



PowerVision Provides Pratt & Whitney Engineers Web-based Technical Manuals

Pratt & Whitney's Secondary Flow and Heat Transfer (SFHT) engineers rely on technical documentation in all aspects of their jobs. Unfortunately, these manuals are available either as hard copies— which may not be up-to-date—or through an on-line system that was not indexed and did not have effective search capabilities. PowerVision was contracted to update and reformat the first of many manuals and develop a Web-based On-Line Support System (OLSS) prototype to demonstrate an easy-to-use, searchable, indexed interface to the technical content.

Inconsistent Access to Technical Manuals Poses Problems

Pratt & Whitney's SFHT engineers faced three primary problems with regard to their technical documentation.

First, the technical manuals contained inconsistent levels of detail, out-of-date content, and in some cases incomplete coverage of necessary subjects. Second, the manuals were difficult for the engineers to access because the on-line implementation using InterLeaf WorldView did not provide the searching and indexing capability needed to effectively use the manuals. Finally, version control, distribution and end-user access to the latest materials needed to be improved.

OLSS Provides the Documentation Structure to Support Improved Performance

A Web-based, hyper-linked OLSS system was determined to be the ideal solution. This approach provides access to current material through a Web browser on the users' desktop computers.

PowerVision reviewed the content with subject matter experts and revised the first of several technical manuals. A new layout for the manual was developed, based on best practices for technical documentation, and was approved by the SFHT engineers. The resulting manual was consistently written, technically accurate, up-to-date, fully indexed and much more readable.

An OLSS prototype was developed to elicit feedback and illustrate the benefits of desktop access to the technical material. The OLSS provides navigation via a table of contents, index, or engine component-based diagrams, to allow the engineers to obtain information in context, as it is needed. Additionally, the entire manual is searchable using a browser-based search engine.

Business Area:

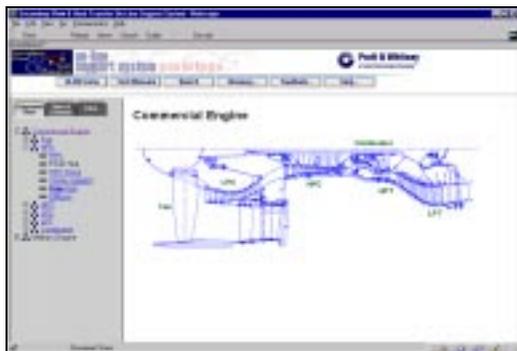
- Performance Support
- On-line documentation

Key Technologies:

- Microsoft Office
- HTML
- JavaScript

PowerVision's Role:

- Requirements Analysis
- Technical Writing
- OLSS Prototype Development



The Return on Investment (ROI) for developing a complete and up-to-date documentation and training system can be substantial. In order to gain some appreciation for the potential ROI of this effort, assume that 100 SFHT engineers access critical documentation via the OLSS. Additionally, assume 10 senior Subject Matter Experts (SMEs) are freed up from providing consultation to these engineers who currently cannot readily access needed information.



Based on 100 SFHT engineers saving 1 hour per week (6 effort days per year) spent searching difficult-to-use reference material or consulting with senior SMEs, potential ROI can be calculated:

- $6 \text{ days/year} * 100 \text{ engineers} @ \sim \$320/\text{day} = \sim \$192,000$ saved/year

Likewise, if the 10 senior SMEs each save 20 effort days per year of time that is currently spent providing consultation and guidance and conducting their own information searches, additional ROI can be achieved:

- $20 \text{ days/year} * 10 \text{ SMEs} @ \sim \$500/\text{day} = \sim \$100,000$ saved/year

Other areas of considerable ROI include:

- The value of carefully tracking documented processes for continued ISO-9001 compliance
- Increased work accuracy due to the use of up-to-date documentation
- Increased consistency of work products formerly compromised by reliance on random consultation versus the use of well-written formal procedures
- Reduced demand for traditional training solutions due to the just-in-time performance support system
- Saved time applied to value-added activities.

Considering the immediate benefit of allowing indexed and search access to easy-to-use reference material, the timesavings over the current labor-intensive processes appears substantial. Easily keeping documents accurate and up-to-date and quickly disseminating changes contributes to additional cost savings in the long run.