. Chaudhry, and Dr. Shivraj Kanungo are gratefully acknowledged. I also take this opportunity to express my feelings of gratitude to all my teachers, past and present.

I am grateful to all those executives who spared their valuable time in providing the data and granting time for interviews. Without their support the present study would not have been completed.

Words fail me at this juncture while expressing my profound sense of reverence and affection to my parents, my brother and sister, and to Bobby, without whose inspiration and constant encouragement this work could not have seen the light of the day. I am also grateful to Dr. B.S. Nagi, Council for Social Development, New Delhi, for helping me in data analysis, interpretation and their moral support when it was required the most.

No words of thanks would be adequate to express my gratitude to Dr. P.V. Krishnan, Department of Applied Mechanics, IIT Delhi, and Mrs Krishnan for their unbounded

love and care showered upon me and keeping my spirits high throughout my stay at IIT.

My friends and well wishers - a big chain of names who kept me floating, deserve a special mention. Silent prayers of gratitude can only offset the emotions from the heart. Nostalgic memories of them will haunt me for their making my stay at IIT a beautiful experience.

A good get up lends grace to an otherwise homely piece of work done, for this I am grateful to my friend, Sanjay Sinha not only for helping me preparing the final report but also for his moral support during the last tensed phase of thesis preparation. I am equally grateful to Romshi Sinha, for her patient support with doubts on her illusion that Sanjay will be home early, once this thesis is submitted.

Last but not the least I am grateful to all those who directly or indirectly contributed to the completion of the study.

Date : 19/7/99


(NEERAJ)

ABSTRACT

The study aims at understanding the nature of strategy for quality and productivity. It also attempts to develop and test a framework under which a flexible strategy for quality and productivity may be developed. It addresses questions like, What ?, Why ?, and How ? about a flexible strategy formulation? It also addresses how a quality and productivity strategy may be formulated.

Reasonably intensive review of literature has been done. It has been organised under the four heads namely, corporate strategy, flexibility, quality and productivity. Review of literature helped in identifying the issues. Some of the issues identified are quality and productivity strategy as a core management function, integration of quality and productivity strategy with corporate business strategy, comprehensive and explicit framework for developing a quality and productivity strategy, and a conceptual model for flexibility in strategy. The literature further helped identifying other issues like people's involvement, training, role of top management, organisational culture, structure, quality consciousness in the organisation, technology upgradation, maturity in technology absorption, customer orientation, customer satisfaction/delight, perception of role of vendor/supplier in the organisation, organisation's capacity to undergo change or withstand the pressure of changing times, short and long term goals, and so on.

The specific objective of the study is to develop a theoretical foundation in the area of flexibility in strategy. It attempts to develop a comprehensive model of flexibility in corporate strategy and also of flexibility in quality and productivity strategy. It further tries to develop and test comprehensive framework for developing strategy for quality and productivity.

The principles of flexible systems methodology have been used for designing the way to carry out the study. The entire study is divided into three different parts which are called as pilot study, macro study, and micro study. The pilot study basically is an exploratory study, which has been carried out to answer "why" part of the study. The Macro study tries to answer "what" part of the study. The micro study tries to answer "how" part of the study. The different steps of the methodology like problem conceptualisation, identification of techniques, fuzzy clustering, matching the attributes, selection of research methods, and finally integration and innovation have been followed.

Flexibility in strategy has been conceptualised under four phases, namely, strategic learning (and unlearning), strategic intent, strategy evolution, and strategic resonance. For quality and productivity strategy, these four phases (learning, intent, evolution, and resonance) have been addressed specifically. They operate at two different levels (Corporate strategy and functional

strategy) and are therefore, conceptualised under the same four phases, these are expected to be aligned to each other.

The study begins with a survey which attempts to identify the existing quality and productivity strategy. The findings of the pilot study are that sufficient evidences are not available to conclude that a explicitly defined quality and productivity strategy exists. In the name of quality and productivity strategy everything is left to Total Quality Management (TQM). TQM itself has been understood as an end (measure of corporate success) rather than a means (functional strategy) to achieve the ends.

It also concludes that flexibility in TQM makes it more effective. Rigid implementation makes it only a ritual.

The First half of the macro study analyses twenty mission/vision statements of different organisations. Further, thirty two quality policies, six internationally accepted quality awards, namely The Balridge Award Model, The European Quality Award Model, The Juran Model, Anderson Consulting Model, McKinsey TQM Model, CII Exim Business Excellence Award, and statements of six quality gurus namely three American Quality Gurus- Deming, Juran, Crosby and three Japanese Quality Gurus, Ishikawa, Taguchi, Shingo have been analysed to propose a framework for quality and productivity strategy. It has been developed under six heads namely people, culture, structure, technology, customer orientation (quality goal), and system capabilities (productivity goal). Empirical testing of the conceptual model of the study has been done through a questionnaire filled through interviews and workshops. A total of 228 senior executives participated in interviews and workshops covering 64 organisations. Through the questionnaire quality and productivity strategy and flexibility in strategy were examined. Rate of returns (on Total assets, Capital employed, and Shareholder's fund) of fifty nine organisations were computed. It was found that in quality and productivity strategy- people factor came out to be the most important factor. The factor openness in flexibility in strategy came out to be the most important factor. Flexibility in strategy has been found to be contributing to rate of returns on capital employed and shareholder's fund significantly.

The micro study has been conducted based on the data provided by Modi Xerox Limited, (MXL). In the study the already existing business strategy of MXL is examined on flexibility front. Further the various quality and productivity issues addressed are also examined in view of the proposed framework.

The study is likely to be found useful by the managers/corporate planners/consultants in the area of strategic management. Those involved with quality management area like TQM may also derive benefit out of this study. Besides them the study paves the way for academicians and researchers working in the area of flexible strategy for quality and productivity.

TABLE OF CONTENTS

Abstract	iii
List of figures	xii
List of tables	xiii
List of appendices	xvi
Abbreviations	xvii

Chapter 1

1.1	Need and Importance of Quality and Productivity	2
1.2	General Scenario of Quality and Productivity	3
1.3	Importance of Flexibility in Quality and Productivity Strategy	6
1.4	Objectives of the Study	9
1.5	Issues Covered	9
1.6	Scope of the Study	11
1.7	Methodology of the Study	11
1.8	Organisation of the Thesis	13
1.9	Concluding Remarks	16

Chapter 2

REVIEW OF RELATED LITERATURE

2.1	INTRODUCTION	19
2.2	BASIS OF THE PRESENT REVIEW	19
2.3	CORPORATE STRATEGY	20
	2.3.1 Definition and Nature	20
	2.3.2 Contingency Perspectives	22
	2.3.3 Strategic Planning	23
	2.3.4 Strategy and Environment	24
	2.3.5 Strategy, Structure and Performance	24
	2.3.6 Strategic Change	25
	2.3.7 Strategic Decision Making	26
	2.3.8 Framework for Strategy Making	28
	2.3.9 Chief Executive Officer's (CEO) Beliefs	32
2.4	FLEXIBILITY IN MANAGEMENT	38
	2.4.1 Definition	38
	2.4.2 Connotations of Flexibility	40
	2.4.3 Flexibility in Strategy	41
	2.4.4 Organisational Flexibility	43

2.5	QUALITY	48
	2.5.1	Classical Definitions of Quality
	2.5.2	Quality and Strategy
	2.5.3	Total Quality Management
2.6	PRODUCTIVITY	60
	2.6.1	Definition
	2.6.2	Productivity as Strategy
	2.6.3	Productivity : Some Issues
2.7	CURRENT STATE OF RESEARCH	68
	2.7.1	Corporate Strategy
	2.7.2	Flexibility
	2.7.3	Quality
	2.7.4	Productivity
2.8	LIMITATIONS OF EXISTING APPROACHES AND FURTHER DIRECTIONS	71
2.9	SYNTHESIS IN CONTEXT OF RESEARCH QUESTIONS	73
2.10	CONCLUDING REMARKS	73

3.2	INTRODUCTION TO RESEARCH DESIGN	76
3.3	LIMITATIONS OF EXISTING RESEARCH PROCESS AND DESIGN	78
3.4	FLEXIBLE RESEARCH DESIGN	79
3.5	PROBLEM CONCEPTUALISATION FOR THE PRESENT STUDY	80
	3.5.1	Mapping the Problem
	3.5.2	Conceptual Model of The Study
	3.5.3	Research Propositions
3.6	FUZZY CLUSTERING	93
3.7	MATCHING THE ATTRIBUTES WITH THE TECHNIQUES	95
3.8	SELECTION	98
3.9	INTEGRATION AND INNOVATION	99
3.10	IMPLEMENTATION	102
	3.10.1	Implementation of Pilot Study
	3.10.2	Implementation of Macro Study
	3.10.3	Implementation of Micro Study
3.11	CONCLUDING REMARKS	103

Chapter 4		
4.1		
4.2	OBJECTIVES OF THE PILOT STUDY	106
4.3	STUDY DESIGN FOR PILOT STUDY	106
	4.3.1 Introduction	106
	4.3.2 Problem conceptualisation	107
	4.3.3 Identification of techniques and fuzzy clustering	107
	4.3.4 Matching the attributes	109
	4.3.5 Selection of research methods	109
	4.3.6 Implementation	110
4.4	EXISTENCE AND AWARENESS OF CORPORATE STRATEGY FOR QUALITY AND PRODUCTIVITY	112
	4.4.1 Observations	113
	4.4.2 Discussion	115
	4.4.3 Interpretation	117
4.5	EXAMINING TOTAL QUALITY MANAGEMENT (TQM) ON FLEXIBILITY FRONT	118
	4.5.1 Concept of total quality management	118
	4.5.2 Analysis and interpretation	124
4.6	FLEXIBILITY IN TOTAL QUALITY LEADERSHIP	137
	4.6.1 Concept	137
	4.6.2 Effectiveness of TQL	138
	4.6.3 Flexibility in TQL	139
4.7	CONCEPT OF FLEXI TIME IN MARUTI UDYOG LIMITED	140
4.8	CONCLUDING REMARKS	140

5		
	INTRODUCTION	144
5.2	INTRODUCTION TO FLEXIBLE STRATEGY	144
5.3	METHODOLOGY FOR EVOLVING THE FRAMEWORK	149
5.4	FRAMEWORK FOR FLEXIBLE CORPORATE STRATEGY	150
	5.4.1 Strategic learning (and unlearning)	150
	5.4.2 Strategic intent	155
	5.4.3 Strategic evolution	157
	5.4.4 Strategic resonance	160

5.5	ADVANTAGES AND PITFALLS OF FLEXIBLE STRATEGY		163
	5.5.1	Advantages of Flexible Strategy	163
	5.5.2	Pitfalls of Flexible Strategy	164
5.6	FRAMEWORK FOR FLEXIBLE QUALITY AND PRODUCTIVITY STRATEGY		164
	5.6.1	Strategic learning (and unlearning) for Quality and Productivity	169
	5.6.2	Strategic intent for Quality and Productivity	172
	5.6.3	Strategic evolution for Quality and Productivity	175
	5.6.4	Strategic resonance for Quality and Productivity (Internal and External)	177
5.7	FLEXIBILITY IN STRATEGY		181
	5.7.1	Openness	182
	5.7.2	Focus	183
	5.7.3	Adaptiveness	183
	5.7.4	Resilience	184
5.8	CONCLUDING REMARKS		185

Chapter 6

6.1	INTRODUCTION		187
6.2	IMPORTANCE OF MISSION AND VISION STATEMENTS		188
6.3	COLLECTION OF MISSION AND VISION STATEMENTS OF TWENTY COMPANIES		189
6.4	ANALYSIS OF MISSION AND VISION STATEMENTS		193
6.5	DISCUSSION AND INTERPRETATION		199
6.6	LEARNING ISSUES		203
6.7	QUALITY AND PRODUCTIVITY STRATEGY: EVOLVING A CONCEPTUAL FRAMEWORK		204
	6.7.1	Options Field Methodology (OFM)	205
	6.7.2	Six Quality Awards	206
	6.7.3	Consolidated statements of six Quality Gurus	210
	6.7.4	Analysis of Thirty Two Quality Policies	213
6.8	PROPOSED FRAMEWORK OF QUALITY AND PRODUCTIVITY STRATEGY		227
6.9	CONCLUDING REMARKS		235

Chapter 7

7.1	INTRODUCTION		238
-----	--------------	--	-----

7.2	DEVELOPMENT OF VALIDATED INSTRUMENT		238
	7.2.1	Development of questionnaire	238
	7.2.2	Questionnaire validation	239
	7.2.3	Pretesting of the questionnaire	242
	7.2.4	Description of the final questionnaire	243
7.3	METHODOLOGY FOR ANALYSIS		244
7.4	MEASURE OF CORPORATE SUCCESS		245
7.5	PROFILE OF THE EXECUTIVES		249
7.6	FACTOR ANALYSIS		250
	7.6.1	Confirmatory factor analysis for quality and productivity strategy	250
	7.6.2	Confirmatory factor analysis for flexibility in strategy	255
	7.6.3	Limitations	257
7.7	CORPORATE OBJECTIVES		258
7.8	PRIORITISATION OF OBJECTIVES		259
	7.8.1	Business Success	259
	7.8.2	Corporate Image	260
7.9	ORGANISATION'S STYLE OF FUNCTIONING FOR IMPLEMENTATION OF ACTION PLAN		262
7.10	BASIS OF CHANGE MAKING PROCESS IN THE ORGANISATION		263
7.11	CLARITY OF INTENT		264
7.12	PRIORITISATION OF ORGANISATIONAL GOALS		265
7.13	ORGANISATION'S STRUCTURE		266
7.14	PRIORITISATION OF THE PRODUCTIVITY FACTORS		267
7.15	FREQUENCY OF CHANGE IN ORGANISATIONAL OBJECTIVES AND REASONS FOR SUCH CHANGES		269
7.16	DISCUSSION		271
7.17	CONCLUDING REMARKS		273

Chapter 8		
8.1	INTRODUCTION	275
8.2	CORRELATION BETWEEN FACTORS OF FLEXIBILITY IN STRATEGY	276
8.3	CORRELATION BETWEEN QUALITY AND PRODUCTIVITY STRATEGY VARIABLES	278
8.4	CORRELATION BETWEEN QUALITY AND PRODUCTIVITY IN STRATEGY VARIABLES WITH FLEXIBILITY IN STRATEGY VARIABLES	280
8.5	CORRELATION BETWEEN QUALITY AND PRODUCTIVITY STRATEGY AND FLEXIBILITY IN STRATEGY WITH VARIABLES OF FLEXIBILITY IN STRATEGY	283

8.6	CORRELATION BETWEEN QUALITY AND PRODUCTIVITY STRATEGY AND FLEXIBILITY IN STRATEGY WITH THE VARIABLES OF QUALITY AND PRODUCTIVITY STRATEGY	285
8.7	CORRELATION BETWEEN FLEXIBILITY IN STRATEGY AND ITS CONSTITUENTS WITH RATE OF RETURNS ON CAPITAL EMPLOYED	287
8.8	CORRELATION BETWEEN QUALITY AND PRODUCTIVITY STRATEGY AND ITS CONSTITUENT VARIABLES WITH RATE OF RETURN ON CAPITAL EMPLOYED	289
8.9	DETERMINANTS OF RATE OF RETURNS ON CAPITAL EMPLOYED	291
8.10	CONCLUDING REMARKS	294

Chapter 9

■	INTRODUCTION	296
9.2	ABOUT THE COMPANY	296
9.3	THE XEROX MANAGEMENT MODEL- UPDATED (XMM)	301
9.4	EXAMINING FLEXIBILITY IN MODI XEROX'S STRATEGY	303
	9.4.1 Openness	303
	9.4.2 Focus	308
	9.4.3 Adaptiveness	309
	9.4.4 Resilience	310
9.5	EXAMINING QUALITY AND PRODUCTIVITY IN MODI XEROX'S STRATEGY	312
	9.5.1 People	312
	9.5.2 Culture	313
	9.5.3 Structure	315
	9.5.4 Technology	315
	9.5.5 Customer orientation	316
	9.5.6 System capabilities	317
9.6	HOW MXL ADDRESSES TO PHASES OF FLEXIBILITY IN QUALITY AND PRODUCTIVITY STRATEGY	319
	9.6.1 Strategic learning (and unlearning)	320
	9.6.2 Strategic intent	322
	9.6.3 Strategy evolution	322
	9.6.4 Strategic resonance	323
9.7	CONCLUDING REMARKS	324

Chapter 10

10.1	INTRODUCTION	326
10.2	SUMMARY OF THE LEARNING	326
10.3	MAJOR RECOMMENDATIONS	328

10.4	SIGNIFICANT RESEARCH CONTRIBUTIONS		329
	10.4.1	At Conceptual Level	329
	10.4.2	At Empirical Level	330
	10.4.3	At Methodical Level	330
10.5	LIMITATIONS OF THE PRESENT RESEARCH		330
10.6	SUGGESTIONS FOR FURTHER RESEARCH		331
10.7	CONCLUDING REMARKS		332
References			333
Appendices			
Curriculum vitae			