# Delivering Better Service at Lower Cost

Consistent, up-to-date service information that is tailored to the needs of technicians improves the quality and efficiency of your service organization

Companies should look carefully at the quality of field service information in order to contain the exploding costs of delivering fast, efficient service to customers. Out-of-date, inaccurate, and irrelevant service information affects the quality and cost of service that your company delivers, by adding to response times and reducing first-time fix rates. Long-life equipment manufacturers are particularly affected since aftermarket service and support is both a competitive differentiator and a growing part of revenue and profit. Poor-quality service information is a byproduct of traditional desktop publishing applications and the laborious processes they require. By replacing those applications with an automated publishing solution, you not only improve your information quality, but also reduce the cost of producing that information.

PTC has developed an out-of-the-box application for creating and publishing service manuals, which automates the publishing process, incorporates industry-best practices, and reduces implementation time and cost.

Great Service Documentation is Essential for Great Service

Aftermarket services and product support play an increasingly important role for today's product manufacturers, representing, on average, 25% or more of overall revenue. Some companies have embraced aftermarket services as a core differentiator and have transformed themselves into service-driven businesses with services accounting for more than 50% of revenue. This market transformation is due to the fact that 1) the quality of service and support often determines the success of the product; 2) services offer opportunities for lasting differentiation and improved customer retention; and 3) aftermarket sales and services typically offer higher profit margins than new product sales.

Spectrum of Aftermarket Operations
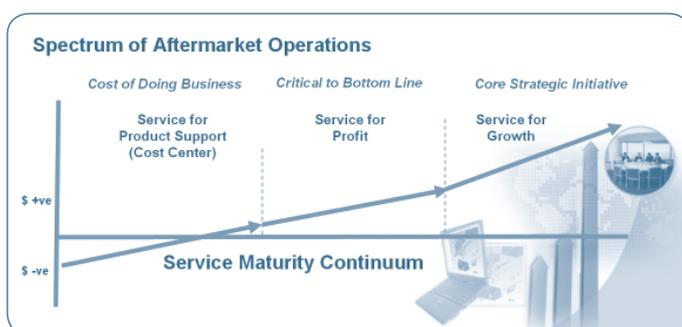
In order to transform their service organization from a cost center to a revenue-generating business, companies need to optimize their processes, enhance their ability to capture customer information, and develop a method for leveraging this information to improve service quality. Information quality and the capability to deliver product- and customer-specific information to service technicians plays a critical role for the success of the organization. Successful service documentation helps technicians quickly diagnose problems and perform maintenance and repair procedures. Ideally, service documentation gives each technician all of the precise and up-to-date information he needs – and only what he needs – in his native language and in a format that meets his needs.

Existing Service Documentation Publishing Processes are Outdated and Not Scalable

Service information consists of text that originates with subject matter experts (SMEs), such as engineers, and is then refined by technical writers. The text is supported by illustrations, which are repurposed from product information, such as computer-aided design (CAD) models, and refined by technical illustrators. All of that information is assembled into service publications, which are delivered in both print and electronic forms.

Companies often find that their existing systems for creating and delivering service information are outdated, inadequate, and impossible to scale to meet the new requirements. These systems are built around common desktop publishing tools. Consequently, there is little automation, no ability to link service documentation to product configurations and customer history, and no way to automatically check the accuracy and consistency of published information.

While the increase of information available on the Web has raised consumer expectations for immediate access to up-to-date and accurate information, desktop publishing tools, which were originally designed to enhance a manual design and layout process, have not kept pace. These tools give authors complete control over the appearance of each page and encourage hand-crafted graphical design. Consequently, content providers waste hours fine-tuning layouts, squeezing paragraphs and aligning illustrations. Authors reuse existing information by copying and pasting it, but at the cost of creating redundant copies of information that must be independently reviewed, approved, translated and maintained. To produce a Web version of that same information requires a similarly labor-intensive process. Updating the documentation to reflect product changes or corrections involves another laborious cycle. Rarely is

the process capable of accommodating the pace of change imposed by most industrial manufacturers. Additionally, traditional desktop publishing tools do not facilitate repurposing of product design data and contribute to the proliferation of redundant, inaccurate, or outdated service documentation. Often, companies cannot standardize service procedures because documentation for an identical product part or assembly, used in multiple products or configurations, is inconsistent. Altogether, these issues result in higher service costs and lower quality.

Companies that want to create more tailored versions of their service publications must find a new approach. Most agree that an automated production process is the answer – one built on a single source of truth that makes it easy to reuse information.

Dynamic Publishing Automates the Process and Improves the Result

The key to improving the publishing process is to apply the principles of modern production: eliminate waste and apply automation wherever possible. In publishing, this translates into giving authors the ability to create information in small, reusable components that can be automatically assembled for different purposes – both for different types of documents, as well as for different types of users. This process requires dynamic publishing solution that is capable of automatically publishing to multiple types of media, including print, Web and other forms.

Companies who have adopted dynamic publishing solutions have achieved a number of benefits:

• Standardized service procedures

• Increased the frequency of their publication updates from every few months to every few days

• Improved their delivery of high-quality Web information as well as high-quality printed publications

• Reduced time-to-market for new or revised products

• Reduced translation costs

• Maintained or reduced existing staffing levels
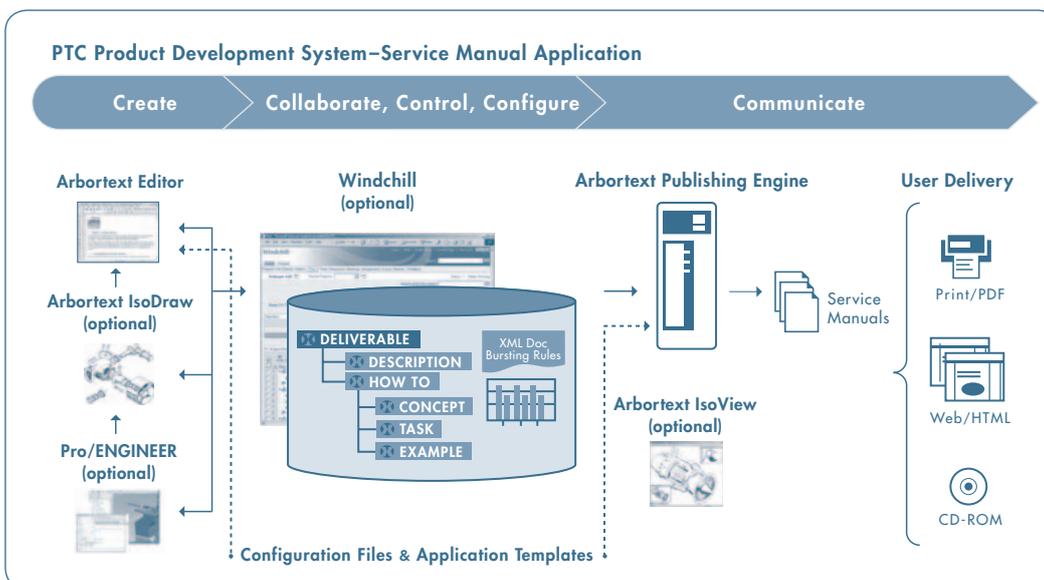
PTC Product Development System

The PTC Product Development System (PDS) lets subject matter experts and technical writers create information as reusable components and build the assembly list for finished publications. Authors can combine mechanical, electronic, and software designs, illustrations and images, text, and tabular data into rich, interactive documentation that automatically updates when a component is changed. The PDS dynamically assembles the information components and automatically formats to print, Web, digital media such as CD-ROM or DVD, and other electronic formats such as online help. Additionally, the PDS provides the content management capability to control the storage and retrieval of content components and manages workflows. This solution addresses and automates each of the different steps of the publication process.

Service Manual Application: An Out-of-the-box Solution

As with automating any process, an automated publishing solution requires design and implementation. PTC has developed an application of its dynamic publishing software that minimizes or eliminates this initial step, allowing you to get started with a fraction of the cost and time.

For small or mid-size companies, the service manual application will meet your needs with minimal or no configuration. Large companies can also choose to start with our application and customize it extensively if necessary.

PTC Product Development System–Service Manual Application

Create > Collaborate, Control, Configure > Communicate

Arbortext Editor

Arbortext IsoDraw (optional)

Pro/ENGINEER (optional)

Windchill (optional)

DELIVERABLE
DESCRIPTION
HOW TO
CONCEPT
TASK
EXAMPLE

XML Doc Bursting Rules

Configuration Files & Application Templates

Arbortext Publishing Engine

Arbortext IsoView (optional)

Service Manuals

User Delivery

Print/PDF

Web/HTML

CD-ROM

Capabilities of PTC Service Manual Application

Support for standard service information types:

As an industry 'best practice', service manuals apply special formatting and styling to represent commonly-used information types. The service manual application provides out-of-the-box support for the following information types specific to service information:

- Procedures

- Diagnostics

- Hazard statements

- Fault isolation trees

Authoring

- Component-based approach to authoring.
  The service manual application enables authors to create service manuals in reusable components at a fine level of granularity. This approach facilitates content reuse; enables authors to collaborate on the same document (multiple authors and subject matter experts can simultaneously work on different components of a document); and ensures a single source of truth. The result is a better process, lower translation costs, faster updates, and more consistent service information.

- Guided authoring templates.
  Standard authoring templates, incorporating industry best practices, guide authors through the process of creating and publishing service documentation.

- Automatic generation of common service manual parts.
  Tables of contents (document-level and optionally chapter-level), lists of figures, and indexes are automatically generated to simplify the authoring task and improve the consistency of service documents.
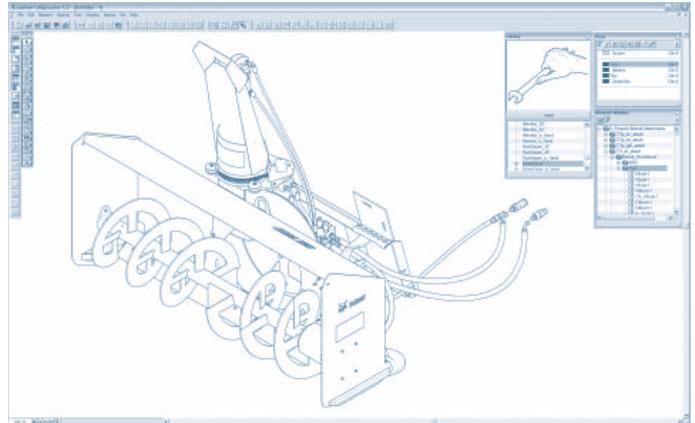
Automatic Publishing

- Automatic publishing to multiple media.
  Information is automatically formatted and published to PDF, Web, CD-ROM, DVD, and HTML Help formats.

- Multiple document layouts.
  The service manual application automatically configures and publishes documents in two-column or single-column formats (as selected in the configuration), and supports fold-out page formats.

- Automatic styling based on industry best practices.
  The appropriate styling for the different service information types (Procedures, Diagnostics, Hazard Statements, Fault isolation trees) is automatically applied. In order to minimize service errors due to inaccurate service instructions, preview copies are imprinted with a "DRAFT" watermark to visually distinguish them from released documents.
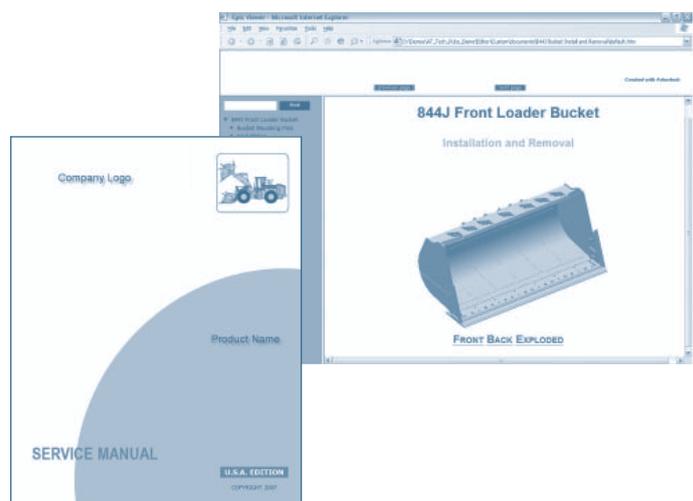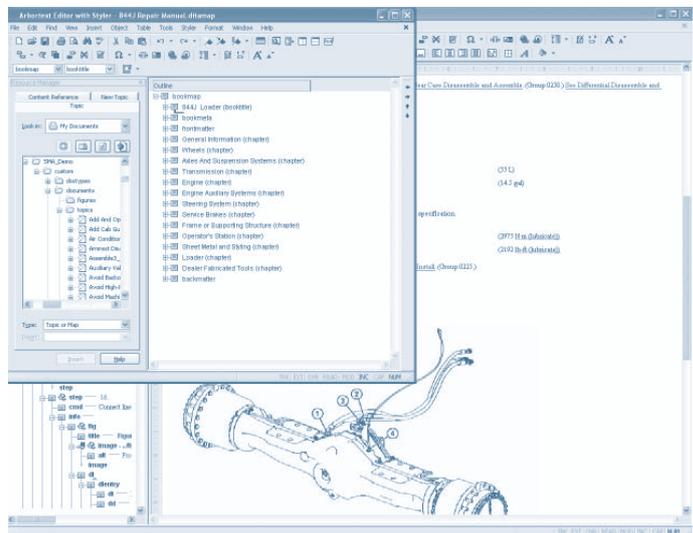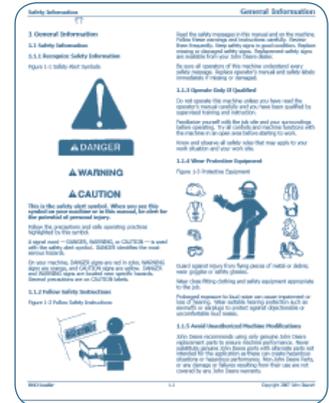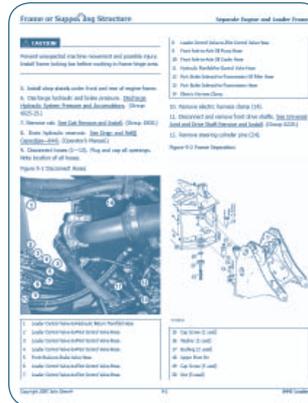
Interactive Technical Illustrations and Animations (optional)

- Interactive graphics.
  Interactive 2D and 3D graphics can be embedded in electronic versions of service manuals to facilitate the technician's learning process.

- Technical illustrations and animations derived from product designs.
  High-quality 2D and 3D technical illustrations and animations can be created from scratch or by reusing digital CAD models. The application offers integration with Pro/ENGINEER® and support for all major CAD formats (IGES, IGES, VRML, STEP, VDA, SAT, EDZ, PVZ, and Parasolid).

- Automatic update of illustrations and animations.
  The service manual application can be configured to automatically update technical illustrations and animations when the original product designs change.

Content Management (optional)

The service manual application offers advanced content management capabilities, required for full automation of the authoring and publishing process. These capabilities include:

- Support for compound documents

- Automatic 'bursting' of documents into reusable components (e.g. section, figure, warning)

- Support for review/approval workflow

- Version control

- Access control

- Change management

Known Limitations

The PTC service manual application is designed to meet the needs demonstrated by the vast majority of industrial manufacturers' service organizations. As such, the application does not provide out-of-the-box support for: bleed tabs, change marks, multi-volume table of contents and index, compound page numbers, CMYK and color separation, or book signatures.

Out-of-the-box Implementation Components

The service manual application provides several critical components of an implementation:

Document Type Definition (DTD)

- Specifies the required and optional components of a service manual

- Embodies best practices for creating service information
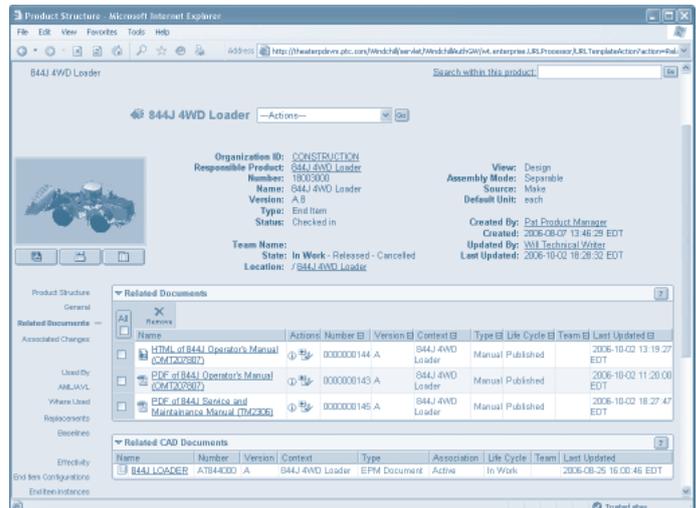
Stylesheet

- Specifies how service manual components are to be formatted for various types of media

- Produces service manuals for print (PDF), web, HTML Help and digital media (CD-ROMs and DVDs)

Configuration files

- Software configuration files that set up the authoring and publishing environment

single-sourcing
solutions, inc.

Choosing the Right System for all Service Documentation

The service manual application is an implementation of the PTC Product Development System (PDS). The PDS is the industry's only integral, end-to-end solution for improving service information quality while reducing costs and time-to-market. Because the PDS comes from a single vendor – PTC, it delivers the added benefits of lowest deployment and maintenance costs, reduced risk, and lowest total cost of ownership. While PTC aims to provide our customers with superior performance and value from our fully integral solution, we remain committed to open standards, so that customers can freely choose any combination of products to best meet your business needs.

What truly ensures our customers' success is our focus and approach to user adoption. At PTC, we recognize that the success of any new solution hinges on your organization's capacity and commitment to using it. That's why our delivery methodology incorporates a pragmatic adoption approach that helps you overcome the cultural and geographical challenges that companies often face when deploying new solutions.

The service manual application is recommended as the first adoption phase for a dynamic publishing process. With PTC Global Services as your partner, you can build on this application, adding dynamic publishing capabilities for a broad assortment of service document types including operator's manuals, installation manuals, service bulletins, training manuals, parts lists/catalogs and more.

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solutions, Inc.

To learn more about how Arbortext can help your company create and delivery high-quality product information, please visit our website at: http://www.single-sourcing.com/

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