Introduction

- Six Sigma is a set of techniques or methodologies to improve overall efficiency of the process.
- The process is six sigma when you achieve 99.99% i.e. 3.4 defects per million.
- Two main methodologies: DMAIC and DMADV.

Quality Function Deployment

- To get customer feedback throughout the design process of the product.
- Quality is considered as measure of customer satisfaction with product/service.

House Of Quality (HoQ)

- HoQ is a tool used to define relationship between customer requirements and product capabilities.
- Increases cross functional integration between various teams within an organization.

Analytic Heirarchy Process (AHP)

- AHP is a decision making process including multiple criterias.
- AHP helps decision maker reach the solution best suited to their goal and understanding.
- General Process: Users decompose problems into easily comprehended sub problems and analyze independently.
- AHP Implementation: gluc/ahp library in R language.

Feature Models (FM)

- Features are specific characteristic or a distinct aspect attributed to a product.
- Feature Models are used to capture variability amongst different configurations of features best suited to the end goal.
- FM Structure: Tree like structure with links from parent to child.
- FM Implementation: FAMILIAR - Domain Specific Language for Feature models implemented in Java.

Data Modeling

- Multiple configurations using FM referenced from - A Common Home for Feature and Requirements: Retrofitting the House of Quality with Feature Models by Emaneul Matzler, Bernhard Wally and Alexandra Mazak
- Data modeling ‘Proof of Concept’ to increase efficiency of AHP process. Data gathering and normalizing function and feeding the output to AHP engine to refine the user requirements best suited for the goal.

Image References:

(c) Data Modeling using AHP

(b) Multiple configurations using FM

(a) House of Quality

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