

PTC Uses Its Own PLM Solutions to Increase Productivity and Accelerate Time-to-Market

How the PTC Product Development System (PDS) Helps 'The Product Development Company' Work Faster and Smarter

PTC, Inc. Needham, MA

PTC is a world leading provider of Product Lifecycle Management (PLM) software solutions and related services, and today serves more than 50,000 customers worldwide.

In 1985, PTC revolutionized the product design landscape by introducing Pro/ENGINEER®, the first parametric, feature-based, fully associative CAD/CAM/CAE software, now the de-facto standard worldwide. Today, PTC offers the industry's first comprehensive Product Development System, a complete PLM solution encompassing every facet of product development, from 3D product design, to global project management, enterprise data management, and XML-based dynamic publishing.

Challenge: Optimize Product Development and Publication Processes

PTC faces the same challenges as its customers: keeping up with rapidly changing technology, managing a growing portfolio of products, integrating newly acquired businesses, and globalizing its resources. While today's business environment creates new opportunities for PTC, it also creates new complexities in designing, developing and servicing the company's many software products. For instance, in 2007 alone, PTC had over 80 product releases. This includes new versions, new products and maintenance updates. PTC realized that it needed to optimize its business processes, so it could effectively manage both the increasing number of products and services, and the complexity of a global software development lifecycle.

Solution: PTC's PDS with Windchill® and Arbortext® Software

To better manage the many stages of the software development process, PTC decided to implement a number of its own product development solutions. Today, PTC uses Windchill as the central repository for all software development specifications, plans and activities. Using Windchill, PTC has completely automated its Change Control Management (CCM) process. Product documentation, as well as PTC University course materials, are now developed and distributed using PTC's Arbortext product suite. Other PTC groups, such as Technical Support and Sales Operations, are now using the authoring, collaboration, content and process management, and communication capabilities of Windchill and Arbortext.



Product development at PTC involves thousands of personnel collaborating from offices located around the world.

Results: Reduced Development Time and Improved Productivity

PTC products have helped the company save significant time, resources and expenses throughout the software product development process. For example, the costs of PTC's Technical Publication process has been reduced 30%, while productivity has doubled. Just like its customers, PTC is using the PTC Product Development System to realize more value from its own product development organization. As PTC continues to expand its own use of Windchill and Arbortext, it expects to see additional improvements in productivity and cost-effectiveness.

PTC's implementation of its own Product Development System (PDS) is one of the largest installations of PTC software in the world. The PDS is being used globally and securely not only by PTC employees, but also by its partners, customers and key prospects. Currently, the PDS contains:

- 40,000 Named Users
- 8,000 Unique Visitors per Month
- 20,000 Projects
- 1.1 Million Files

Expanded Workforce and Requirements

PTC faces the same challenges as its customers in improving productivity, efficiency and time-to-market. Just ten years ago, most of PTC's R&D organization was located at PTC headquarters in Needham, Massachusetts. Since that time, through acquisitions and globalization, PTC has grown dramatically, both in size and number of locations. This growth has put a strain on existing processes that relied mainly on personal meetings and emails.

The documentation group was also being strained by the demand for more kinds of printed and online material, as well as new capabilities like full-text search. Also, the customer training group found itself inundated with requests for additional courses and tailored curriculums. Existing processes and technology could not keep up with this expansion.

Improving Program Management Productivity

As a major software company, PTC now has a sizeable product development organization that includes more than 1600 personnel, of which approximately 1400 are directly involved in software engineering and quality assurance. Because PTC was an early adopter of global product development, many PTC software developers now work at sites around the world including India, China and Israel. With such a large group of inter-connected personnel dispersed across the world, ensuring that everyone is up-to-date with the correct information proved to be a challenge. Fortunately, PTC found a solution in house with Windchill, its platform for enterprise data management.

Today, individual development teams, as well as cross-functional groups, use Windchill to share working documents among many departments, including Quality Assurance, product management and translation/localization. Windchill manages the review and approval process for functional specifications and test plans by routing documents to the necessary participants for approval. The PTC localization team now manages its work with translation vendors by using Windchill to track requests and schedules as well as submitting actual content. Windchill is critical to helping PTC improve its program management process to effectively utilize and coordinate its global set of resources.

Accelerating Change Management

For PTC, having a dispersed work environment develop best-of-breed products that all work well together can make product development processes, such as change management, very challenging. For instance, after a change request has been documented, managing the approval process can involve endless emails, first to notify the appropriate people, and then to remind them to complete the process. Today, Windchill automates the entire Change Management process for PTC.

Now, after a change request is submitted, Windchill automatically determines and routes the request to the applicable parties for impact assessment. Windchill also generates a PDF file that accompanies the change request, making it easier for all involved to visualize and analyze the proposed change. Once all groups have submitted their impact statements, the approval is routed to the appropriate approval board. While most changes are sent to product management for approval, any changes that might have a significant impact are routed to an executive level committee.

Using Windchill to automate the Change Management process has enabled PTC to reduce the time involved in creating, managing and completing the change process. Windchill also allows managers, at any time, to quickly see the status of change requests and reassign tasks, if necessary.

Streamlining the Development of Technical Publications

The product documentation group at PTC is required to develop hundreds of manuals, as well as online help material, for both users and administrators of our software solutions. In addition, some of this material must be translated into multiple languages. As a result, any increase in the number of manuals typically means an equivalent rise in workload and resources. Also complicating matters is that different publishing tools are usually necessary to produce printed, versus online, material.

PTC's publications groups found a solution in the company's Arbortext software, which it now uses to develop and distribute all product documentation. Because PTC's documentation is designed to serve a particular user's role in product development, there's a significant amount of duplicate material in manuals. By using Arbortext, up to 70% of the content can now be reused in multiple documents—a significant time-saver when developing multiple manuals.

Today, common templates are used to ensure that all PTC documentation groups—both existing and newly acquired—are applying a consistent look and feel to PTC documentation. In addition, all publication groups use Arbortext to provide customers with full text search capabilities and integrated online help.

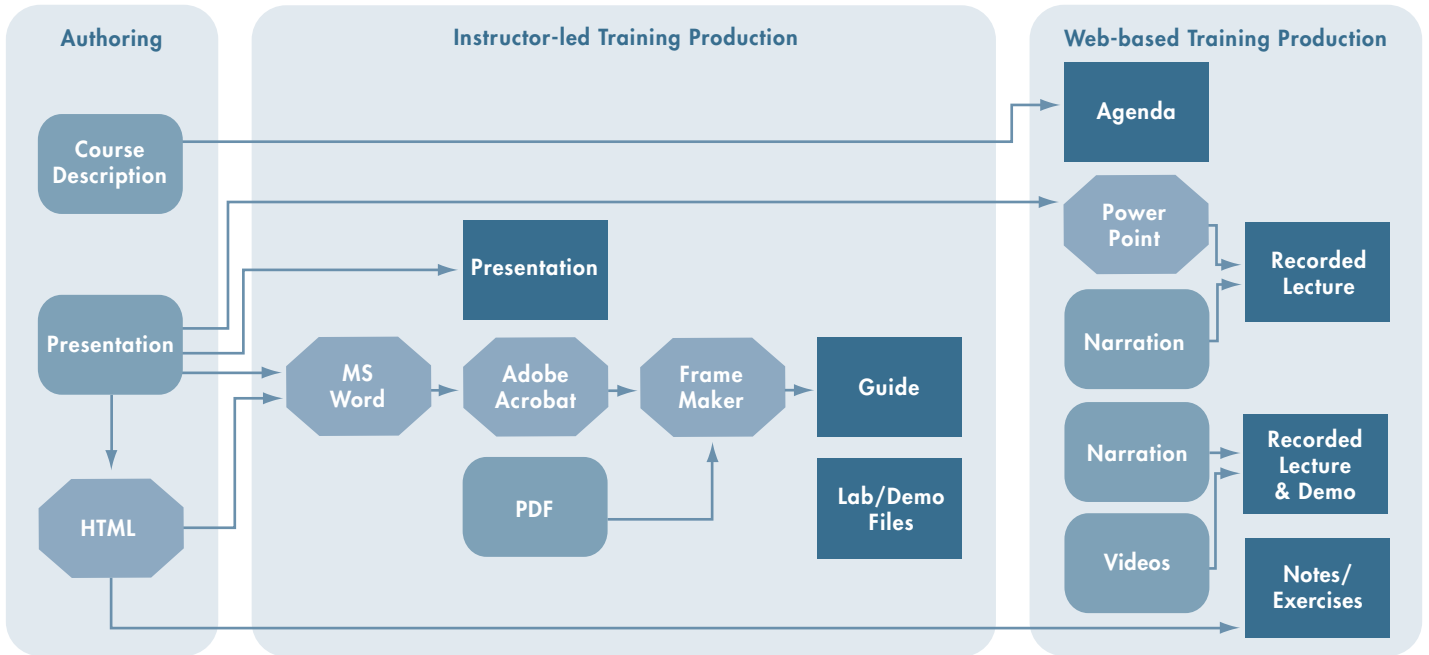
Arbortext has greatly improved productivity, such that in the time it once took to create one manual, the documentation group can now produce an entire set of related manuals. The PTC documentation group is now delivering more manuals—on time and with higher quality—without increased headcount.

Automating the Training Publication Process

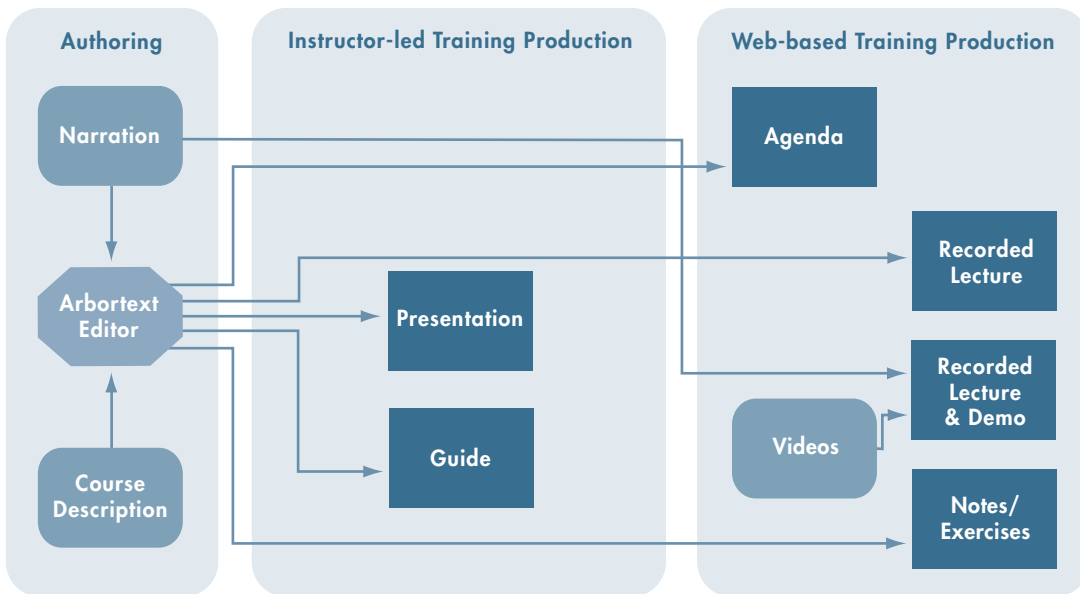
The PTC University Training Development group has a complex set of deliverables: student course material, teacher presentations, lab/demo exercises, and related Web-based classes need to be created for each individual topic in nine different languages. Thus, one small change can cause a ripple effect that affects many different items. Adding to the complexity: the work is done by a virtual team scattered around the world.

Fortunately, the entire development process—from initial course outlines to downloading material to instructors—is managed by Arbortext and Windchill. Just as with PTC's product documentation, courses are developed in Arbortext, so that common content can be reused across both multiple classes and multiple media formats. In addition, Windchill manages the class content structure, which can be quite complex, as courses are created and managed by topic or sub-module, and a single course may contain up to 200 individually created topics.

PREVIOUS PTC UNIVERSITY DEVELOPMENT PROCESS



ARBORTEXT-BASED PTC UNIVERSITY DEVELOPMENT PROCESS



While this course structure allows PTC to minimize the amount of material that needs to be updated for a new release, it increases the complexity of assembling a course. How can one be sure that they are using the latest version of all 200 topics? Having Windchill manage these structures eliminates this concern. With Windchill, authors, translators, printing vendors and instructors all use the software's secure control and collaboration capabilities to ensure that the most up-to-date material is being utilized. The ability to automatically manage training material content, as well as drive workflows and collaboration activities, has reduced the time-to-market for a new PTC University course.

Expediting Service Program Management

PTC Technical Support works with customers around the world to answer their product questions and to resolve issues they encounter. Sometimes, to resolve an issue, Technical Support needs to replicate the problem at PTC using actual customer data. The roadblock: how can this be accomplished if the problem involves very large data sets, or if the information contains valuable customer intellectual property (IP)?

Since many email and FTP sites have severe file-size restrictions, customers may be faced with having to burn the relevant datasets onto CDs and then ship them to PTC for analysis. Today using Windchill, a PTC Technical Support engineer can immediately get the information they need by easily creating an online, Web-based project and inviting the customer to the project via their email. The customer then uploads the data directly to the Windchill project for analysis. Technical Support can then use Windchill to invite R&D specialists from around the world to jointly collaborate on the problem and quickly resolve the issue. Since only people who were invited to the project can view the data, valuable customer information remains secure. With the Windchill solution, PTC Technical Support has been able to improve resolution time of complex customer issues.

“With a project team scattered around the world, and an increasing number of deliverables, we couldn’t do what’s required of us without PTC products.”

- Spencer Cutting, VP of Education Development, PTC



To learn more about how Windchill can optimize your product development and publication processes, please visit our website at: <http://www.single-sourcing.com/>

Improving Proposal Response Efficiency

A large, global company such as PTC is constantly generating proposals detailing the products and services that PTC believes will best meet a customer's requirements. Not only is PTC itself developing proposals, but the company is also assisting its many partners in responding to their own customer requests. Although many proposals contain similar questions and answers, each proposal has to be created individually, since there are usually differences in how and where this content is to be used. This process can result in unintended duplicate effort, unnecessary rework, and sometimes incomplete information being delivered to potential customers. And, an increase in demand for proposals usually means a proportional increase in resources and time.

Today, the proposal group is saving a tremendous amount of time and effort by utilizing Arbortext and Windchill to create, manage and distribute proposal information. Preformatted and compiled product information is stored in one central location that can be easily, yet securely accessed online by all proposal developers. With this approach, everyone works off the same up-to-date information, including content on new or emerging products as they become available. Proposals are then created using Arbortext, including the latest information stored in the database. In basic proposal situations, Arbortext can even automatically generate a complete proposal. Arbortext not only has increased PTC's efficiency in creating proposals, solution documents, and product information guides, but it has also improved customer response time.

Looking Forward to Even Greater Efficiencies

PTC continues to expand the use of its own products internally. For example, the R&D group is currently expanding its use of data 'tags' that are assigned to product-related content. The use of tags will enable product managers to very quickly understand the impact of a product change request, or a request for new functionality. As well, the PTC Sales group is now starting to use Windchill as a central source for all account-related information, thus ensuring that all PTC personnel who interact with a customer are utilizing the same information. This solution has already helped improve PTC's efficiency in working with global customers. One recent sales effort required coordinating activities across nine different locations around the world.

As a user of its own software solutions, PTC has not only been able to improve the productivity of its many software development professionals, but has also been able to get first-hand user experience with its own products. Having a customer's perspective has resulted in many product improvements, thus helping both PTC and its customers gain additional benefits in utilizing the PTC Product Development System.

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