

# PTC Employs Its Own Arbortext® Software to Improve Delivery of PTC University Learning Content Materials

**Produces Higher Quality Courseware, Faster Development Cycles for Global Training Content**

It's an age-old problem for every company that provides its customers with product training: how to deliver accurate, updated training materials, to support global markets, as quickly as possible when a new product is released. Too often, important user training is delayed—sometimes for months—as everyone waits for training materials to be updated, translated and distributed.

Facing this very difficult issue, PTC University found the ideal solution in house, and recently deployed the company's own Arbortext learning content development solution with immediate and impressive results.

With Arbortext, PTC University's content developers can now create and manage training courseware much faster and easier, using a single source of learning content. Arbortext also enables PTC University to deliver materials on demand in eight languages, in a variety of formats, such as printable course manuals, web-based training, and instructor-led training materials to customers and instructors around the globe, faster and more accurately than ever.

## Introduction

PTC is the world's leading provider of Product Lifecycle Management (PLM) software solutions and related services, with more than 25,000 customers worldwide.

PTC University is the training division of PTC, providing PTC customers with web-based and instructor-led training that covers the broad array of software solutions offered by PTC. PTC University has more than 4,000 hours of learning content, available to be delivered both online and in classrooms by more than 400 certified instructors and training consultants.

PTC has measured a strong correlation between customer satisfaction and the customer's investment in product training\*. The reason is clear: Timely, high-quality product training enables users to quickly maximize the benefits and capabilities of PTC's software products. In addition, PTC University delivers additional value by providing dynamic, customizable product training options to customers, which accelerates new product adoption and success.

As an important financial contributor to the company, PTC University contributes to PTC's bottom line and is also evaluated on overall revenue and profit. As PTC continues to grow its product portfolio and global market share, PTC University faces the challenge of providing growing volumes of courseware in shorter timeframes—while lowering production costs and increasing quality.



## The Challenge for PTC University

PTC University faces many of the same challenges as its customers: How to quickly and efficiently deliver new products that meet customer expectations to ensure company success. For PTC University, the products come in the form of customer training courses.

Some of the critical factors that make training a challenge include:

- **An ever-growing product set**—New releases and new features on a diverse array of products means that training-content development needs to be responsive to engineering cycles. In 2007 alone, PTC launched over 80 product releases.
- **Global user base**—With customers and trainers positioned around the globe, rapid content delivery in local languages is a critical requirement.
- **Diverse training methodologies**—Training formats today include book-centric manuals, web-based learning content, courseware reference materials, student assessment tools, and instructor materials. This information needs to be kept up-to-date and delivered in the appropriate format in a timely manner.

\*Those customers who devote at least 14% of their overall professional services investment to end-user training report higher levels of overall product satisfaction. (Source: PTC University Business Intelligence)

### Traditional Approach and Its Limitations

Prior to 2009, PTC University was developing its training materials manually, primarily through an in-house developed HTML authoring application and standard Windows® products – MS Word® and PowerPoint®. Each time a new PTC software product was released to market, new training materials had to be updated manually for all related courses. Content developers worked independently, and often would cut and paste content from previous versions without consideration of other developers, while spending valuable time manually updating content or recreating content from scratch. This dilemma led to information inconsistencies, error-prone data when updates were missed, duplicative translations, and expensive manual labor processes for tracking information.

And further down the process, each version and format of the product training information required labor-intensive layout and desktop publishing work by the courseware developers. “In the past, curriculum developers spent a lot of time working on the style and layout of information,” says PTC University’s Pushpinder Toor, Product Manager. “In the end, the particular look and feel of our training materials tended to vary depending on who worked on a particular document. There simply wasn’t much consistency in terms of layout.”

All of this manual work and inefficiency resulted in turnaround cycles for new product training content being as long as three months for the source language. In addition, the localization of content could result in delays, on average, of six months. And since courseware development started late in the product engineering cycle due to a lack of connectivity to product data, the courseware, in a worst-case scenario, was not available for up to six months after first customer shipments.

### The Business Case for Adopting a Learning Content Development Solution

PTC University evaluated and improved its processes to develop courseware content to meet fiscal goals, increase customer satisfaction, and improve business processes. Previously, PTC University was using desktop and ad-hoc tools for content development and thus could not keep up with new product releases, deliver a high-quality customer experience, or continue meeting revenue and profit expectations.

Consistent with PTC’s business initiatives, the goals of implementing the Arbortext solution are shown in the following chart.

### Goals and Measures of the Changeover to Arbortext

Improve Fiscal Performance of PTC University	<ul style="list-style-type: none"> <li>• Reduce printing, localization and production costs</li> <li>• Grow training revenues and profits</li> </ul>
Increase Customer Satisfaction	<ul style="list-style-type: none"> <li>• Improve survey scores for training content satisfaction</li> <li>• Reduce average time-to-market for English and localized courses</li> <li>• Support dynamic course configurations</li> </ul>
Automate Business Processes	<ul style="list-style-type: none"> <li>• Reduce production time for all courseware materials</li> <li>• Reduce non-courseware development activities</li> </ul>

### The Solution: Arbortext Software for Learning Content Development

The benefits of Arbortext were quickly apparent, both in terms of content development and courseware production.

### Content Development

PTC University determined that a high percentage of their content was repeatable across their product lines and product releases. The organization adopted a “reusable content strategy” to turn training content into modular, reusable topics that could be leveraged across multiple courses. These modules are stored in a central repository, accessible to all content developers. Rather than author disparate, monolithic documents, content developers now assemble their course content by identifying and linking to each topic to be included (see Figure 1). When a change occurs, it requires a single update in the system and that change is reflected across all the associated courseware, regardless of format. Additionally, that topic only needs to be translated once even if it’s reused or linked to many times.

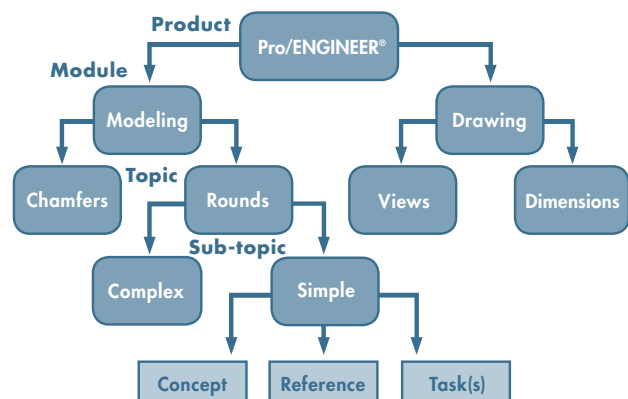


Figure 1: Topic Configuration Database

For example, a content developer typically creates a series of topics that are leveraged by other content developers to create a PowerPoint presentation, a web-based training session, and a related PDF version of the product training manual. In addition, these same materials may include other topics authored by other content developers, for a truly collaborative environment.

Under the hood of this solution is the industry's leading XML-based structured authoring and stylesheet software, Arbortext Editor™ and Arbortext Styler™. To accelerate the process and benefit from industry best practices, PTC University adopted a protocol known as DITA (Darwin Information Typing Architecture).

The backbone of the solution is the Arbortext Content Manager™, which manages and associates the complex content, assigns authoring and updating tasks to the content developers, and tracks the translation outsourcing requirements of the content.

Arbortext Content Manager is a crucial step in the process, as it maintains approved and localized content and supports the automated delivery processes downstream.

#### Courseware Production

Following the rollout of the reusable content strategy, PTC University tackled the automation of the courseware delivery. Previously, when using traditional desktop publishing tools, the training deliverables were manually assembled, formatted and published. That process would repeat itself for every output and every language. The time wasted with these processes significantly impacted the content developers' ability to generate new, revenue-producing courses, which resulted in high production costs for the organization. With Arbortext, PTC University makes just one change to the source content and each instance of that content is updated seamlessly in every type of output.

As previously discussed, Arbortext Content Manager manages the complex, reusable topics, so that when new course deliverables need to be delivered, the course developer simply requests their materials using a dynamic courseware builder, and receives those materials in real time.

This courseware builder is an easy-to-use tool that creates an automated publishing job for the Arbortext Publishing Engine™. The Arbortext Publishing Engine completely eliminates the need for desktop publishing by automating the content assembly, formatting and output – based on the instructor's request – in the preferred language and delivery format.

In addition, because of the flexibility and intelligence of the system, an instructor or user can now make configured courseware requests specific to a product or set of products or features. This allows PTC University to accommodate additional courseware configurations for a variety of customers around the globe – with no additional authoring or publishing requirements.

#### Transitioning to New Content Development Processes

Moving its developers to topic-level courseware development required both a broad process change and a shift in mindset for PTC University authors. Defining the processes allowed PTC University to uncover a comprehensive, best-practice approach to the definition and delivery of their learning content.

The biggest challenge PTC University faced with the transition was adjusting the content developers' mindset because they no longer had to be concerned with the end-to-end authoring and layout of their courseware. They now had to consider courseware in the context of intelligent, reusable modules. After the initial adjustment period, content developers now say that they wouldn't go back to the former manual process.

**“Today, every content developer at PTC University uses Arbortext. The efficiencies we've gained have been phenomenal. From a business standpoint, we'd never go back.”**

–Spencer Cutting of PTC University

So, what's the best way to ease this transition? Some organizations making the changeover rely on PTC University to launch Arbortext within their Learning and Development departments. Having made the transition themselves, and understanding the specific needs of training organizations, PTC University can help organizations avoid common pitfalls in developing training content, advise on how to best set up tools for specific needs, and share best practices from experience.

#### The Results

The first time PTC University leveraged the Arbortext solution for a new product release, the company realized significant cost efficiencies, higher quality courseware, and faster delivery cycles across their global markets.

### Cost Efficiencies from Initial Deployment of Arbortext; Balanced Scorecard Measure of Benefits

Objectives	Description	Measure*
Increase Financial Performance	<ul style="list-style-type: none"> <li>• Reduce printing costs</li> <li>• Reduce localization cost per curriculum</li> <li>• Provide more courseware options</li> </ul>	<ul style="list-style-type: none"> <li>• 30% cost reduction per course kit in US</li> <li>• 20% reduction in curriculum translation cost</li> </ul>
Improve Customer Satisfaction	<ul style="list-style-type: none"> <li>• Improve survey scores for training content satisfaction</li> <li>• Reduce average time-to-market for English courses</li> <li>• Reduce average time-to-market for localized courses</li> <li>• Course configuration capability</li> </ul>	<ul style="list-style-type: none"> <li>• 20% improvement within 1 year of Pro/ENGINEER Wildfire® 4.0 phase 1 curriculum release</li> <li>• Reduced development time by 20%</li> <li>• Reduced localization time by 20%</li> <li>• Implemented for Precision LMS 2.0</li> </ul>
Improve Business Processes	<ul style="list-style-type: none"> <li>• Reduce production time for guide PDF creation</li> <li>• Reduce production time for web-based training (WBT) content</li> <li>• Reduce production time for configured guides</li> </ul>	<ul style="list-style-type: none"> <li>• 30% reduction in PDF production hours</li> <li>• 30% reduction in WBT production hours</li> <li>• 40% reduction in configured guide production hours</li> </ul>
Adopt Standards	<ul style="list-style-type: none"> <li>• Use of DITA and stylesheets for content development and production</li> <li>• Topic-based content structure in Precision LMS</li> </ul>	<ul style="list-style-type: none"> <li>• Implemented for Pro/ENGINEER Wildfire 4.0 curriculum</li> <li>• Implemented for Precision LMS 1.0</li> </ul>

\*Compares the delivery of courseware to support the new product release of Pro/ENGINEER Wildfire 4.0 versus Pro/ENGINEER Wildfire 3.0.

### Conclusion

PTC University understands the impact of product training on PTC's overall success, both in the context of customer satisfaction levels and company profits. With the new Arbortext solution, PTC University delivers high quality learning development materials quickly and efficiently. The results are significant and consistently measured in higher customer satisfaction, reduced production costs, and faster learning content development cycle times.

Additionally, the transition to the Arbortext solution allows the courseware developers to spend more time generating new, valuable content that continues to grow revenues and provides further content expertise to improve customer adoption of PTC products.

For more information about the Arbortext product suite, please visit our website at:  
<https://www.single-sourcing.com>

Now that the Arbortext solution is in full production, PTC University is seeing even more substantial gains as the full potential of content reuse from the previous release is realized. In the case of the Pro/ENGINEER Wildfire 5.0 release, content developers were able to easily reuse substantially more of the content from the Pro/ENGINEER Wildfire 4.0 release.

- Development time reduced by 60%
- Localization turnaround cycles for Instructor-led Training reduced by 50%
- Localization turnaround cycles for Web-based Training reduced by 70%
- Localization costs reduced by 40%

The benefits measured in this new release are an indication of the ongoing value that the solution is expected to provide across all upcoming PTC product releases.