BREAK OUT OF THE BUBBLE:

CHANGING 3D CAD SYSTEMS IS EASIER THAN YOU THINK

GSC

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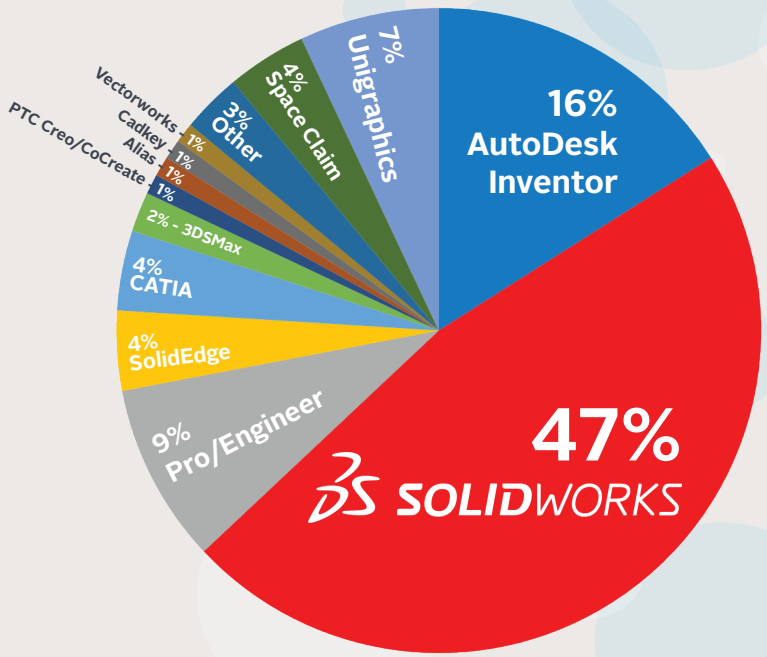
INTRODUCTION

SOLIDWORKS is the most successful three-dimensional mechanical design software in history. Since its debut in 1995, there are now 5.1 million users in more than a quarter-million organizations worldwide and it holds 47% of the Professional CAD market share.

In academia, 80% of the world's top engineering schools use SOLIDWORKS educational products. Locally, SOLIDWORKS is taught in nearly every 4-year engineering school and 2-year technical college in Wisconsin, Illinois, and Minnesota. The number of students trained in SOLIDWORKS around the world doubles roughly every 11 months!

For those who are using a different MCAD system, it can feel like you're in an ocean of SOLIDWORKS resources and talent but enveloped in a bubble preventing you from leveraging all that is around you.



Based on CNCCookbook 2016 CAD Survey Results, published January 28, 2016
blog.cnccookbook.com/2016/01/27/cnccookbook-2016-cad-survey-results-part-1-market-share/

Subscription Flexibility

Have you started to question your investment due to recent licensing changes made by your CAD vendor? Does it feel like you current vendor is forcing you into a subscription you don't want or need? Are you concerned these changes will significantly increase your cost?

Unlike its competitors, SOLIDWORKS continues to offer flexible licensing options, including perpetual licensing and 3- or 12-month term licensing, designed to meet the varying needs of our customers and users. And, there's no plans to stop selling or retire one of its most popular option: a perpetual license. A perpetual license, as the name implies, never expires.

Not to mention SOLIDWORKS provides the added benefit of the robust SOLIDWORKS community, a professional network of over 5 million users, including partners like GSC, who share invaluable support and training, as well as provide valued feedback to help SOLIDWORKS prioritize softer improvements and new features.

Stop Letting Your MCAD System Hold You Back

If you're having trouble hiring people who already know your design tool or you're frustrated with the lack of flexibility in your CAD vendors licensing, you may want to switch to the SOLIDWORKS platform and join its vast community. The process of changing from your current 3D CAD system to SOLIDWORKS may seem daunting, but this book contains the distillation of over 20 years' experience in helping companies overcome the challenges involved. More than just a catalog of options, you'll find sound advice on setting up the best path to get your whole team moved over to SOLIDWORKS. Read on, and you'll find it's easier than you think to "break out of the bubble."

DON'T WAIT FOR PERFECT

If you're waiting for a perfect translation from your current 3D CAD system into SOLIDWORKS, you're waiting for something that's never going to happen. We are 30 years into the age of 3D CAD. In that time, no CAD vendor has been able to create an automatic translation method that takes all of the design intent in the parts and assemblies from an outside system and brings it into theirs, let alone the corresponding associative 2D detail drawings of all the components and assemblies involved.

One third-party company, Elysium Global, does have a software product called CADfeature™ that will translate parametric features from one CAD system to another, and Version 14 of that software introduces an ability to translate associative 2D drawings as well. While Elysium's CAD translation features are state-of-the-art, they still require interaction from users to get the best fidelity out of the system, and the software is by no means perfect.

So, if you're waiting for the "easy button" before you move, you either need to change your thinking or plan on keeping your current CAD indefinitely.

YOU CAN DO THIS

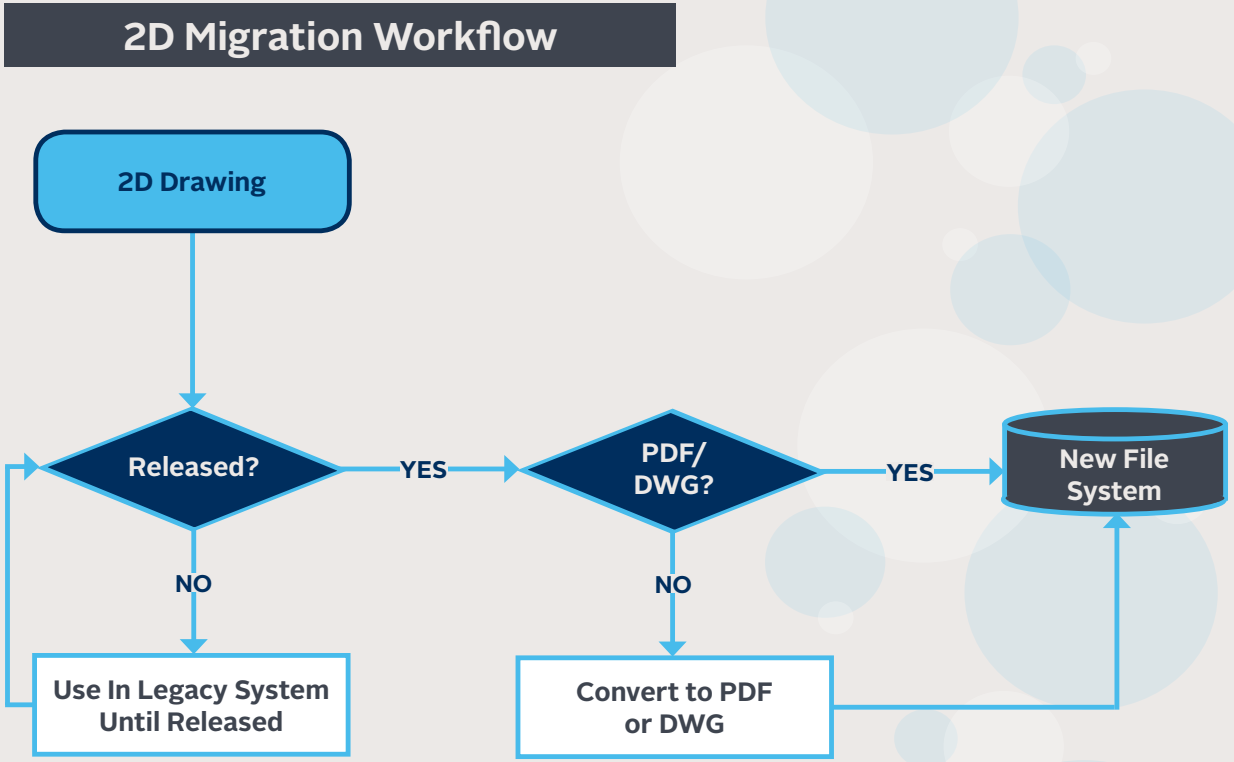
Migrating to a new CAD system can seem complex, but it comes down to managing two things: data and people.

The Data Shuffle

"We have zillions of files in our old system – how can we ever get all that into SOLIDWORKS?" The short answer is, you don't. It's very rare for a company to move all of their old data into SOLIDWORKS, for the simple reason that not all of it has to be there. The data that does need to come over doesn't always have to be converted, either. Consulting firm Tech-Clarity found that only half of a company's forward-moving legacy data ends up being converted into SOLIDWORKS format. That study was conducted before the advent of 3D Interconnect technology, which, as we'll see, precludes the need for translation in a variety of scenarios.

Strategies for Data Migration

2D data that is view-only, such as released drawings in PDF or DWG format, can be kept as-is. If the 2D data is still in work, then it should be kept in the original system until it becomes released. Expressed as a workflow, it would look like this:



3D data of items that you purchase, but don't change, is likely in a STEP or other neutral format – they can be used in the same way with SOLIDWORKS.

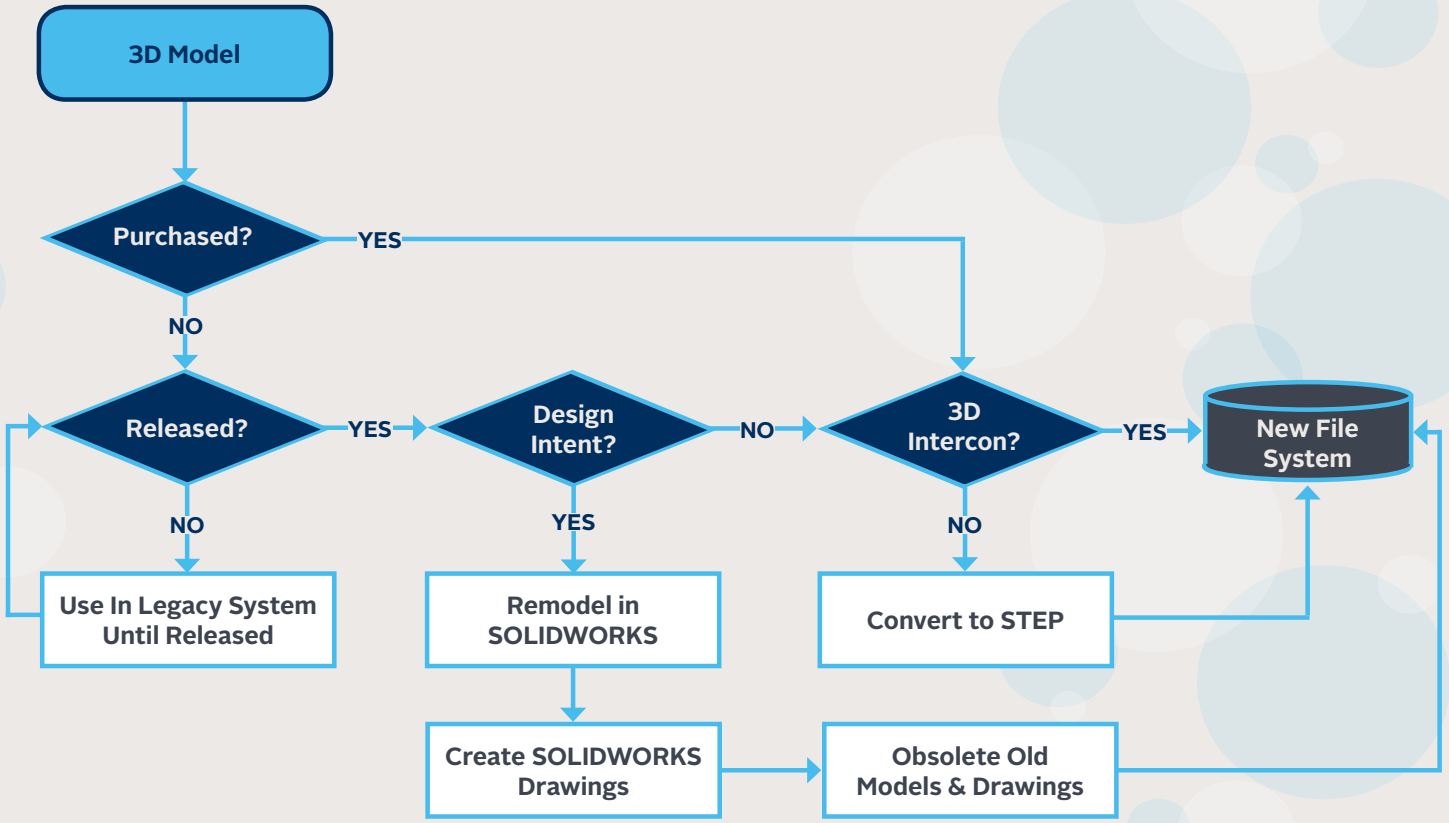
3D data that is in PTC, Autodesk Inventor, Siemens NX/Solid Edge, or CATIA V5 format can be used directly in SOLIDWORKS assemblies as components or subassemblies. Using the 3D Interconnect technology introduced in SOLIDWORKS 2017, these items will retain their associativity to the original files, so if they are changed in the native CAD system, the SOLIDWORKS assembly will allow you to update from those changes.

3D data that is specifically in Autodesk Inventor or PTC can also be directly translated into SOLIDWORKS with some feature history and parametric information intact. The success of this largely depends on how the models were created.

3D data that needs specific design intent will need to have new SOLIDWORKS models created and the old files obsoleted. Corresponding SOLIDWORKS drawings will also need to be created, and the old drawings obsoleted.

A high-level workflow showing these steps and decisions would look something like this:

3D Migration Workflow

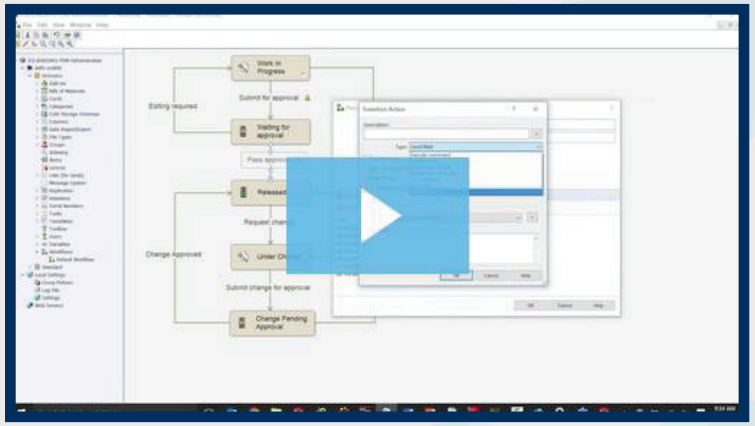


Manage Data and Process

With SOLIDWORKS PDM Professional, you can dump everything you already have in the vault and go from there; it's much easier to clean up duplicate files and classify data once it's in a database-driven vault system. Because SOLIDWORKS PDM Professional manages native SOLIDWORKS, DraftSight, AutoCAD, Inventor, Creo, and Solid Edge files, all users can work comfortably in the same environment.

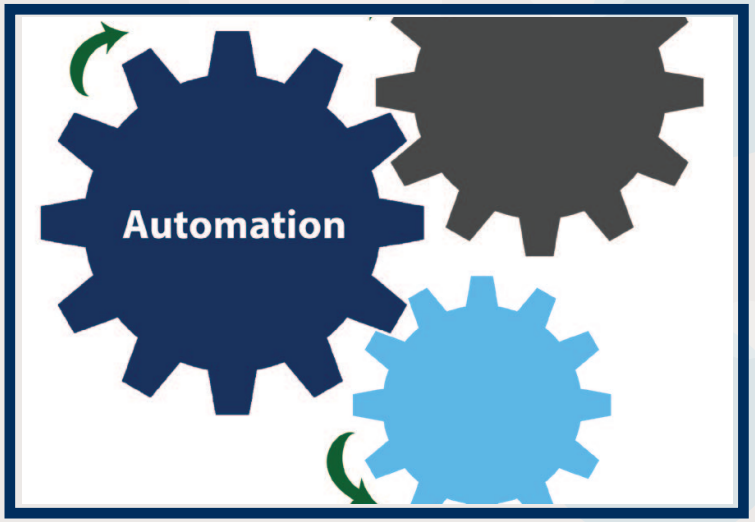
SOLIDWORKS PDM Professional's multi-CAD capability also enables everyone to participate in data management workflows, and this is a very powerful way to guide users through the data migration process you have established. Legacy CAD files and new SOLIDWORKS files can reside in the same project folders, and old files can be obsoleted as users progress through their workflows, automatically changing the access and visibility of those files. Workflows also allow for automated notifications, approvals, and file conversions – say, to an output DXF or PDF – to ensure data integrity as the migration process continues.

Automate Your Engineering Processes



[On-Demand Webinar] Get your first-look at SOLIDWORKS PDM. **Visit** bit.ly/PDM-First-Look

How Using SOLIDWORKS PDM for Automation Makes Data Entry Less Painful



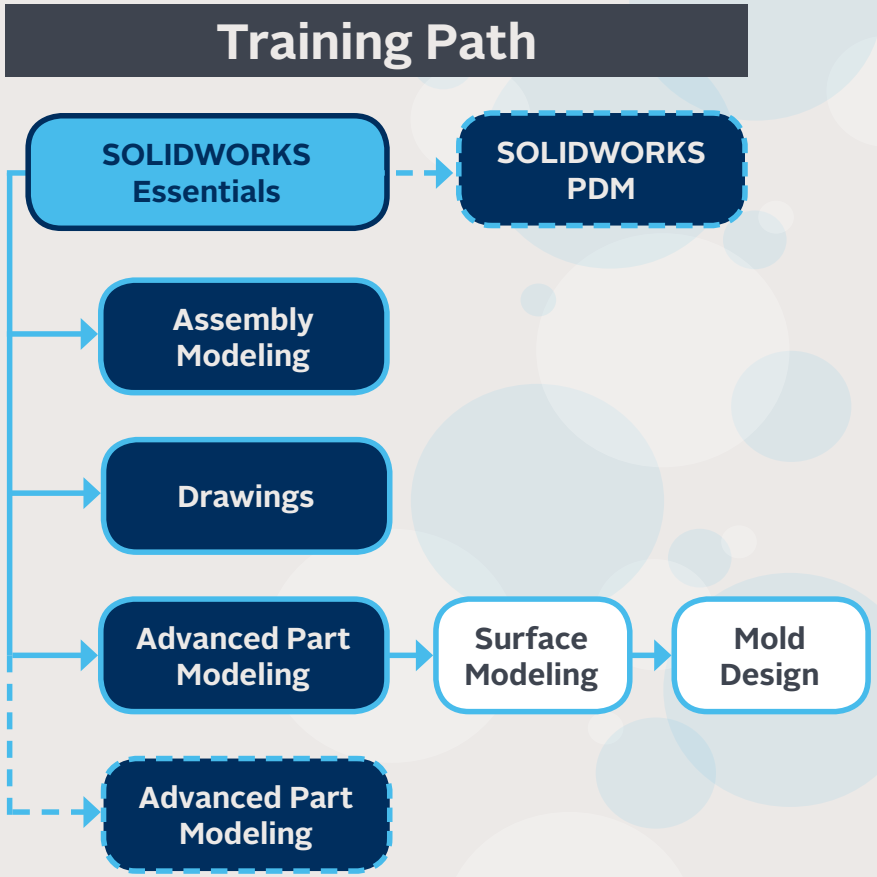
For many, SOLIDWORKS PDM proves to be a lifesaver in automation time and again. **Visit** bit.ly/PDM-Lifesaver

The People Factor

People have certain skills and processes they have learned while using the legacy system. To make the most of SOLIDWORKS, users will need skills training – you don't want them to use your new system in the same way as they used the old one! Classroom or online instruction are very effective, and there will be a variety of courses your users will want to complete. In addition to SOLIDWORKS application training, process training will help everyone smoothly walk between systems, knowing how to handle legacy data.

If you have people with SOLIDWORKS experience from a previous job, it is possible they will need less training than the rest of the group. A GSC SOLIDWORKS Productivity Assessment will reveal the proper training start point for those individuals. Experience varies widely from person to person, so having an assessment to uncover any knowledge gaps is essential.

Training paths for specific types of users are a good place to start when creating an overall training plan. GSC has a dozen training paths identified, such as the Mold Designer Training Path shown at right. Note that each class after SOLIDWORKS Essentials has at least one pre-requisite class, which is done to ensure students have the full range of knowledge and skills necessary to be successful in each subsequent class.



TECHNOLOGY CAN HELP

3D Interconnect

SOLIDWORKS 2017 introduced a technology called 3D Interconnect, which allows 3D models created in a number of CAD systems to be directly used in a SOLIDWORKS assembly. The native files are referenced associatively, so that if they are changed in their native CAD system, or are overwritten by new versions, SOLIDWORKS will detect the changes in the assembly and allow the user to update the models inside of the SOLIDWORKS assembly.

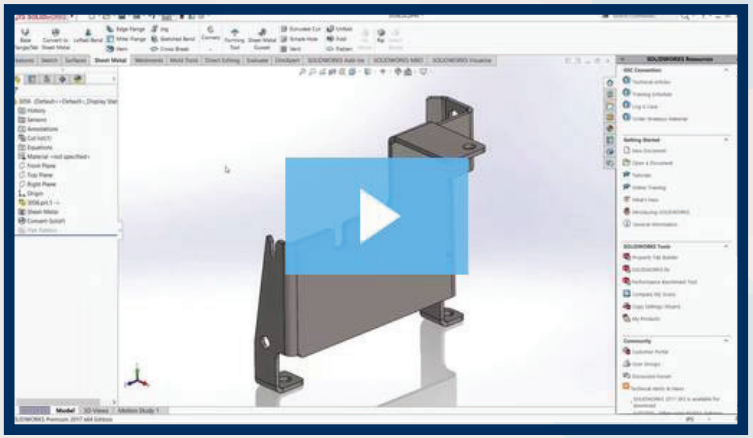
Additionally, users can use third-party native files as base parts for new SOLIDWORKS models, with the first feature in the SOLIDWORKS model referencing the native external file. This allows additional features to be added on top of the underlying geometry, which updates appropriately when the referenced file is changed in its native CAD system.

Moreover, the SOLIDWORKS user can break the link to the native CAD files should the need arise. This will do a file translation in-place, and the result will be a subassembly or part that is a native SOLIDWORKS file. In the case of a subassembly, the subassemblies and components will still reference the external native CAD files. In the case of a component, it will have a single “Imported1” feature and will no longer reference the original CAD file.

SOLIDWORKS 3D Interconnect: Seamless Collaboration Between CAD Platforms

See how 3D Interconnect allows you to use both neutral and native CAD data from various sources to unlock powerful new workflows. **Visit** bit.ly/3d-Interconnect

Using SOLIDWORKS 3D Interconnect With Sheet Metal Parts



The new 3D Interconnect functionality is useful when working with a variety of native non-SOLIDWORKS files, including parts that are sheet metal in nature. **Visit** bit.ly/3D-Interconnect-SM

DraftSight

DraftSight is a fully-functional 2D CAD tool, written in the spirit of popular 2D systems. It reads and writes DWG and DXF files natively, and allows for the viewing and editing legacy CAD files in those formats.

eDrawings

eDrawings is the viewer for SOLIDWORKS data, including 3D models, 2D drawings, electrical schematics, 3D PMI data, and simulation output. In addition to SOLIDWORKS formats, eDrawings can view 2D CALS files, 2D and 3D DWG/DXF files, as well as 3D models in PTC, Autodesk Inventor, CATIA V5/V6, STEP, IGES, STL, JT and other formats.

SOLIDWORKS PDM Professional

SOLIDWORKS PDM Professional is a product data management system capable of managing native CAD data in a variety of formats. Integrations with SOLIDWORKS, DraftSight, AutoCAD, Inventor, Creo, and Solid Edge are available, allowing users of multiple CAD platforms to work in the same data management environment. All users, regardless of their CAD tool, can participate in data management workflows, making the transition from a legacy CAD system to SOLIDWORKS a much smoother operation.

Elysium CADfeature

Elysium CADfeature is a third-party translation software that reads sketches, features, dimensions and other parametric relationships from one native CAD file format, and then re-builds that information in another native CAD file format. It is software that must be specifically set up for the task at hand and is licensed for specific file formats for specific periods of time. While it represents the state-of-the-art CAD translation technology, it is not completely automatic, does not translate 100% of all data, nor is it foolproof. CADfeature should be considered a tool to help in the migration process, but not a panacea.

GSC: YOUR TRUSTED PARTNER

A successful platform migration requires much more than just buying software; the implementation plan is critical to the success of the project. GSC has been migrating companies to SOLIDWORKS since 1995, and our methods have evolved from our vast experience. We partner with you to understand your business processes and work closely with you to develop a plan with clear goals and concrete deliverables. Along the way, we help you eliminate waste, increase efficiencies, and deliver maximum value on your software investment.

"Break Out of the Bubble" and open your world to the possibilities of SOLIDWORKS with the help of GSC's industry leading experts.

Get a Demo

ABOUT THE AUTHOR

Jeff Setzer, Technology Evangelist

Jeff is known as our resident SOLIDWORKS "evangelist." He loves showing customers new ways to use the software and complimentary tools to make their jobs easier.

Jeff has been working with SOLIDWORKS since its first release in 1995 and he has been with GSC from the beginning! He is a Certified SOLIDWORKS Professional, a Certified SOLIDWORKS Support Technician, a Certified SOLIDWORKS Instructor, a Certified Simulation Support Technician, and a Microsoft Certified Professional.

Jeff studied Cognitive Science and Artificial Intelligence at the University of Rochester, NY.

ABOUT GSC

GSC fuels customer success with 3D engineering solutions for design, simulation, data management, technical documentation, electrical engineering, machining, automation, and 3D printing, as well as the most comprehensive consulting, technical support, and training in the industry. As a leading provider of SOLIDWORKS solutions and Markforged and HP 3D printing technologies, GSC's world-class team of dedicated professionals have helped numerous companies innovate and increase productivity by leveraging advanced technologies to drive 3D business success. Founded in 1989, GSC is headquartered in Germantown, WI.

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