**A**

**Seminar Report**

**on**

**SUPPLY CHAIN MANAGEMENT**

**By**

**Sumit Srivastava**



**Department of Mechanical Engineering**

**Shambhunath Institute of Engineering and Technology,**

**Allahabad**

**November, 2017**

**A**

**Seminar Report**

**on**

**SUPPLY CHAIN MANAGEMENT**

### in partial fulfillment of the requirements for the degree of

**Bachelor of Technology**

**in**

**Mechanical Engineering**

**By**

**Sumit Srivastava**

**Under the guidance of**

**Mr.Abhilash Gupta (Name of your guide)**



**Department of Mechanical Engineering**

**Shambhunath Institute of Engineering and Technology,**

**Allahabad**

**November, 2017**

# https://encrypted-tbn3.gstatic.com/images?q=tbn:ANd9GcSiMM3hoylQL0F-ZajA9HJNynJHXsbXqyqHNv9Li3y9ybqDmm58hD2OtGA CERTIFICATE

I hereby certify that the work which is being presented in the B.Tech. Seminar Report entitled **“A review of some high velocity forming techniques”,** in partial fulfillment of the requirements for the award of the **Bachelor of Technology in Mechanical Engineering** and submitted to the Department of Mechanical Engineering of Shambhunath Institute of Engineering and Technology, Allahabad, U.P. is an authentic record of my own work carried out during a period from July 2017 to November 2017 under the supervision of **Mr. Abhilash Gupta, Asst.Professor, Mechanical Engineering Department.**

The matter presented in this report has not been submitted by me for the award of any other degree elsewhere.

**Sumit Srivastava (1016240054)**

**B.Tech 5th Semester**

**Mechanical Engineering**

This is to certify that the above statement made by the candidate is correct to the best of my knowledge.

**Date: Full Name & Signature of Supervisor**

**Head**

Department of Mechanical Engineering

Shambhunath Institute of Engineering and Technology, Allahabad, U.P.

**ACKNOWLEDGEMENT**

I take this opportunity to express my deep sense or gratitude and respect towards my Supervisor **Mr. Abhilash Gupta,** Asst. Professor, Department of Mechanical Engineering, **SHAMBHUNATH INSTITUTE OF ENGINEERING & TECHNOLOGY, Allahabad.** I am very much indebted to him for the generosity, expertise and guidance. I have received his valuable time and guidance while working on this report and throughout our studies. He has guided us not only with the subject matter, but also taught us the proper style and technique of working and presentation.

We wish to express profound gratitude to **Mr. Ubaid Ahmad Khan,** H.O.D of Mechanical Engineering, SHAMBHUNATH INSTITUTE OF ENGINEERING & TECHNOLOGY, Allahabad for his inspiration and guidance.

This work is the result of good support and guidance with facilities which were provided to us by the Department of Mechanical Engineering. At last but not least, we want to thanks all the members of the department who helped us towards the completion of our seminar presentation.

**Sumit Srivastava (1016240054)**

**B.Tech 5th Semester**

**Mechanical Engineering**

**CONTENTS**

**Chapter No. Page No.**

1. INTRODUCTION 01
2. ABCD EFGH 05

2.1 NFDN 45

2.2 XZFDJ 60

1. QWERTY UIOPS 75

3.1 FGGJ KJDOGJK 77

3.2 JD JGOLG 80

1. RESULTS AND DISCUSSIONS 90
2. CONCLUSION 95

REFERENCES 97

|  |  |  |
| --- | --- | --- |
| **LIST OF FIGURES** | | |
| Figure 1.1 | Maintenance management System Process | 05 |
| Figure 2.1 | Eight Pillars approach for TPM implementation (Suggested by JIPM) | 18 |
| Figure 2.2 | Framework of TPM Implementation | 20 |
| Figure 2.3 | Steinbacher and Steinbacher model of TPM implementation | 23 |
| Figure 2.4 | Pirsig model of TPM implementation | 24 |
| Figure 3.1 | transitivity link | 34 |
| Figure 3.2 | ISM Model Showing the Levels of Total Productive Maintenance Barriers | 43 |
| Figure 3.3 | Cluster Formation by MICMAC Analysis | 45 |
| Figure 4.1 | Grouping of TPMBs by judge 1 | 49 |
| Figure 4.2 | Grouping of TPMBs by judge 2 | 55 |

|  |  |  |
| --- | --- | --- |
| **LIST OF TABLES** | | |
| Table 1.1 | Organization of report | 13 |
| Table 2.1 | Manufacturing Priorities TPM considerations | 16 |
| Table 2.2 | Issues addressed by various TPM pillar initiatives | 18 |
| Table 2.3 | Twelve-step TPM implementation methodology | 21 |
| Table 3.1 | ISM as reported in the literature | 31 |
| Table 3.2 | SSIM Matrix | 32 |
| Table 3.3 | Initial Reachability Matrix | 33 |
| Table 3.4 | Final Reachability Matrix | 35 |
| Table 3.5 | List of Iterations | 37 |
| Table 3.6 | Level of TPMBs | 42 |
| Table 4.1 | Fundamental scale for judgment (saaty,2001) | 50 |
| Table 4.2 | Random index (RI) for n=1 to 8 (saaty,1980) | 52 |
| Table 4.3 | Random index (RI) for n=8 to 14 (saaty,1980 | 52 |
| Table 4.4 | pair-wise comparison scale for AHP preferences | 54 |
| Table 4.5 | pair-wise comparison Matrix (for judge 1) | 56 |
| Table 4.6 | Calculations for priority weight (w) and Eigen Vector *λmax*(for judge-1) | 57 |
| Table 4.7 | pair-wise comparison scale for AHP preferences | 58 |
| Table 4.8 | pair-wise comparison Matrix (for judge 2) | 60 |
| Table 4.9 | Calculations for priority weight (w) and Eigen Vector *λmax*(for judge-2) | 61 |
| Table4.10 | pair-wise comparison scale for AHP preferences | 62 |
| Table4.11 | Relative weight of Each TPMBs | 63 |
| Table 5.1 | Compression of results obtained by ISM and AHP | 66 |

|  |  |
| --- | --- |
| **LIST OF SYMBOLS, ABBREVIATIONS AND NOMENCLATURE** |  |
| Management, Maintenance, and Material handling ( 3-M ) |  |
| Analytic Hierarchy Process (AHP) |  |
| Condition Based Maintenance (CBM) |  |
| Consistency Index (CI) |  |
| Consistency Ratio (CR) |  |
| Cost of Ownership (COO) |  |
| Failure modes and effects analysis (FMEA) |  |
| Japan Institute of Plant Maintenance (JIPM) |  |
| Mean Time Between Failure (MTBF) |  |
| Mean Time to Repair (MTTR) |  |
| Morale (M), Return on Investment (ROI) |  |
| Multiple criteria decision-making (MCDM) |  |
| Overall equipment effectiveness (OEE) |  |
| Overall Plant Efficiency (OPE) |  |
| Priority weight (w), Productivity (P), quality (Q), cost (C), delivery (D), safety (S) |  |
| Random Index (RI) |  |
| Statistical Process Control (SPC) |  |
| Structural equation modeling (SEM)  Structural equation modelling (SEM), |  |
| Structural self-interaction matrix (SSIM) |  |
| Time Based Maintenance (TBM) |  |
| Total Effectiveness Equipment Performance (TEEP) |  |
| Total Productive Maintenance barriers (TPMBs) |  |
| Total Productive Maintenanceor (TPM) |  |

**Chapter-1**

**INTRODUCTION**

In today’s manufacturing world and globalization policies have created a more intensive competition amongst manufacturers. ………………………………………………………….

**Chapter-2**

**ABCDEFG HIJKLMNO**

In today’s manufacturing world and globalization policies have created a more intensive competition amongst manufacturers. ………………………………………………………….

**Chapter-3**

**QWERTY UIOPAS**

In today’s manufacturing world and globalization policies have created a more intensive competition amongst manufacturers. ………………………………………………………….

**Chapter-4**

**RESULTS AND DISCUSSIONS**

* 1. **Conclusion**

We have consulted some experts from Indian engineering industries to discuss about the contextual relationship among the RLBs identified from the literature review. ………………………………………………………………………………………………….

* 1. **Future Direction**

**……………………………………………………………………………………………………………………………………………………………………………….**

**Chapter -5**

# CONCLUSION

# REFERENCES

1. Abdulrahman Muhammad D ( 2012), “Barriers in implementing reverse logistics in chinese manufacturing sectors: an empirical analysis”poms 23rd Annual Conference Chicago, Illinois, U.S.A.
2. Fernández E, Kalcsics J, Nickel S, & Ríos-Mercado RZ (2010) A novel maximum dispersion territory design model arising in the implementation of the WEEE-directive. Journal of the Operational Research Society 61(3):503-514.
3. Gunasekaran A & Spalanzani A (2011) Sustainability of manufacturing and services: Investigations for research and applications. International Journal of Production Economics. doi:10.1016/j.ijpe.2011.05.011.
4. Jindal Anil & Singh Kuldip Sangwan(2011), “Development of an Interpretive Structural Model of Barriers to Reverse Logistics Implementation in Indian Industry” Proceedings of the 18th CIRP International Conference of Life Cycle Engineering, Germany, Springer Verlag Berlin, 2011
5. Lai K.H. and Wong C.W.Y (2012). Green logistics management and performance: some empirical evidence from Chinese manufacturing exports. Omega 40: 267-282.

6. Kumar D.S., Engg.Mechanics (5th edition), S.K.Kataria publications

7. Bhavikutti S.S., Engg.Mechanics (13th edition), New Age publications

8. www.ieee.com

9. www.Projecttopics.com

10. www.wikipedia.org

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(i) COVER PAGE

(ii) CERTIFICATE

(iii) ACKNOWLEDGEMENT

(iv) CONTENTS

(v) LIST OF FIGURES

(vi) LIST OF TABLES

(vii) LIST OF SYMBOLS, ABBREVIATIONS AND NOMENCLATURE

(viii) **CHAPTER-1: Introduction**

**CHAPTER-2**

**CHAPTER-3**

**CHAPTER-4: Results and Discussions**

**CHAPTER-5 Conclusion**

(ix) **APPENDIX** (if any)

(x) **REFERENCES**

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