Today organizations spend millions of dollars over engineering change orders (ECO). A single ECO can cost up to $30,000.

DFMPro, an easy to use CAD integrated Design for Manufacturing (DFM) software, identifies & provides recommendations to resolve potential downstream manufacturing issues.

Helps reduce expensive and time-consuming design iterations resulting into faster development of high-quality products.

### Get Early Visibility into Manufacturability & Product Cost

#### Typical Business Challenges

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Solution Provided by DFMPro</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overwhelming engineering change orders (ECO / ECN)</td>
<td>Capture design issues early and reduce engineering rework</td>
</tr>
<tr>
<td>Product cost escalations and depleting margins</td>
<td>Understand opportunities for cost reduction right at design stage and save cost</td>
</tr>
<tr>
<td>Product launch delays</td>
<td>Avoid late stage engineering changes and time-consuming rework</td>
</tr>
<tr>
<td>Dispersed organization knowledge</td>
<td>Capture best practices and bring in standardization in design review process</td>
</tr>
</tbody>
</table>
Easy and Powerful DFM Software to Drive Measurable Results Fast

Automates the DFM/DFX Review Process
- DFMPro automates and formalizes the design review process
- Seamlessly integrated inside PTC CREO Parametric™, Siemens NX™ and SOLIDWORKS®

Rule Manager
- Select and configure organization specific guidelines as design rules
- Bring in standardization in Design Review Process

Enables Best Practice Knowledge Capture and Dissemination
- Customizable framework to capture in-house best practices, tribal knowledge and industry standards
- Facilitates continuous design improvements and knowledge retention of retiring workforce

Industry Best Practices
- Engineering Best Practices
- Supplier Capabilities
- Standardization Requirements

Organization Specific Best Practices
- Sourcing
- Manufacturing
- Service

Easily Integrates Into Existing Enterprise Infrastructure
- Integrates easily with PLM, ERP, and MES systems
- Scalable framework for capturing and disseminating manufacturing knowledge upstream

Enterprise Systems
- PLM
- ERP
- MES
- Others

DFMPro Solution
- Input
- Output
- Best Practices
- DFMPro Recommendations

DFMPro modules support common manufacturing processes
- Machining
- Sheet Metal
- Injection Molding
- Assembly
- Die casting
- Welding
- And More...
**DFX Platform**

A scalable, extensible and flexible DFX framework that has collection of application, processes and technologies that are coupled with customization and support services based on customer needs.

![DFX Platform Diagram](image)

**DFX Analytics**

Enabling organizations to develop more collaborative and data driven culture

- Capture the data generated by designers
- Visualize the data with predefined plots
- Analyze and take action
- Plan effectively with supporting data
- Monitor the process with live data
- Identify and reduce waste

**DFX Analytics Provides Value Across the Enterprise**

- **Ensuring DFX Best Practices**
- **Improves Effectiveness of DFX Reviews**
- **Track DFX Issues for Program Success**
- **Ensure Success of DFX Initiatives**

**DFX Enterprise Platform**

DFX Enterprise platform to drive design quality, reduce product cost, bring in traceability and improve time to market

**Cost Add on**

- Evaluate design choices based on material, features, geometry & manufacturing regions
- Identify expensive design features impacting cost due to manufacturability and get recommendations for cost reduction
- Track the cost as designs are getting created

DFMPro cost add-on provides early cost visibility to design engineers right from when designs are getting created.
Celestica expertise is in design and engineering, electronics manufacturing and supply chain management services. Our suite of solutions spans the entire product lifecycle - from design, through to delivery and after market support.

Geometric DFX (rights reserved logo) solution helped us to improve productivity by almost 12% and helped us to identify quality issues earlier right during design phase.

Frank Huang  
ME Director, Celestica

DFMPro helps our designers quickly identify the issues which are otherwise difficult to capture at the design stage. These issues include things like mold wall thickness and undercuts in plastic parts, incorrect bends in sheet metal parts which cause problems downstream. This tool helps our design teams understand the processes involved in manufacturing. In other words, helps them understand how to Design for Manufacturing. This leads to a significant reduction in design iterations due to issues with manufacturability and a reduction in design checking time. Our aim is to get designs right the first time and this tool helps us achieve this goal.

SK Pradeep Kumar  
Director, E&T Capabilities

George Angelov  
Director, Global Prototyping & Planning, Whirlpool

Kaoru Mizoroki  
Group Manager, Toshiba Corporation

Now 3D design data of our products are checked by the DFMPro in the design process. Our conventional checking process by designers was highly time-consuming. In contrast, the DFMPro checking is truly fast and reliable in searching the parts to be redesigned or corrected, and the checking criteria can be customized for the appropriate checking of our own products. As a result, we successfully reduced 75% of the checking time of the wall thickness to enhance the efficiency and effectiveness of our design improvement before the release of drawings.”

For more details contact: dfmpro.marketing@hcl.com  
Visit our website: www.dfmpro.com