Top 10 Reasons Why More Engineers Are Choosing Pro/ENGINEER® Wildfire™ Over SolidWorks®

Investing in a 3D Mechanical CAD (MCAD) solution may be the most important decision of your career. It also may be the toughest. That's because most MCAD solutions—at first glance—look the same. But, just as you wouldn't judge a book by its cover, digging under the covers is what really differentiates Pro/ENGINEER Wildfire from all other MCAD solutions on the market.

The fact is, there are a number of significant differences between MCAD software systems–and the companies that make them. At the end of the day, those differences can make or break the success of your products.

Below you'll find the top 10 reasons why more engineers are choosing Pro/ENGINEER Wildfire over SolidWorks. Once you have a clear understanding of these critical differentiators, you'll find that making this important decision is easier than you thought.

"We evaluated many software solutions on the market today; PTC helped us the most with set-up and education for the implementation process. When we were in the selection process, PTC continued to win in every way. Many software companies even said they have the same features as PTC, with the same quality. But companies such as SolidWorks simply could not give us the speed we see in Pro/ENGINEER or the features and the customer service that we have received from PTC."

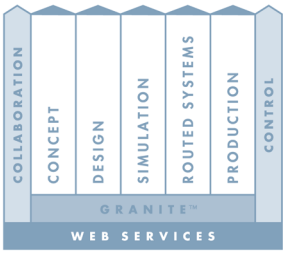
Robert Trépanier,
Senior Mechanical Designer for NRC
(National Research Council of Canada)

		Pro/ENGINEER Wildfire	SW
1	More Powerful and Mature Functionality in an Entry-Level Package	✓	—
2	More Complete Set of Tools – on a Single Native Architecture	✓	—
3	Advanced Surfacing Tools	✓	—
4	Large Assembly Management Tools	✓	—
5	Design Quality Assurance Tools – ModelCHECK™	✓	—
6	Inheritance Models – Advantage of a Single Native Architecture	✓	—
7	Geometry Constrained from the Outset	✓	—
8	Shrinkwrap™ – Sharing Intellectual Property with Partners and Suppliers	✓	—
9	Web Connectivity and Web-based Design Conferencing	✓	—
10	100% Focus on Product Development	✓	—

Reason No. 1
More Powerful and Mature Functionality in an Entry-Level Package

Pro/ENGINEER Wildfire offers more robust functionality at the same price as SolidWorks. Below are examples of functionality in Pro/ENGINEER Wildfire's entry-level system, Foundation Advantage package, that are not available in SolidWorks Office.

- Advanced Parametric Surfacing
- Advanced Import Data Repair Tools
- Mechanism Kinematics
- Shrinkwrap
- Integrated Reports
- Web Connectivity
- Free Project Collaboration Site
- Model Quality Verification



The entire Pro/ENGINEER suite is built on a single architecture so that modules interoperate and exchange data seamlessly.

Reason No. 2
More Complete Set of Tools — On a Single Native Architecture

Imagine buying a ratchet set that's missing a few sockets. Then imagine going to a different store to find each missing socket, some of which might be metric, some not. That's the strategy employed by some vendors in the MCAD marketplace. A better solution is to have a complete set of tools designed to work together, because they are built on a single native data architecture.

It's no secret that Pro/ENGINEER Wildfire delivers the broadest set of MCAD tools, offering deep functionality that's been continually enhanced during more than a decade of MCAD development. The entire Pro/ENGINEER suite was created by PTC, and is built on a single architecture. All modules interoperate and exchange data seamlessly. Chances are, if you're looking for a specific MCAD tool, you'll not only find it in the Pro/ENGINEER Wildfire family—there's a very good chance that PTC invented it.

The SolidWorks product development strategy is to establish partnerships with third-party application developers who provide the MCAD technology that's lacking in the SolidWorks solution set. In many instances, SolidWorks relies on third-party solution providers for much of the product development process coverage, from complex surfacing to routed systems. For example, Solidworks offers no embedded MCAD tools for production, whether for process planning or NC programming, effectively isolating the design office from the other participants in the product development process.

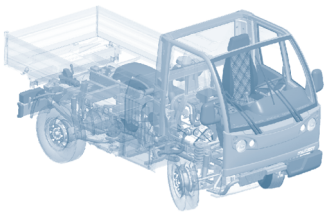
At the end of the day, you want an integrated solution—not a solution that needs integrating.

Reason No. 3
Advanced Surfacing Tools

Some product designs are so unique—so cool—you wonder how the idea ever evolved. Chances are, the designers had the advantage of using Advanced Surfacing tools. Unlike ordinary surfacing that limits your range of creativity, Advanced Surfacing gives you the freedom to create virtually any shape or design you can imagine, without having to compromise aesthetics. Because in today's world, aesthetics matter for product differentiation, and achieving customer satisfaction with the right look and feel.

Whether the shape requires a conic surface, boundary blend, or any other surface type, Pro/ENGINEER Wildfire offers the Advanced Surfacing tools to create the most complex shapes, easily. The advantage can be seen in many exceptional products designed with Pro/ENGINEER Wildfire, from the Segway® human transporter, to the Fossil® wristwatch PDA, to the Harley-Davidson® V-Rod.

SolidWorks forces users to go through complex workarounds, building up shapes with primitive class surface types. With this limited range of capabilities, it's virtually impossible to achieve similar results as with the surfacing tools in Pro/ENGINEER Wildfire.



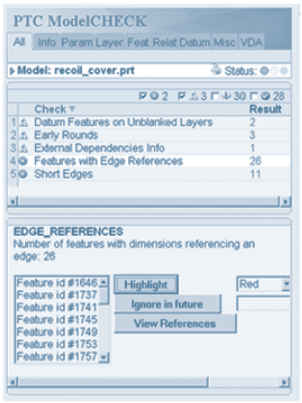
Creating winning products today requires a full set of intuitive MCAD tools that deliver the power and performance to get the job done—without sacrificing part, product, or process.

Reason No. 4
Large Assembly Management Tools

If you're involved in managing the design of large assemblies, you know how important it is to precisely control every component, on every level, with every iteration of the design. In short, the better the assembly is managed, the faster the changes can be propagated and the product can get to market sooner.

Don't be fooled into thinking that just because an MCAD system has the ability to manage the graphics of a large assembly that it has large assembly management tools. In addition to the most advanced graphic management tools on the market, Pro/ENGINEER Wildfire also has advanced tools for creating and managing assemblies of any size, including top-down design tools, skeleton models, assembly management tools, and many others. There simply isn't any other solution on the market that comes close to Pro/ENGINEER Wildfire for managing complex and large assemblies, which is why many leading manufacturers, like Ferrari and Boeing, trust Pro/ENGINEER for their product development.

Top-down design tools such as skeleton models are not available in SolidWorks. Instead, the Solidworks large assembly management application is a very structured, rigid process that forces users to work through time consuming and complex work-arounds to manage large assemblies.



Identify production problems early in the development cycle with PTC's unique ModelCHECK tool

Reason No. 5

Design Quality Assurance Tools – ModelCHECK

Imagine a quality assurance (QA) tool that continually checks the quality of your model as you are designing it, and monitors how closely models adhere to company and industry standards. PTC has such a tool—ModelCHECK—a unique QA solution that dramatically speeds product design and ensures model quality and consistency throughout the design phase.

ModelCHECK evaluates parts, drawings and assemblies, and recommends proper Pro/ENGINEER Wildfire modeling techniques. Within seconds after every regeneration and 'save', ModelCHECK analyzes the model and provides users with online, expert modeling advice on how problems can be avoided and corrected. The time, effort, and money saved is truly remarkable, as well as contributing significantly to your company's ongoing quality initiatives, such as ISO certification.

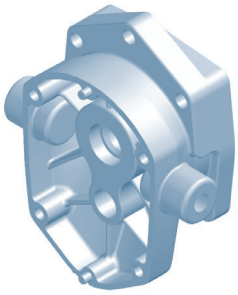
Conversely, SolidWorks offers no design model QA software, which means that users have no automatic way of checking quality, or the ability to help ensure that designs meet corporate and industry standards.

Reason No. 6

Inheritance Models – Advantage of a Single Native Architecture

Think of how much time and effort could be saved if everyone involved in the product development process—design, casting, FEA, machining, etc.—could work independently with their own process-specific variant of a model, and changes to the master model would automatically propagate to the variants. With Pro/ENGINEER Wildfire "Inheritance Features", that's exactly the case. This is done with no loss of associativity with the original design, ensuring any subsequent changes are seamlessly propagated. The result is a smoother, yet flexible product development process.

SolidWorks does not offer users the ability to have variants of a model (e.g. one for casting, one for FEA, one for machining, etc.) saved as part of the design model. What this means is that a user needs to do a "Save As" and manually edit each model to fit the requirements of the process area. However, as changes are made to the design model, the individuals using the design in these downstream applications must be notified, and their variants need to update accordingly. Therein lies the challenge. How can analysts and manufacturing engineers make independent changes to a design, without affecting the design everywhere else that it is used, and still be assured that changes to the master design will be propagated accurately? With SolidWorks they can't.



Pro/ENGINEER Wildfire models always contain all the manufacturing data and vital information needed.

Reason No. 7.

Geometry Constrained from the Outset

If you're new to 3D MCAD, "constrained geometry" means that your MCAD software application automatically defines and constrains your model dimensions—right from the outset. As you begin modeling, you'll notice dimensions attached to your model design, parameters that update and adjust as you make modifications to the model. Without the ability to constrain sketches up front, you're almost assured of running into significant geometry problems down the road.

Pro/ENGINEER Wildfire is the only solution that defines and constrains model dimensions from the get-go, which means that your models always contain all the manufacturing data and vital information needed i.e. the dimensions of the model can never be overlooked. This also means that later on as the design develops, modification is easier and more reliable as all the data automatically is carried with the part from the outset. If you're moving from 2D to 3D, constrained sketching is an absolute 'must'.

SolidWorks software, on the other hand, does not automatically fully constrain a sketch when you begin modeling. As a result, users can be left with a model that not only encounters problems later in the design process due to unintentionally missed dimensions, but also cannot be easily corrected.

Reason No. 8

Shrinkwrap – Sharing Intellectual Property with Partners and Suppliers

When you are working with large or complex assemblies, you often want to quickly share the outer shape of your design with a supplier or partner who needs the design to complete an assigned task. Yet, for a number of reasons—i.e., massive file size or protection of intellectual property (IP)—you prefer to email only the critical geometry and not the entire assembly. For example, to supply an engine to a tractor manufacturer, you only need to provide them with the outer shape of the engine (so the tractor can be designed to avoid interference),

the mounting locations, the water and fuel line hookup points, and the mass and center of gravity data—they don't need to understand how the engine works.

PTC has created a unique solution called Model Shrinkwrap. Pro/ENGINEER Wildfire converts your model into a lightweight (small byte size) file that can be easily e-mailed anywhere. With a "shrink-wrapped" file, your partners have what they need to complete their job, and you can relax knowing that your IP is 100% secure since no internal geometry is revealed. Best of all, your partners can import this lightweight file directly into Pro/ENGINEER and complete their part of the project or assembly.

Although SolidWorks offers e-drawings, which enable partners to e-mail and then view models, it does not offer the ability to create model "Shrinkwraps" that can be imported into their MCAD package for additional work by design partners.

Engage Peer-to-Peer connectivity and invite whole teams into interactive design sessions.

Reason No. 9
Web Connectivity and Web-based Design Conferencing

How can you efficiently produce quality products in an environment where your product development team is working from all corners of the globe? Easy. Provide your team with instant Web access to people, data, and applications—directly from their MCAD desktop; then create virtual Web workspaces where design teams can access real-time design and collaboration tools.

Pro/ENGINEER Wildfire is designed from the ground up to support Web services. This means users can instantly connect to everything the Web has to offer—without having to leave Pro/ENGINEER Wildfire. Moreover, with Groove® Networks P2P technology built into its core, Pro/E Wildfire enables design teams to work together in Web-based, real-time design conferences, as if they were sitting in the same room.

Unlike Pro/E Wildfire, SolidWorks does not integrate directly with the Web, which means users are forced to open and close applications to find and incorporate data residing in remote servers and locations. Plus it offers no built-in capability for real-time, peer-to-peer design conferencing that can be safely used in a secure environment for your data. In fact, SolidWorks relies on a tool created specifically for simple word processor documents or spreadsheet data, an environment that is simply not designed for the high resolution graphics of a modern 3D MCAD tool.

Reason No.10
100% Focus on Product Development

Purchasing a solution to support your product development process is more than buying software. It's investing in a long-term relationship with a solution partner who is committed to your future.

As the largest software company with a total commitment to product development, PTC is entirely focused on creating innovative solutions that will help our customers win. Not only does PTC offer the broadest set of MCAD solutions, but we're the first company to combine our MCAD solutions (Pro/ENGINEER Wildfire) with our Product Data Management tools (i.e. Windchill) into the industry's first integrated PLM (Product Lifecycle Management) Product Development System, making PLM an affordable, easy-to-deploy and low-risk initiative.

Unlike PTC, SolidWorks offers no clear path from MCAD to a complete product lifecycle management solution. Instead, the company encourages its customers who are seeking broader PLM solutions to utilize a completely different set of tools for MCAD and PLM (i.e. Catia®, Enovia®, and Delmia®). To date, SolidWorks does not provide a solution for customers to scale to a broader solution, compromising your ability to meet future product development challenges.

The Choice Is Clear: More Engineers Really Are Choosing Pro/ENGINEER Over SolidWorks

Pro/ENGINEER is the industry standard MCAD solution, used by more than 275,000 engineers at 33,000 successful companies across the globe. In addition, there are over 2,000,000 PTC academic users around the world. Comparatively, SolidWorks commonly states it has 250,000 licenses, only 120,000 of which are commercial users. Certain facts just speak for themselves.