

**IMPLEMENTATION OF QUALITY MANAGEMENT
TECHNIQUES IN A SERVICE ORGANIZATION**

GEORGIU GEORGIOS

HTI DIPLOMA PROJECT

M/1000

JUNE 2005

HIGHER TECHNICAL INSTITUTE	PROJECT NO 3557
----------------------------------	--------------------

**IMPLEMENTATION OF QUALITY MANAGEMENT TECHNIQUES
IN A SERVICE ORGANIZATION**

BY
GEORGIU GEORGIOS

Project report submitted to the
Department of Mechanical Engineering
Of the
Higher Technical Institute

In partial fulfillment of the requirements for the diploma of

TECHNICIAN ENGINEER

In
MECHANICAL ENGINEERING

M/1000

JUNE 2005

HIGHER TECHNICAL INSTITUTE	PROJECT NO

ABSTRACT

The object of this project is to study and implement Quality Management Techniques in a service organization.

The vehicle cause for investigation was Statistical Process Control (SPC) which was implemented with the aim to assist in the finding of problems that the hotel maintenance department may be facing in the energy consumption field for the past four years and consequently to achieve “product” quality improvement by introducing corrective actions.

For this, the data and measurements taken through the last four years were investigated and statistically analyzed using the SPC Excel software in order to identify process stability and capability using the quality tools.

There have been examined various sample size metrics and indicators mainly from engineering department and their fluctuations which has shown with the pass of the years.

The great majority of SPC tools and techniques were used like brainstorming, cause and effect diagrams, histograms, team problem solving techniques and great extend of control charts. Also, the charts, which show these variations and specific cause, are included for understanding of the problem from the readers.

Analysis of the control charts has been done and the results show the problems that the hotel and the engineering department faces.

Suggestions for improvement of the system have been quoted.

DEDICATION

To my parents for their support

And guidance all these years
My brother and sisters for helping me for the completion of this project.

CONTENTS LIST

ABSTRACT	ii
DEDICATION	iii
CONTENTS	iv
ACKNOWLEDGEMENTS	vii
<u>CHAPTER 1-INTRODUCTION TO THE PROJECT</u>	1
1.1 SCOPE OF THE PROJECT	1
1.2 METHODOLOGY CARRIED OUT	2
1.3 PRESENTATION OF THE CHAPTERS	3
<u>CHAPTER 2-INTRODUCTION TO QUALITY</u>	4
2.1 HISTORICAL OVERVIEW	4
2.2 WHAT IS QUALITY?	6
2.3 TOTAL QUALITY MANAGEMENT	7
2.3.1 The key principles of TQM	8
2.3.2 Five main advantages of TQM	9
2.3.3 Steps in managing the transition	11
2.3.4 Continuous Improvement	
2.4 INTERNATIONAL QUALITY STANDARDS	11
2.4.1 HACCP STANDARDS	15
2.4.2 Benefits of HACCP	16
2.4.3 7 Basic Principles	16
2.4 TQM IN SERVICES	17
2.5 CONCLUSION	18
<u>CHAPTER 3- STATISTICAL PROCESS CONTROL</u>	19
3.1 WHAT IS S.P.C?	19
3.2 PROCESSES AND PROCESS VARIABILITY	21
3.3 THE BASIC TOOLS OF S.P.C	22

3.4 CONTROL CHARTS	27
3.4.1 Types of control charts	30
3.4.2 Applications of control charts	30
<u>CHAPTER 4 - INTRODUCTION TO THE KANIKA COMPANY AND ALEXANDER THE GREAT BEACH HOTEL</u>	31
4.1 GROUP HISTORY	31
4.1.2 KANIKA CHAIRMAN MESSAGE	33
<u>CHAPTER 5- METHODOLOGY ADOPTED</u>	37
5.1 PROVISIONS TAKEN FOR THE COMPLETION OF THE PROJECT	37
5.2 SPC EXCEL SOFTWARE	38
5.2.1 Key Benefits	39
5.2.1 Familiarization with the program	39
<u>CHAPTER 6- IMPLEMENTATION OF STATISTICAL PROCESS CONTROL TECHNIQUES IN ALEXANDER THE GREAT BEACH HOTEL</u>	43
6.1 FAMILIARIZATION WITH CONTROL CHART PRESENTATION	43
6.2 DISCUSSION OF HOTEL OCCUPANCY RESULTS	44
6.3 ELECTRICITY CONSUMPTION RESULTS	46
6.3.1 Electricity Cost per Client Results	47
6.4 WATER CONSUMPTION RESULTS	48
6.4.1 WATER COST PER CLIENT PER DAY RESULTS	49
6.5 FUEL-OIL CONSUMPTION RESULTS	50
6.5.1 Fuel-Oil Cost	50
<u>CHAPTER 7 - OVERALL CONCLUSIONS</u>	51
7.1 FINAL FINDINGS OF THE PROJECT	51
7.2 BENEFITS TO THE ALEXANDER THE GREAT BEACH HOTEL BY THE SPC IMPLEMENTATION	52
7.3 BENEFITS TO THE AUTHOR	53
<u>FOOTNOTES AND REFERENCES</u>	54

ACKNOWLEDGEMENTS

I would like to express my sincere appreciation and to thank my project supervisor and advisor Dr. Ioannis I. Angelis, lecturer of the Higher Technical Institute for his help, guidance, advising and support during the development of this project.

I also would like to thank the hotel's Chief Engineer Mr. Stavros Panagiotou as well as the hotel's management and especially Mr. Onoufrios Onoufriou for accepting me to the company willing to help me in whatever my needs were.