

Understanding the need of E-manufacturing in Industries

Naveen Virmani¹, Mohd Mahmeen²
Associate Professor¹, Assistant Professor²

IIMT College of Engineering, Greater Noida, Uttar Pradesh, India

ABSTRACT

Nowadays, the market outside is very competitive. So, it is necessary for the industries to adopt new and efficient strategies and technologies in order to strive in the marketplace. The research and development work needs to be carried out in optimized way so that products or services can be make available to customer quickly at minimum cost.

Keywords: Competition, E-manufacturing

I. INTRODUCTION

E-manufacturing deals with making the production system automatically operated with less or minimum staff required for purpose of supervision or maintenance purposes. The information regarding the parts produced, parts rejected, scrap, number of products sold in market, availability of raw material etc. are send through electronically to the managers. There is exponential change in manufacturing scenario in last few decades. The long pipeline supply chain have been shrink to short supply chain as shown in figure 1. The mass production has been changed to mass customization and production is started when customer order is achieved; rather the product is made to stock and waiting for customer orders. The cost of inventory is used as working capital. Every resource like land, capital, machines, manpower etc. needs to be utilized in optimized way so that the productivity and quality of the products can be increased.

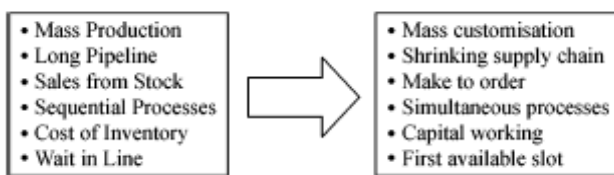


Figure 1: Transformation driven by E-manufacturing [1]

II. Literature Review

The term E-manufacturing is gaining importance continuously in the current scenario because of changing needs of customers are required to be

incorporated in production system quickly so that customized products can be provided to customers in minimum time [1-7]. E-Manufacturing is opening up opportunities for data intensive activities such as on-line monitoring and diagnostics of machine tools conditions and knowledge intensive processes including new product development, complex systems modeling and simulation, and real-time decision making supports and complex problems solving [1]. As shown in figure 2; e-manufacturing deals with real time e-maintenance and e-business so that products of high quality and low cost can be produced.

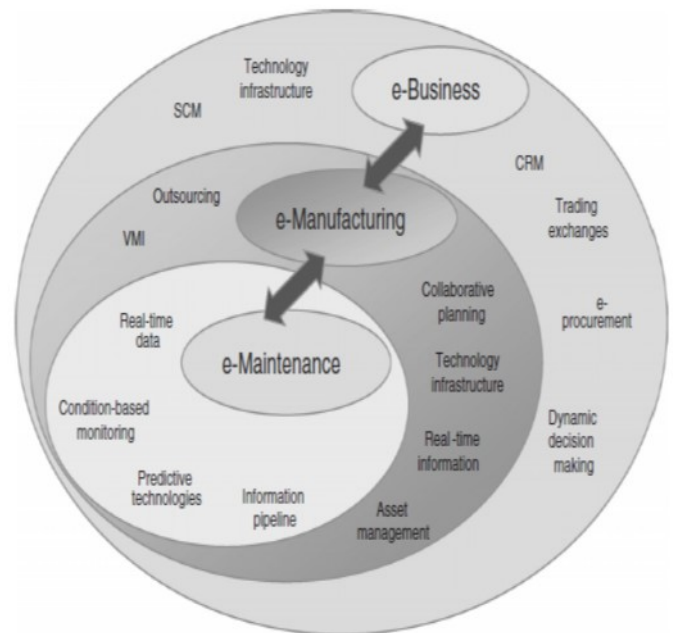


Figure 2: E-manufacturing and its integration with e-business and e-maintenance [8]

III. CONCLUSION

It has been seen through literature review that e – manufacturing results in increased productivity, increased quality of products, better customer satisfaction, better sales, increased market share, increased employee morale.

IV. REFERENCES

- [1]. Cheng, K. and Bateman, R.J. E-manufacturing: characteristics, applications and potentials: review. Progress in natural science. 2008; 18(2):1323-28.
- [2]. Department of Trade and Industry (DTI). Manufacturing 2020 Foresight Report; March 2000.
- [3]. Stephens W. E-manufacturing: it is more than email and ERP. E-Business Manufacturing 2000:14–9.
- [4]. Cheng K, Pan PY, Harrison DK. Internet as a tool with application to agile manufacturing: a web-based engineering approach and its implementation issues. Int J Prod Res 2000; 38(12):2743–59.
- [5]. <http://www.rockwellautomation.co.uk> [accessed 21/9/17].
- [6]. <http://sun.com> [accessed 21/9/17].
- [7]. Chan H, Lee R, Dillon T, et al. E-Commerce: fundamentals and applications. John Wiley & Sons Ltd; 2001.
- [8]. Koc, M., Ni, J., Lee, J. and Bandyopadhyay, P. Introduction to e-manufacturing. The industrial information technology handbook.2004: 1-8