# IMPLEMENTING LEAN MANUFACTURING IN FLEXTRONICS BRAZIL, SOROCABA USING CONSULTANTS

# BY VIJAYAKUMAR MUTHIYAH

Project Paper Submitted to the College of Business, Universiti Utara Malaysia, in Fulfillment of the Requirement for the Degree of Master of Science (Management)

June 2011

### PERMISSION TO USE

This Project Paper is presented in partial requirements for a post graduate degree from the Universiti Utara Malaysia, and I would willingly allow for the Universiti Library to inspect freely its contents. I also agree that permission for copying this Project Paper in any manner, either in whole or in part, for scholarly purposes maybe granted by my supervisor(s) or, in their absence, by the Dean of College of Business. It is also hereby understood that any copying or publication or use of this Project Paper or parts thereof for financial gain shall not be allowed without my due permission. It is also strongly insisted that due recognition shall be given to me and to the Universiti Utara Malaysia for any scholarly use which may be made of any material from this Project Paper.

Any requisition or permission to copy or to take other use of materials in this paper, in whole or in part, should be strictly addressed to:

Assistant Vice Chancellor College of Business Universiti Utara Malaysia Sintok, Kedah

### **ABSTRACT**

Today, numerous companies have a major opportunity to reduce their costs and customer lead time and cycle time through the application of Lean Manufacturing processes. Its roots lie in the manufacturing industry and are strongly influenced by the production system principles originally developed by the lead automotive company called Toyota in Japan. These Lean Manufacturing technologies have been widely utilized and applied by numerous manufacturing companies worldwide. However, not many organizations talk about how the Lean Manufacturing process has a large and long lasting impact on their performance and profits.

This research paper focused on behaviours that organizations must exhibit to correctly implement and sustain lean manufacturing practices. The purpose of this case study was to determine how the consultants are implementing the Lean Manufacturing process based on the company, Flextronics which was located in Sorocaba Brazil.

This paper also focused on how the business consultants execute organizational change such as "Lean Manufacturing Implementation Process" in the real business world from a corporate training standpoint. Lean Manufacturing fundamentally seeks to remove non-value-added processes from production in order to improve efficiency.

Upon completion of this case study, the researcher will be able to define how the manufacturing industry can learn more about the Lean Manufacturing process and not be concerned with the size of a company.

**ACKNOWLEDGEMENT** 

First and foremost I would to thank Professor Dr. Ajay Chauhan whose guidance has allowed

me to successfully complete this research and the report.

I would like also to thank the Flextronics Brazil management who allowed me to conduct the

survey especially to the Human Resources Manager, Cacilda Ribeiro and the Business

Excellence Director, Daiane Vieira

I would like also to thank my superior, Mr.Riwayat Mansor, the Senior Global Quality

Director who has rendered her support to realise this survey and the permission to use the

company resources for this survey purposes.

I also treasure the moment of sharing and learning process with all my course mates in UUM

KL City Campus during the process of achieving our Masters Degree since early 2010.

I am also grateful to all my family members especially my family, for their understanding,

trust and endless support to me in my postgraduate study and research writing.

Last but not least, I would like to place on record my appreciation for the many others who

have helped me but not able to mention all of them here.

VIJAYAKUMAR MUTHIYAH Matrix No 806618

**JUNE 2011** 

iii

# **Table of Contents**

ABSTRACT	i
PERMISSION TO USE	ii
ACKNOWLEDGEMENT	iii
TABLE OF CONTENTS	iv
CHAPTER 1	1
1.0 BACKGROUND	1
1.1 Research Background	1
1.2 Company Background	2
1.3 Problem Statement	8
1.4 Research Objective	8
1.5 Research Needs	8
CHAPTER 2	9
2.0 LITERATURE REVIEW	9
CHAPTER 3	33
3.0 RESEARCH DESIGN	33
3.1_Refine Research Questions	33
3.2 Sampling Methodology	33
3.3 Questionnaire	34
3.4 Limitations of the Study	35
CHAPTER 4	36
4.0 DATA ANALYSIS	36
4.1 SUMMARY OF SAMPLE	36
4.2 Data Analysis Tools	37
4.3 Data Analysis	37

CHAPTER 6	.46
6.0 CONCLUSIONS	.46
6.1 Recommendations	.51
REFERENCES	.53
APPENDIX A - INTERVIEW OUESTIONAIRE	55

### CHAPTER 1

### 1.0 BACKGROUND

## 1.1 Project Background

When was the last time we purchased a mobile phone just for you and found exactly what you wanted? Because of the large number of options available that a consumer can make, most customers end up compromising. We buy the shape you do not prefer or pay for a premium functions that you may not need. This problem is not just for the mobile phone industry. Why do modern day factories manufacture an abundance of products that sit as excess inventory yet they still do not know what exactly the customer wants?

In the past, the rule of traditional business in the manufacturing industry was dictated by a high volume of products at low costs. Today, Lean Manufacturing has been a great interest for manufacturers in the whole world. It is because this principle affects companies of all sizes. Numerous companies are applying Lean technologies and seeing dramatic improvements in quality, production, customer service, and profitability. What is "Lean Manufacturing"?

Lean Manufacturing technology is not just a management style or a way of producing better products. It is a production philosophy. We can also understand as the way of mapping the overall production process from raw materials to finished products all the way to the customers. It is called "Lean" because this technology, or a process, helps manufacturers to produce more with less time, inventory, capitols and fewer resources.

In most production cycles, only a small amount of time is spent adding a value to a product, something that is meaningful in the eyes of customers. Most manufacturing efforts are spent on activities that do not add value to the product and are not required by the process or by the customers. This is non-value added activity. Often cases, when manufacturers would like to improve or increase production output, it is common practice to simply plan more of everything. It is very common to hire more employees, buy more equipment, or a

# The contents of the thesis is for internal user only

### **REFERENCES**

- Berk, J., & Berk, S. (2000) *Quality management of the technology sector*. Boston, MA: Newnes, p.7.
- Capezio, P., & Morehouse, D. (1993) *Taking the mystery out of TQM: A practical guide to total quality management*. Hawthorne, NJ: Career Press, p.1, p.157
- Cartin, T. J. (1993) *Principle and practice of TQM*. Milwaukee, WI: Quality Press, p.xii, p.61.
- Conner, G. (2001) *Lean manufacturing for the small shop*. Dearborn, MI.: Society of Manufacturing Engineers, p.171.
- Cottman, R. J. (1993) Total engineering quality management. Milwaukee, WI: ASQC Quality Press; New York, NY: M. Dekker, p.29-30.
- Hand, M. (1994) *Freeing the Victims* Personnel Review (Online), *23*(2), 25 (PDF) Retrieved from: http://search.epnet.com/direct.asp?an=9504252759&db=crh
- Heizer, J., & Render, B. (1995). *Production and operations management*. Upper Saddle River, NJ: Prentice-Hall, Inc., p.370.
- Jordan, J. A., Jr., Michel, F. J. (2001) *The lean company: Making the right choices* Dearborn, MI: Society of Manufacturing Engineers, p.14.
- Liker, J. K. (1997). *Becoming lean: Inside stories of U.S. manufacturers*. Portland, OR: Productivity Press, p.xiv.
- Monden, Y. (1983). *Toyota Production System*. Norcross, GA: Industrial Engineering and Management Press, p.1.
- Mighetto & Associates. (2001) TQM (Online) Retrieved from: <a href="http://www.eskimo.com/~mighetto/lstqm.htm">http://www.eskimo.com/~mighetto/lstqm.htm</a>

- Orf, J. Y. (1997). *Japanese education and its role in Kaizen*. In Liker, Jeffery K. 1997 *Becoming lean: Inside stories of U.S. manufacturers* Portland, OR: Productivity Press, p.75.
- Regan, M. D., & Slattery, M. (2000). *The Kaizen revolution: How to use Kaizen events to double your profits*. Raleigh, NC: Holden Press, p.29.
- Stout Technology Transfer Institute. Stout Advanced Manufacturing Assistance (SAMA)
  Retrieved from: http://stti.uwstout.edu/centers/sama.asp
- Womack, J. P., Jones, D. T., & Roos, D. (1990) *The machine that changed the world.* New York, NY: Rawson Associates, p.11.
- Wren, D. A., & Greenwood, R. G. (1998) *Management innovators: The people and ideas that have shaped modern business*. New York, NY: Oxford University Press, p.218.