

TM

CADECplus

Every equipment manufacturer needs to customize their design to individual customer needs for user interface, system interface, capacities, range, accuracy, strength, functionality, etc. MDS product suite helps the equipment manufacturer in developing and maintaining systematic product Configurator applications and getting custom-designs created automatically.

CAD+KBE Technology Implementation

CAD+KBE Implementation Approach :

3D Mechanical CAD technology revolutionized the way mechanical engineers work. The machines now-a-days get created virtually within a computer, and then physically. Various aspects of the machines / equipments like looks / strength / mass properties / mechanism, etc can be evaluated virtually by MCAD tools. The MCAD tools understand engineering aspects like Mass, surface properties, FEA, interference, joints, motion, etc.

Mark Design Solutions Pvt. Ltd. (MDS) is dedicated to 3D MCAD technology implementations and development of tools / processes for ease in MCAD use. Our objective is to make MCAD more result oriented and focused. MDS products help in equipment configuration and integrating it with sales enquiries, production drawings creation, PDM vault and ERP part-master.

The technologies used in MDS product suite are:

Parametric Modeling : It is a methodology to **control any geometry using a computer database**. Any feature can be enabled / disabled or any dimension can be modified by changing a value in a table. The user needs to define a geometry feature in such a way as to control its parameters.

Knowledge Based Engineering: It is a science to link engineering know-how with CAD models. It systematically captures rules and allows to refine them continuously.

Object Oriented Geometric Modeling : It is a **method of generalization to create a mechanical product variant** from product class model and a set of rules to modify shape and size parameters, based on customer specifications.

CAD+KBE Implementation Scenarios :

Scenario 1: Web-Based Configurator

Organisation Profile:

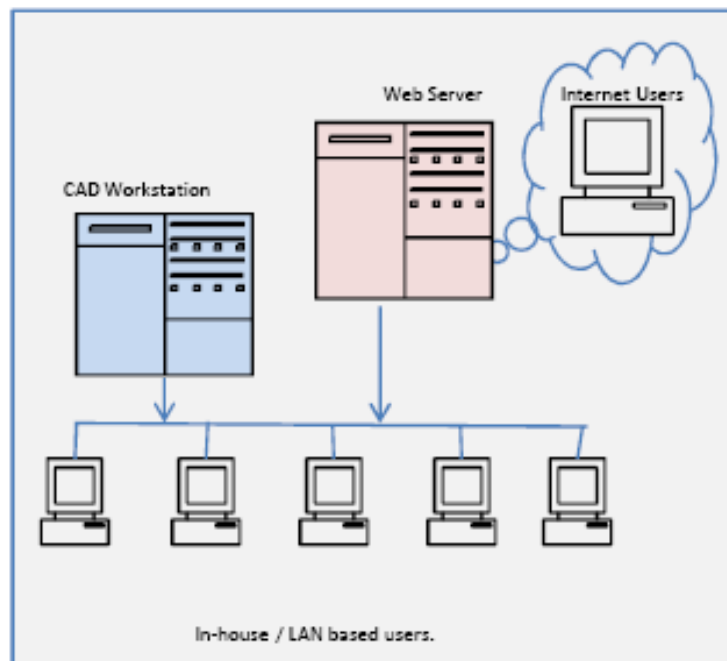
- Light engineering Accessories Manufacturer
- Wide variety of standard product lines and variants.
- In-house design and development of products
- Product customisation for customer requirement

Application needs:

- Customers need to choose right product graphically
- Catalogues are too static and unable to depict product variants
- Web-based dynamically updated product configuration required.

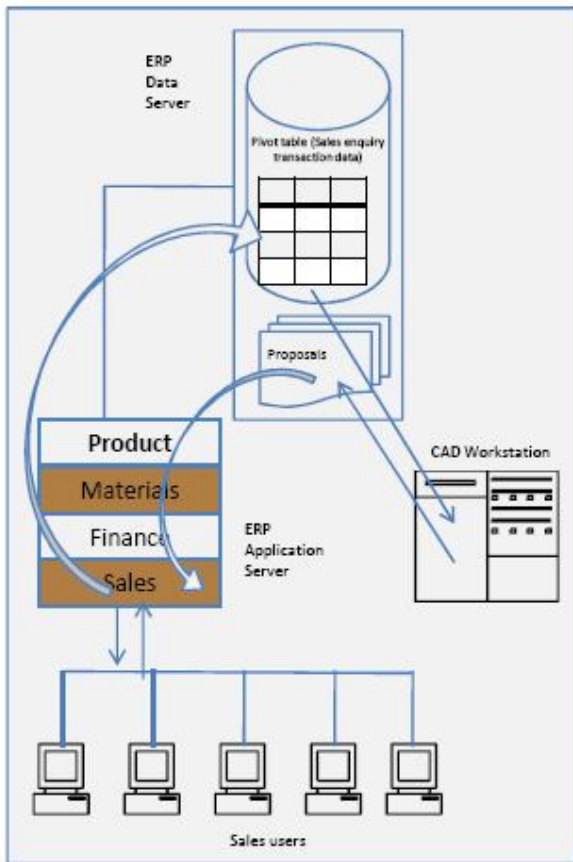
Challenges:

- User interface should be simple
- Deployment should be easy
- Configurator updations should be possible



Benefits:

- Technology edge
- Common collaboration tool for design / sales & dealers / customers
- More systematic / Logical product options
- Useful for further product development.



Scenario 2 : ERP-Integrated Configurator

Organisation Profile :

- Medium/ large engineering Equipments Manufacturer
- Dealers / branches / sales persons at various locations
- ERP system for sales enquiry management

Application needs:

- Highly technical product selection and configuration
- Need to submit GA layouts, BOMs, alongwith proposals.
- ERP sales enquiry details to be used to create 3D rendered image of product layout for customer to get visual feel of the installation.

Challenges:

- Complex look-up tables to select the sizes and shapes of accessories & mounting details.
- Large number of parameters for layout models & drawings.
- Integration with SQL based ERP systems.

Benefits:

- Design / Engineering team is free from layout creation
- Better visualization because of to-the-scale and rendered images of layout.
- Selection logic properly documented and automatically available.

Scenario 3 : In-house Mfg Drawings Creation

Organization Profile:

- Highly customized Machines Manufacturer
- No two machines have same layout.
- Engineering department takes care of customizing existing designs for customer specifications.
- Correct 2D-drawings & BOM need to be released to in-house production department and vendors.

Application needs:

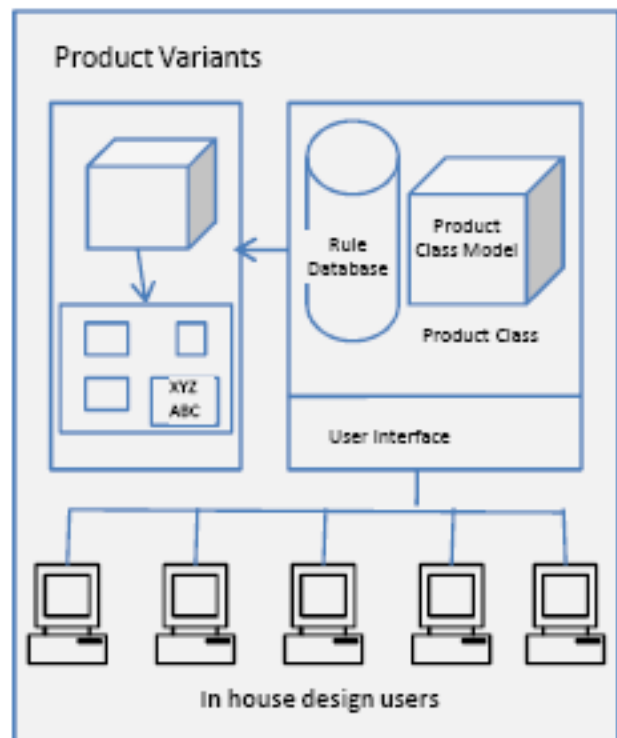
- The design engineering have created rules for part dimensions and features.
- Need to automate the manufacturing drawings creation from customer specifications.
- Application to be used within design dept.

Challenges:

- Mfg drawings of assembly & parts required.

Benefits:

- No manual errors in drawings.
- Standardized drawings.
- Designers free to focus on new product devt.



Mark Design Solutions has experience in implementing SolidWorks 3D CAD technology in over 100 organizations and is focused at developing Knowledge Based Engineering Tools for Equipment Manufacturers.

Our Products

CADECplus :
Rule-Based
Product
Configurator

CADEC/Mechano :
Library-Based
Product
Configurator

CADEC/VaultX :
CAD-PDM
Integration Tool

CADEC/PSM : CAD-ERP
Integration Tool



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