Moldflow Communicator

Easily Share Results With Your Distributed Product Team

White Paper

Introduction

The past decade has witnessed a widespread adoption of computer-aided engineering (CAE) software for simulating the injection molding process. Numerous companies have successfully used plastics CAE to optimize their design-to-manufacturing operations, saving thousands of dollars through a combination of reduced development and manufacturing costs, improved part quality, and shorter time to market. While the general benefits of plastics CAE have been well demonstrated and are now widely understood, there is much less understanding of the assumptions, quality, and applicability of specific analyses. Additionally, plastics CAE analysis is still a niche among many of the companies that perform it.

The knowledge gained from performing CAE analyses is rarely shared across the organization. The distributed nature of the industry contributes to this situation, creating a communication barrier that is compounded by the increasing globalization of the plastics marketplace. While tooling and manufacturing outsourcing is already all too common, a growing trend is the outsourcing of analysis work. Outsourcing brings its own set of challenges, including not knowing whether the analyses were run using the desired application, model, material, and process conditions.

Moldflow Communicator, a standalone Moldflow results visualization, comparison, and quantification system, addresses these communication and applicability issues and tackles the problem head-on. In its simplest form, Moldflow Communicator can be used to visualize and compare analysis results generated from both Moldflow Plastics Insight® (MPI®) and Moldflow Plastics Advisers® (MPA®) software. For MPI analyses, an additional benefit is the ability to quantify the quality of analyses performed. This is achieved through user-specified analysis quality criteria.

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plastics made perfect

Visualize Results

A key function of Moldflow Communicator is the visualization of analysis results. This requirement complements the current Moldflow analysis communication tools, which include project reports created in HTML, Microsoft Word or PowerPoint formats. These reports may include a combination of text, static images, and 2D animations.

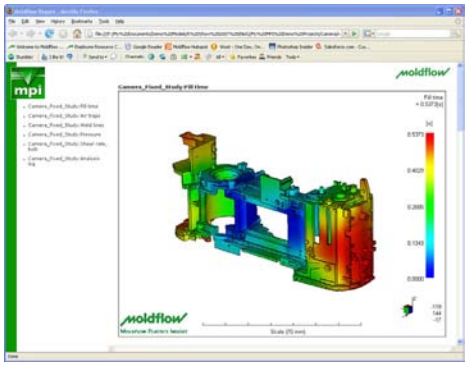

Figure 1: HTML project reports may take a back seat to the full information available in Communicator.

Says Keith Beattie, senior analyst at Fisher-Price, “Often I come across a project report of an analysis done by our overseas vendor, wherein I wished the image was created at a slightly different angle, thus allowing me to get a better perspective. Although I could ask them to provide the analysis model with results, file sizes are a concern, especially when you only want to review a couple of results.”

Through Moldflow Communicator, it is possible for extended team members to view analysis results dynamically and interactively on 3D models, without the need to access the complete Moldflow analysis product.

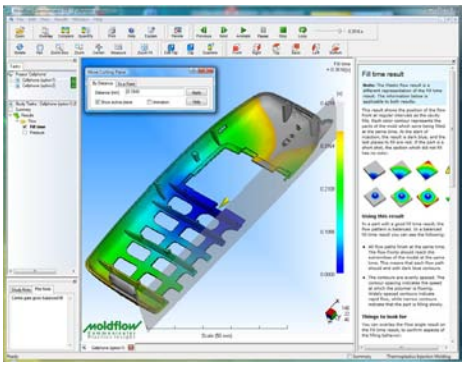

Figure 2: Moldflow Communicator allows anyone to view analysis results dynamically and interactively.

Visualize Results
(continued)

Moldflow Communicator has extensive model manipulation and visualization capabilities, including the dynamic and incremental pan/zoom/rotate functions, standard view orientations, cutting planes, and so on. Moldflow Communicator also features a comprehensive selection of result displays, including XY plots; shaded, contour, scalar, vector, and tensor plots; displacement plots; and animations.

These tools enable users to clearly identify problems and validate solutions.

Moldflow Results File

The issue of file size efficiency is addressed through the creation of a proprietary Moldflow results file. The Moldflow results file (*.mfr) is a single, compressed file that contains the model and a specified number of results data for up to two studies (a study is an analysis iteration). Moldflow analysis users have the flexibility to choose specific results for inclusion in a Moldflow results file. MPI 6.0 Revision 1 and later and MPA 8.1 Revision 3 and later include the capability to output Moldflow results files.

Moldflow Communicator 2.0 is required to view *.mfr files exported from MPI 6.2 and MPA 8.1 Revision 3 releases.

Compare Results

Moldflow Communicator features a set of powerful tools to compare analysis results from two iterations simultaneously to better understand design improvements. These tools include the ability to synchronize model orientation and result display automatically to investigate the models and results simultaneously.

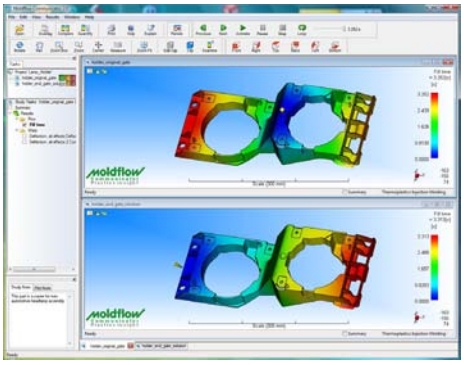

Figure 3: Compare results between two analysis iterations to realize design improvement.

Quantify Results

Moldflow Communicator allows companies that either outsource or rely on their vendors or suppliers to perform analysis to have a means to quantify the quality of analyses performed. This is achieved through user-specified analysis quality criteria.

MPI software provides a method for users to specify required analysis attributes through a criteria file (*.criteria). The criteria file then can be used to quantify the difference between what was specified and what was obtained. An example of the analysis quality criteria in use is shown in Figure 4. In the image, the table compares specified analysis criteria with an original analysis configuration and an improved analysis configuration.

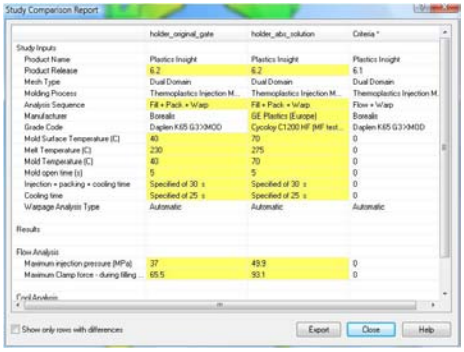

Figure 4: Moldflow Communicator allows users to quantify analysis configurations against specified quality criteria for MPI analyses.

Criteria files not only provide a means to quantify analysis results against requirements for a single project, they facilitate communication of critical model quality, material selection, and analysis process standards and best practices among globally distributed product teams.

Improved Communication Optimizes Benefits of CAE

Distributed product teams require a product to both visualize and compare the quality of plastics CAE results data. Moldflow Communicator was created specifically to address these needs. Through Moldflow Communicator, the assumptions, quality, and applicability of the analyses can be better understood and accounted for, and the knowledge gained from performing analyses has the potential to be shared more effectively among all participants in the design-to-manufacturing process.

Fisher-Price's Beattie notes, "Moldflow Communicator provides a means to transfer analysis results among our mold makers, manufacturing plants, and engineers around the world. The ability to set analysis criteria helps to ensure the quality of analysis is maintained, while the visualization capabilities convey information to both the experienced and novice alike. We expect to implement Moldflow Communicator throughout our entire global team."

Moldflow Communicator is free to both Moldflow customers and non-customers. It supports analysis results exported from both MPI 6.0 Revision 1 or later and MPA 8.1 Revision 3 or later and runs on 32- and 64-bit Windows systems.

To start sharing results with your distributed product development team today, download Moldflow Communicator 2.0 at www.moldflow.com/communicator.

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