ABSTRACT

Today’s economic scenario stresses the need for a Company to choose an ‘Appropriate Manufacturing Strategy’ for excellence so as to make it achieve World Class Standards.

Keeping this aspect in view, a study of advanced manufacturing practices in auto component industry was carried out.

Some of the methods proposed are technological, some organisational and architectural and yet others of the nature of information technology. Some methods aim at leadtime reduction, some aim at inventory reduction, some others focus on customer satisfaction or organisational. Some methods highlight environment issues and some stress human resource and strategy for continual improvement.

The proposed methods in this research are mapped accordingly. The plethora of emerging manufacturing practices necessitates a rational selection of the appropriate manufacturing practice for auto component companies.

In tune with the scope of the research, production methods divided into three groups, each with its main philosophy, are considered.
The responses to e-questionnaire are included in the database. Summary is analysed and presented.

The thesis discusses the evolution of research concept, identifies manufacturing practices and objectives, validation of research concept with personal background and experience. An exhaustive review of literature and data analysis in four cases has also been done.

A comprehensive e-questionnaire supported by a software was evolved based on responses to a pilot questionnaire. This comprehensive study keeps trend of the current and future needs for excellence in manufacturing.

A major part lay in identifying 84 manufacturing practices and classifying them under 5 types. 10 key objectives were identified and are classified under 5 factors.

The model evolved out of this wide study – An Appropriate Manufacturing Practice Selection Model - is a holistic model for understanding business environment, selecting relevant manufacturing practices, verifying & validating the selected and implemented practices. A software Computer Aided Tool for CATAMPSM has also been developed to support AMPSM.
The new model’s application and the validated results in four companies are presented as case studies. The impact of the application of the new model has also been done.

At a time when India is poised for global leadership, this model has been evolved and this will be helpful for transforming a company and making it global and competitive.

The new model is versatile for global application as it takes into consideration all the vital policy directives like market requirements, quality factors, objectives and manufacturing practices.

The Computer Aided Tool helps the user to analyse the possible alternatives lucidly and objectively.

Based on this Excellence Model any company can select an Appropriate Manufacturing Strategy that suits it best.