

## **An Excellent Technique: The CMS**

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### **Abstract**

Due to rapid globalization and faster growth of world market, there is always a need of modification in the present mode of manufacturing system; these modifications increase the viabilities of manufacturer to move ahead in competitive market. These changes also improve the manufacturer and consumer relation by meeting the latest demand of consumers.

The concept of Cellular Manufacturing system is the new in era of twenty first which covers the responsive and time saving strategies design and adopted by the manufacturers to dominate the market. Cellular Manufacturing system (CMS) proves to be advancement over other manufacturing systems which are like Flexible Manufacturing System (FMS) and Traditional Manufacturing System (TMS). Although many industries and companies in India are still in the phase of FMS and still need to cover advance strategies.

This paper focuses on the comparison for the best technique in manufacturing

**Keywords:** CMS, FMS, TMS

### **1. INTRODUCTION**

In today's competitive environment many companies are motivating to improve their manufacturing performance (Sundharam et al., 2013). It is now universally accepted that cellular manufacturing (CM) is one such method that manufacturers can use to help meet their strategic commitments, through product and volume flexibility, lower costs and improved customer response times. CM is based on operators processing

part families, or collections of similar parts, in cells, or clusters of dedicated machines that may be dissimilar in function (Wemmerlov & Hyer, 1987). The benefits of CM include reduction in setup times, material handling, work-in-process, cycle time, and tooling requirements (Huber & Hyer, 1985).

The customer demands change continuously is creating a requirement for new technology of manufacturing systems (Carvalho et al., 2011). In order to survive in competitive and dynamic markets, Industries should have sufficient flexibility to produce a range of products on the same platform (Datta et.al. 1992). In this way, cellular manufacturing systems are required to scrutinize economical background as well as engineering concerns; without it they will not be able to get a remarkable share of competitive market to prove their investments. cellular manufacturing systems (CMSs) are fabricated to continuously produce different product families in the shortest time and with different machine cells at the lowest cost without compromising with the quality (Khan et. al.,2012).

## **2. ADVANTAGES**

For the successful implementation of cellular manufacturing, a set of assumptions should be adhered to. These assumptions are related to the design, operation and control of the system. There are numerous advantages associated with cellular manufacturing

- 2.1 Reduced material handling
- 2.2 Reduced tooling
- 2.3 Reduced set up time
- 2.4 Reduced expediting
- 2.5 Reduced in process inventory
- 2.6 Reduced part make span
- 2.7 Improved operator expertise
- 2.8 Improved human relations

## **3. DISADVANTAGES**

There are also some disadvantages associated with cellular manufacturing:

- 3.1 Increased capital investment
- 3.2 Lower machine utilization

#### 4. COMPARISON OF CMS WITH OTHER MANUFACTURING SYSTEM

Cellular Manufacturing System is evolved because of the several limitation in earlier manufacturing system. In Table 1. we have discussed differences between various manufacturing system.

**Table 1:** Relative Differences

<b>Characteristics</b>	<b>Mass</b>	<b>FMS</b>	<b>CIM</b>	<b>Lean</b>	<b>CMS</b>
Emphasis on eliminating the losses	Low	Low	Medium	High	High
Loss of production level	Medium/High	Medium	Low	High	Flexible
Sensitivity to consumer demand	Low	Medium	High	Medium	High
Needs of expert employees	Low	High	High	Medium	High
Loss of business cooperation	Low	Low	Medium	Low	High
Initial Investment	High	High	Low	Medium	Medium
Cost to Introduce New Models	High	Medium	Low	Low	Low
Time to introduce new models	Low	Medium	High	Medium	Low
Prod. Volume Capability	High	Low	Low	High	Medium
Equipment usability	High	High	Medium	High	Medium
ICT	Low	High	Medium	Medium	High

#### 5. CONCLUSION

Cellular manufacturing may be new as a concept but aspects of the practices embodied in cellular manufacturing are already in place separately, it can also be seen as combination of Product Manufacturing and Process Manufacturing systems. Now it's important to understand that various key elements of Product Manufacturing and Process Manufacturing systems can be helpful in successful implementation of cellular Manufacturing System. The cellular manufacturing company needs to integrate design, engineering, and manufacturing with marketing and sales, which can only be achieved with information and communication technology (ICT).

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