APS1012 Management of Innovation – Final Team Projects, Fall 2010

Innovations in Manufacturing

Objective

Take a look into the past of manufacturing in various different areas in order to find development trends that can be used to predict the future direction of the manufacturing industry. Consider three areas: Manufacturing practices, manufacturing processes and logistics. Examine two significant developments in each area, and study how they came into being. What factors drive the development of new technologies and how can manufacturing companies capture the knowledge to succeed in the future?

Summary

Manufacturing Practices

The trends clearly evident throughout the evolution of manufacturing practices are:

- Lower per item cost
- Plentiful goods
- Variation of choice
- Low contribution of pollution and environmental foot print
- Low waste

Manufacturing Processes

The historical development of the lathe and forge had been motivated by the need to process harder and stronger alloys in order to build larger, higher and faster structures and machines. The traits seen in the past will shape the next evolution of machining:

- Reduced Cost
- Capability of handling many different material types
- Increasing complicated geometries
- Allowing more creativity and imagination in the design of components
- Reduced labour and supervision of equipment
- Simpler to use and more open to public use

Logistics

The driving force behind innovations in manufacturing is the money to be made by the company, the efficiency of the process and customer acceptance. Whenever a newer technology is created that provides similar benefits as current technologies but for a cheaper price, a new S-curve begins on the graph of performance versus time.