



An HCL Technologies Product

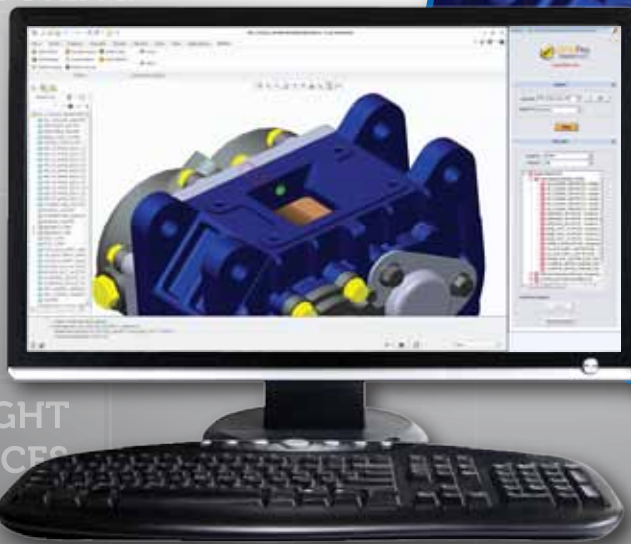
REWORK SAVINGS  
**15%**  
AND MORE...



HIGHER  
MANUFACTURING  
TIME

REWORK

HIGH  
SCRAP



TIGHT  
TOLERANCES

NON-STANDARD  
FEATURES

NON-STANDARD  
TOOLS

GET YOUR **DESIGN RIGHT**  
THE FIRST TIME!

Winning in today's global marketplace requires more than just creating innovative product designs. To succeed, companies must focus on designs that can help reduce scrap, minimize development cost, streamline production processes and speed up the product launch.

On a global average, designers spend around 30% of their time on design rework - designing a product first, then attempting to optimize it later to meet downstream manufacturing requirements.

DFMPro is a powerful design validation solution that assists design engineers to pre-empt and address downstream manufacturability, assembly, quality and serviceability issues at an early design stage to avoid production delays, cost overruns and high rework and scrap.

**Using DFMPro you can maximize engineering productivity by 15%**

# Powerful, Yet Simple Design for Manufacturing Solution

Reduces rework and improves productivity by as much as 30%

- DFMPro validates upstream manufacturability, identifying design areas that are difficult, expensive or impossible to manufacture
- Automates and formalizes the design review process using best-practice handbooks and industry associations
- Evaluates design models for manufacturing and assembly and suggests corrective actions based on library of 100+ design rules for core manufacturing processes
- Provides a mechanism for capturing best practice knowledge and brings in standardization across the organization

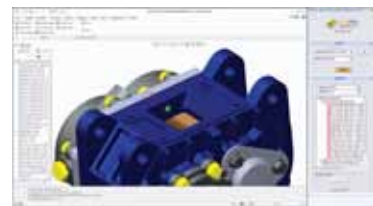
Using DFMPro, companies are able to significantly reduce rework and engineering change orders (ECOs), and reap immediate benefits by reducing defects, costs and delays

## Key Benefits

- Automates in-house DFM practices incorporated in organization's standard operating procedures
- Captures design errors early in the design stage and ensures past mistakes are not repeated
- Leverages and reuses experience of experts
- Facilitates on-the-job training of design engineers



## Faster and Smarter Innovation with First Time Right Design



Run DFM analysis in familiar CREO Parametric™ interface

### Validate Designs within Familiar CAD Environment

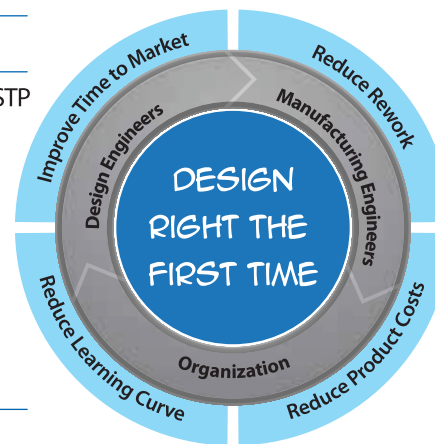
- Seamlessly integrated inside PTC CREO Parametric™, Siemens NX™ and SolidWorks®
- Identifies and highlights problem areas on the CAD model
- Facilitates corrections on designs without leaving the familiar CAD environment
- Eliminate time-consuming file transfers using standard file formats such as IGES and STP



Capture best practices knowledge

### Capture and Re-Use Best Practice Knowledge for Continuous Improvement

- Out-of-Box industry best practices available in form of DFM rules for core manufacturing processes
- Highly customizable framework to capture and integrate in-house knowledge and best practices in form of structured rules into the overall design processes
- Facilitates continuous process improvement through knowledge capture and reuse



### Easily Integrates Into Existing Enterprise Infrastructure

- Integrates easily with PLM, ERP, and MES systems
- Automatically gets the required parameter information for existing or new DFM rules
- Scalable framework for capturing and disseminating manufacturing knowledge upstream



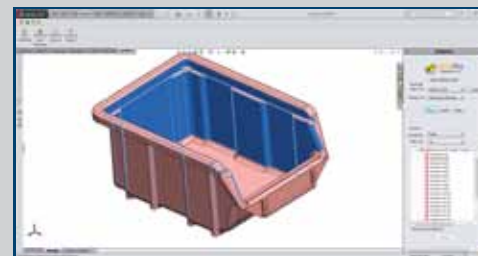
Integrates easily with existing enterprise infrastructure

### Improve Design Collaboration with Comprehensive 2D and 3D Reports

- Generates results in interactive 3D & 2D reports for easier analysis and interpretation
- Publishes reports in multiple formats - HTML, Excel and eDrawings® Publisher
- Improves design collaboration between departments, suppliers and vendors



Improves design collaboration and reviews through powerful 3D reports



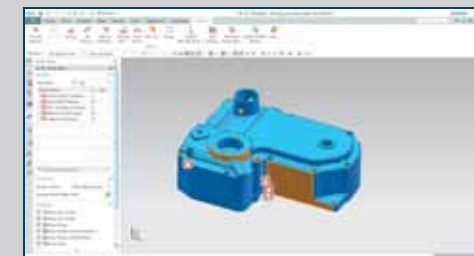
Injection Molding



Sheet Metal



Machining



Casting



Assembly

# DFMPro Success Stories

## Motorola Solutions Inc.

"Geometric Limited has quick, test-driven analysis tools – DFMPro and GeomCaliper. They are indeed simply integrated, intuitive and seamless in Creo ( Pro/Engineer).The results of tool aid us in improving our design and reducing issues in downstream"

**Paul Lalinde**

*Engineer Mechanical Staff Principal Motorola Solutions Inc.*

## 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 ca 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."

**Kaoru Mizoroki**

*Group Manager Toshiba Corporation*

## Whirlpool Corporation

"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*



Hello, I'm from HCL's Engineering and R&D Services. We enable technology led organizations to go to market with innovative products and solutions. We partner with our customers in building world class products and creating associated solution delivery ecosystems to help bring market leadership. We develop engineering products, solutions and platforms across Aerospace and Defense, Automotive, Consumer Electronics, Software, Online, Industrial Manufacturing, Medical Devices, Networking & Telecom, Office Automation, Semiconductor and Servers & Storage for our customers.

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