

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

Experts say, if you're in the market for a 3D CAD solution—one that will help you get exceptional products to market faster—you should choose a solution based on three key attributes: ease, power, and connectivity.

PTC's Pro/ENGINEER® and Autodesk's Inventor® both have one of those attributes in common. They're both very easy. And that's where the similarity ends. While Pro/ENGINEER is legendary for its amazing power, Inventor is clearly lacking in the functionality and connectivity product development teams need to be successful today. Inventor could best be described as a four-cylinder sports car: nice looking on the outside, but when you bring it out on the open road, steer clear of the passing lane—and stay close to the exit ramp, since it won't be going the distance.

Don't get the wrong idea. Inventor does have a place in the market for designers who need very basic CAD functionality, and who work in isolation. Today, however, many designers need a toolset with the power to easily handle any road they choose, and to connect instantly with teammates across the planet. These are areas where Pro/ENGINEER excels.

Below are some of the many reasons why engineers are choosing Pro/ENGINEER over Inventor—and why Inventor users are switching over to Pro/ENGINEER. Once you compare products, you'll see why Pro/ENGINEER is the choice of 33,000 manufacturers and more than 300,000 professionals worldwide.

	Pro/ENGINEER Wildfire	INV.
1 More Powerful, Mature Functionality in an Affordable Entry-Level Package	<input checked="" type="checkbox"/>	—
2 More Complete Set of Tools – On a Single Native Architecture	<input checked="" type="checkbox"/>	—
3 Geometry Constrained from the Outset	<input checked="" type="checkbox"/>	—
4 AutobuildZ – Much More Than a 2D-to-3D Conversion Tool	<input checked="" type="checkbox"/>	—
5 Advanced Surfacing Tools	<input checked="" type="checkbox"/>	—
6 Large Assembly Management Tools	<input checked="" type="checkbox"/>	—
7 Design Quality Assurance Tools – ModelCHECK™	<input checked="" type="checkbox"/>	—
8 Powerful Connections to Third-Party CAD Data	<input checked="" type="checkbox"/>	—
9 Web Connectivity and Web-based Design Conferencing	<input checked="" type="checkbox"/>	—
10 Room to Expand into a Complete Product Development System	<input checked="" type="checkbox"/>	—

Reason No. 1: More Powerful, Mature Functionality in an Affordable Entry-Level Package

Pro/ENGINEER Wildfire offers significantly more robust functionality than Inventor—at the same price or less. Below are just a few features in the Pro/ENGINEER Wildfire™ entry-level system—the Foundation Advantage package—not available in the comparable Inventor package.

- Advanced Parametric Surfacing—Design what you imagine
- “Warping”—Modify surfaces instantly
- Shrinkwrap™—Share intellectual property with partners
- Integrated Reports
- Built-in Web browser—Link to Web directly from Pro/ENGINEER



One of the key reasons 2D users choose Pro/ENGINEER 3D solutions over Inventor is that, using Inventor's sparse toolset, it isn't long before users hit a solid wall. And unlike other MCAD vendors who partner with third-party companies for the technology lacking in their package, Inventor simply doesn't offer the tools – third-party or otherwise.



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

- Pro/COLLABORATE™—Free project collaboration Website
- Import Data Doctor™—Repair data effortlessly
- Real-time Photorendering—Create amazing, realistic renderings
- ModelCHECK™—Ensure model quality and compliance
- AutobuildZ™—Optimize model during 2D to 3D conversion

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

One of the key reasons 2D users choose Pro/ENGINEER 3D solutions over Inventor is that, using Inventor's sparse toolset, it isn't long before users hit a solid wall. And unlike other MCAD vendors, such as SolidWorks, who partner with third-party companies for the technology lacking in their package, Inventor simply doesn't offer the tools—third-party or otherwise.

Conversely, Pro/ENGINEER Wildfire delivers the broadest set of MCAD tools with the deepest functionality on the market, tools that have been continually advanced during more than a decade of MCAD development. Considering the investment and effort required to build such advanced solutions, one can see why the competition would rather not try to match the Pro/E Wildfire technology.

Best of all, the Pro/ENGINEER solution set is 100% integrated; all modules interoperate and exchange data seamlessly. And chances are, if you're looking for a specific 3D CAD tool, you'll not only find it in the Pro/ENGINEER Wildfire family—there's a very good chance that PTC invented it.

At the end of the day, you want tools that can set your imagination free, and Pro/ENGINEER Wildfire alone has the complete set.

Reason No. 3: Geometry Constrained from the Outset

If you're new to 3D MCAD, "constrained geometry" means your MCAD software application automatically defines and constrains your model dimensions—right from the outset. As you begin modeling in Pro/ENGINEER, you'll notice dimensions attached to your model design, parameters that update and adjust as you modify 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 your models always contain all the manufacturing data and vital information needed. Thus, the dimensions of the model do not get overlooked. As the design develops, making changes is easier and more reliable, as all the data is automatically carried forward with the part from the outset. Bottom line: if you're moving from 2D to 3D, constrained sketching is an absolute 'must.'

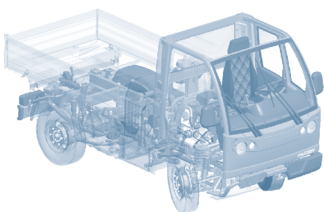
Inventor software, on the other hand, does not provide an automatic way to fully constrain a sketch when you begin modeling. As a result, you can be left with a model that can encounter problems later in the design process due to unintentionally missed dimensions, issues that cannot easily be corrected.

Reason No. 4: AutobuildZ—Much More Than a 2D-to-3D Conversion Tool

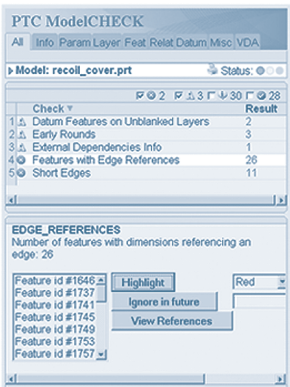
If you're moving from 2D to 3D, you probably have concerns about converting your 2D legacy data. Not to worry. PTC created a uniquely powerful solution called AutobuildZ that makes it very easy to bring your 2D data into a Pro/ENGINEER system and use it immediately—without manual rework or data translation.

It's this easy: First, you select the appropriate geometry from your 2D drawings to be used in your 3D model. From there, the AutobuildZ tool automatically creates the corresponding 3D features! It's an amazing time-saver. But there's more. At the same time your data is being converted, AutobuildZ provides you with basic training on how to use a 3D system. Even better, you can quickly reverse the process and create 2D drawings from your 3D models. And, unlike the Inventor 'black-box' wizard that prevents you from viewing data during the 2D to 3D conversion process, AutobuildZ lets you check—even modify—your work as it's being converted, so you can optimize your model quality in real-time.

True, Autodesk's Inventor does offer a range of options for migrating data from your legacy 2D Autodesk system. And, like Pro/ENGINEER, you even get wizards to perform layer conversion, font migrations, etc. However, merely converting 2D data from your 2D system into 2D data in your new 3D system won't deliver the benefits



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.



You can identify production problems early in the development cycle with PTC's unique ModelCHECK tools.

of 3D, which is why you purchased a 3D system in the first place. To get the most value from your legacy 2D data, it has to be converted into solid, high quality, parametric 3D data. PTC's AutobuildZ takes you well beyond simple translation of the DWG or DXF file. While Inventor takes you half way there, AutobuildZ in Pro/ENGINEER Wildfire goes the distance, making the transition and conversion of your 2D data into useful 3D data.

AutoBuildZ. Yet another reason why Pro/ENGINEER outperforms Inventor...time and again.

Reason No. 5: Advanced Surfacing Tools

When you admire the sleek curves of a Harley-Davidson V-Rod, you can't help wondering how the designers made it happen. They had a design advantage called Pro/ENGINEER Advanced Surfacing.

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 compromising on aesthetics. Because, in today's world, aesthetics truly matter for product differentiation and for achieving the 'look and feel' that pleases customers.

Whether a 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. On the flip side, Inventor offers a very limited subset of even the most basic surface types, thus forcing users to compromise on the aesthetics of their design.

Reason No. 6: 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 each iteration of the design. The rule of thumb in 3D is, the better the assembly is managed, the faster the changes can be propagated, and the quicker the product can get to market.

Many engineers are under the misperception that because an MCAD system is able to manage the graphics of a large assembly that it has 'large assembly management' tools. That's true for Pro/ENGINEER, not so for Inventor.

In addition to having 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. That's why many leading manufacturers, like Lockheed and Volkswagen, trust Pro/ENGINEER for their product development.

Unlike Pro/ENGINEER, Inventor offers no top-down design tools such as skeleton models, leaving users to labor through long-winded and complex work-arounds when creating large or complex assemblies.

Reason No. 7: Design Quality Assurance Tools – ModelCHECK™

Imagine a quality assurance 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.

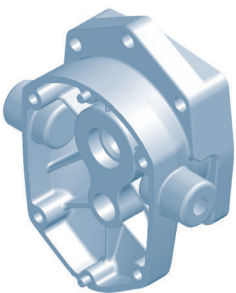
PTC has such a tool—ModelCHECK—a unique QA solution that dramatically speeds product design and ensures model quality and consistency throughout the design phase.

ModelCHECK evaluates parts, drawings and assemblies, and recommends proper modeling techniques. Within seconds after each model 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 are truly remarkable. ModelCHECK contributes significantly to your company's ongoing quality initiatives such as ISO certification. Conversely, Inventor offers no design model QA software, which means users have no automatic way of checking quality, or ensuring that designs meet corporate and industry standards. Advantage: Pro/ENGINEER.

Reason No. 8: Powerful Connections to Third-Party CAD Data

Another legitimate concern 2D designers have when moving up to 3D is the compatibility of data from other types of systems. With Pro/ENGINEER—problem solved.

Pro/ENGINEER includes native translators for AutoCAD® and DXF/DWG files. It supports a full range of industry standards, including STEP, IGES, CGM, VDA, SET, VRML, and JPEG files. In addition, Pro/ENGINEER offers direct translators to CATIA®, Parasolid®, ACIS®, MEDUSA®, STHENO/Pro™, CADD5®, and CADAM®.



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

Inventor, on the other hand, restricts your ability to connect with other users/organizations in the Product Development Process, for example, other members of a supply chain. You're limited to connecting to design data either from legacy Autodesk software, or from companies willing to risk the integrity of their 3D data to the potential hazards of STEP or IGES transfers.

Pro/ENGINEER supports a broad range of data translation formats, both native and neutral, so you can connect directly to many areas of the design 'community,' as well as to anyone in your supply chain, from OEM (using Pro/ENGINEER, CATIA, etc.) to moldmaker (using Pro/ENGINEER, AutoCAD, Unigraphics, etc.).

Also, because of PTC's unique, patented, ATB-based (Associative Topology Bus) solution, PTC offers this enterprise-wide connection with an association back to the originating data. For the first time, design transfer is a real part of a concurrent engineering environment and all things needed in the modern, heterogeneous CAD world. Autodesk Inventor simply doesn't offer this type of solution.



With Peer-to-Peer connectivity, you can invite entire teams into interactive design sessions.

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

How can you efficiently produce quality products today when your product development team is working from all corners of the globe? Easy. Provide everyone 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 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 (peer-to-peer) technology built into its core, Pro/E Wildfire provides an option for 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, Inventor doesn't 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.

Reason No. 10: Room to Expand into a Complete Product Development System

Purchasing a 3D solution to support your product development process involves 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 (Windchill) into the industry's first integrated PLM (Product Lifecycle Management) Product Development System, making PLM an affordable, easy-to-deploy, low-risk initiative.

Unlike PTC, Autodesk offers no clear path for its customers to migrate from its basic MCAD software to a complete product lifecycle management solution. Not only are there limitations to the Autodesk Inventor product, but Autodesk's offerings for data management and collaboration are similarly limited. In fact, Autodesk readily admits that its data management tool, Autodesk Vault, is "built for the small design team... of one to ten users." This limitation in the number of users creates an obvious wall that limits the flexibility companies need to expand their solution to meet future growth needs.

The Autodesk Vault also offers no real solutions for users who need to manage the Product Development Process. Even very basic functionality, such as controlling the release status of a design or ensuring that only certain users are able to make changes, are simply not available in Autodesk's Vault. Only PTC offers a simple, powerful, connected solution that's easily expanded into a complete Product Development System, a system that delivers the create, collaborate, control functionality companies need to win.

Copyright © 2003, Parametric Technology Corporation (PTC)—All rights reserved. Information described herein is furnished for informational use only, is subject to change without notice, and should not be construed as a guarantee, commitment, condition or offer by PTC. PTC, The Product Development Company, Pro/ENGINEER, Wildfire, Windchill, AutoBuildZ, ModelCHECK, CADDs, and all PTC product names and logos are trademarks or registered trademarks of PTC in the United States and in other countries. Inventor and AutoCAD are registered trademarks of Autodesk, Inc.; Parasolid and Unigraphics are trademarks or registered trademarks of Electronic Data Systems Corporation; CATIA and CADAM are registered trademarks of Dassault Systemes, S.A.; SolidWorks is a registered trademark of SolidWorks Corporation; and MEDUSA and STHENO are trademarks of CAD Schroer GmbH.