



Five things you should know about 3D CAD software

Feature Article

Formerly Pro/ENGINEER®

You may be spending most of your time making design changes instead of creating new designs. But with the right 3D CAD software, you can solve this problem—and quite a few others.

If you're a design engineer working in a "typical" manufacturing company, you may be spending 60% to 80 % of your time updating and optimizing old designs, or making changes for ECOs, instead of creating new designs. Industry-wide studies and PTC surveys confirm this startling fact.

With such a significant portion of your day devoted to design changes, you need a 3D CAD system that simplifies and speeds the change process.

But this is just one of many challenges design engineers can solve by using more advanced 3D CAD software. Here are five essential characteristics of a best-in-class 3D CAD system and how it will enable you to focus on what you do best: design great products.

1. "Easy to use" doesn't have to mean "dumbed down"

It used to be that "easy" CAD software meant functionally-limited CAD software. But today's CAD software offers functionality far beyond what many thought possible 10 or 20 years ago. Making today's 3D CAD software easy to use, yet functionality-rich, is a challenge that few CAD software vendors can accomplish. But the best software will feature both familiar command conventions for new users, and thin menu structures for seasoned power users who want to work fast.

Solution: easy and powerful

Your 3D CAD software should give you "deep" functionality that is simple to access and manage. For example, the software should let you design weldments—welded joints—into your model, and then automatically add the weldment information to your design documentation and downstream structural analysis.



2. 3D CAD designs should be both robust and portable

Today's intelligent CAD software should make it easier—not harder—to reuse designs. It does this by capturing information about the model as you work, and then using that information to make reuse easier. It should simplify the process of accessing older design data with newer versions of the software.

Solution: robust, yet portable designs

Look for CAD software that lets you capture information about brackets, fasteners, or other component interfaces that you've designed into your assembly, and then offers them to you in subsequent projects with similar components and assemblies. More advanced CAD software lets you write annotations directly onto your 3D model, therefore making your design intent clear to future users of your model, even though they're using newer versions of the software.

3. CAD software shouldn't make changes hard to deal with

Change is a fact of life, and changes to CAD models can, and do, occur throughout the design cycle. The key to avoiding wasted time is to manage change by managing your CAD data effectively. Doing this requires visibility into data file structures, and having reliable mechanisms for automating design updates.

Solution: "controlled" changes

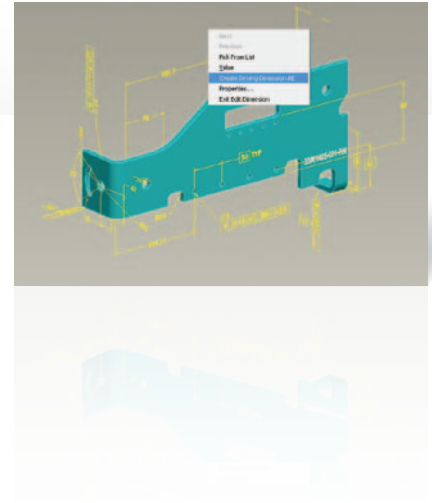
Today's powerful 3D CAD software packages give you tools for examining your data hierarchies, and let you be selective in specifying automated updates. This way, you can easily turn off associativity, for instance, to keep a change local, and avoid updating other models.

4. You shouldn't have to hit a functionality ceiling

3D CAD software should put a full set of design tools in your hands, regardless of whether you're making plastic toys or racecar engine blocks. But if you're forced to stop and step outside your application for help either with analysis, or manufacturing constraints, or other issues, you not only waste time and potentially introduce data translation errors, but you stifle the creativity that's the catalyst for your work.

Solution: uncompromised design

The ideal 3D CAD software integrates a robust geometry kernel with a complete repertoire of design and analysis applications—all accessible within the original CAD application.



5. Maintenance shouldn't break the bank

For 3D CAD software, maintenance should mean more than adding security patches. It should include installing new applications, upgrading to new versions, migrating to PLM systems, and even integrating with business planning and financial processes. And maintenance can't be kept a low priority, because your CAD software is directly responsible for the quality and competitive differentiation of your products.

Solution: complete maintenance support

High-quality CAD software simplifies installations by permitting web-based downloading, and eases new integration with powerful tools for migrating to more complex applications and systems.

Creo™ Elements/Pro™: simple, powerful, connected

By building-in robust functionality and making it accessible to everyone on your team, Creo Elements/Pro streamlines the product design lifecycle without limiting your design capabilities, or slowing you down. Creo Elements/Pro is the only no-compromise solution—that means you get all the power and industry-leading functionality, without giving up ease-of-use. It's simple and powerful at the same time, yet it helps your design engineers stay connected—to their ideas and to the design processes that can turn ideas into reality."



Copyright 2010, 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 PTC Logo, Creo, Elements/Direct, Elements/Pro, Elements/View, Unlock Potential, Think. Create. Believe. and all PTC product names and logos are trademarks or registered trademarks of PTC and/or its subsidiaries in the United States and in other countries. All other product or company names are property of their respective owners. The timing of any product release, including any features or functionality, is subject to change at PTC's discretion.

3966B-FA Five Things-TS-EN-1010