Project IV

Tools For Benchmarking Product Family

Team Members:
Avanti Jain – LEAD ☺
Anand Kumar Singh
David Wolf
Kalpesh Munot
Rahul Sareenbat
Tim Culbertson

Motivation

- Increased competition and globalization has led manufacturing companies to benchmark, redesign and consolidate their product lines against other competing companies across market segments.

- Benchmarking is a human intensive activity wherein probability of variation in information collected and analysis is high.
Objective

- To provide a platform for systematic and consistent benchmarking analysis of family of products.

How?

- Use Benchmarking Tools & Implement Commonality Analysis
  - BOM and Input sheet generation
  - Design Structure Matrices (DSM)
  - Clustering Algorithms
  - Generational Variety Index (GVI)
  - Product line Commonality Index (PCI)
- Develop user-friendly software to automate above mentioned tools in a standard & convenient format.
Learning So far...

- VBA & Excel
  - Macros... Maybe
- GVI, PCI & DSM...
  - Maybe
- Read a lot of papers... Not really

Actual Learning so far...

- Literature research on benchmarking as well as DSM, clustering algorithms, GVI & PCI.
- Increasing familiarity with VBA & Excel Macros
- Preparing input architecture for product data (BOM)
- Developing algorithm for PCI calculation
Sample Input Sheet

Semester plan

Gantt Chart (Project Timeline)

Date
03/05/09 03/12/09 03/19/09 03/26/09 04/02/09 04/09/09 04/16/09 04/23/09 04/30/09

Create BOM
Create Input Sheet
Write DSM/C ode
Clustering Algorithm
PCI Algorithm

Determine Market and Desired Life of Product Platform
Create QFD Matrix
List Expected Changes in Customer Requirements
Estimate Engineering Metric Target Values
Calculate Normalized Target Value Matrix
Create GVI Matrix
Adapt to all 4 connection types
Report Writing