

Managing Implementation of Structured Authoring at Sandia National Laboratories



Dave Kmiec, Jr.
Amy Matteucci
Sarah O'Keefe

Agenda

- About the presenters
- Where we started
- What we did
- What we learned
- Your questions



Dave Kmiec, Jr.

- Was responsible for solution development at Scriptorium Publishing
- Currently at University of Minnesota
- Consultant for structured workflow development



Amy Matteucci

- Technical lead for project implementation at Sandia National Laboratories, aka The Client
- Championed project
- Tools and technology expert



Sarah O'Keefe

- Consultant
- Author of several books
- Currently focused on XML and structured authoring
- Founder, Scriptorium Publishing



Things looked good on paper...

- Tools
 - Unstructured FrameMaker
 - Acrobat Distiller
 - Illustrator for graphics
- Output
 - Print
 - PDF



But...

- "Page-oriented" authoring
- Numbered headings and paragraphs
- Generated files
- Landscape pages
- Pagination
- Goal to create and deliver XML for interoperability with other organizations



First step: improve unstructured workflow

- Output must follow military standard.
- Editors focused on checking printed output:
 - Measuring indents and margins
 - Correcting numbering
 - Ensuring graphics are with captions
 - Verifying tables of contents



Template did not use FrameMaker features.

- Manual numbering
- Manual formatting
- Manual master pages
- Time-consuming creation of front and back matter



Correct template problems

- Table of contents
 - Before: Typed in
 - After: Generated automatically
- Pagination
 - Set in book file instead of manually
- Headers and footers
 - Set on master pages



Correct template problems (continued)

- Cover page
 - Controlled by master page
- Numbered headings and paragraphs
 - Autonumbered instead of typed in
- Formatting overrides
 - Before: Common
 - After: Nonexistent



Correct template problems (continued)

- Large graphics
 - Before
 - Master pages set manually.
 - File splitting to accommodate change in master pages.
 - After
 - Master pages set automatically.
 - No file splitting.



Considering tools

- Top priority: Print
- High priority: PDF
- XML secondary
- HTML low priority
- 12 authors



Tool selection

- FrameMaker
 - Provides excellent print and PDF
 - Existing documents in FrameMaker
 - No additional licensing costs
 - Easier transition



FrameMaker provides extensive plug-in options.

- TimeSavers for Acrobat file production and interactive check boxes
- CUDspan tools (HuntOverrides, TOCBreaker, TemplateMapper)
- Custom FrameScript development
- Others...



Implementation effort (a twelve-step process)

- Identify implementation goals
- Define roles
- Establish timelines
- Perform structure analysis
- Create structure definition files
- Set up legacy conversion process
- Set up output paths
- Develop documentation
- Deliver training
- Convert legacy documents
- Create change management process
- Provide transition support and validate



1. Identify implementation goals

- Improve author efficiency
 - Correct template problems
 - Reduce formatting errors
 - Automate check boxes
 - Increase staff knowledge
- Implement structured authoring
 - Create XML for interchange with others
 - Add HTML output
 - Prepare for content management



Deliverable requirements

- Print/PDF that follows military standard formatting
- Future
 - XML
 - HTML
 - Interactive Electronic Technical Manual (IETM)



Print

- Print delivered from FrameMaker
- Use new, improved template
- Output looks the same as original, but automation improves efficiency



PDF

- PDF delivered from FrameMaker
- Timesavers (Microtype) and FrameScript to automate creation of interactive check boxes



2. Define roles and responsibilities

- Education
- Development
- Review
- Approval



Education

- Sandia:
 - "Selling" the implementation to:
 - Management
 - Authors
 - Customers
- Scriptorium:
 - Training/knowledge transfer



Development

- Scriptorium:
 - Creation of content model, structure files
 - Delivery of training
 - Development of documentation
 - Technical experts



Review & approval

- Weekly conference calls
- Close collaboration/face-to-face meetings
- Scriptorium:
 - Internal review
- Sandia:
 - Technical review
 - Final approval



3. Establish timelines and milestones

- Schedules create accountability for client and consultant
- Help determine project scope
- Our project schedule was constrained by:
 - Sandia budgeting process
 - Sandia resources (must give writers time to complete other tasks)
- Scheduling training was challenging for both



4. Perform structure analysis

- Sandia
 - Provide sample files
 - Consider future requirements
 - Collaborate on analysis and review
- Scriptorium
 - Analyze existing files
 - Develop metadata and taxonomy
 - Analyze match between requirements and available structures



5. Create structure definition files

- Scriptorium
 - Implement structure definitions (DTD, EDD)
 - Set up configuration files (structured application)
- Sandia
 - Review
 - Use deep knowledge of content to ensure structure definitions fit



6. Create legacy document conversion process

- Sandia
 - Provide unstructured documents for testing
 - Identify inconsistencies in legacy documents
- Scriptorium
 - Develop conversion process
 - Create scripts to automate repetitive tasks
 - Write documentation of conversion process



Develop conversion process

- Two conversions required:
 - From old, inconsistent files to new, consistent, unstructured template
 - From new, unstructured template to structured content



7. Set up output paths

- Print supported out of the box
- PDF output customized with plug-ins
- Proof of concept for XML/HTML



8. Develop documentation

- Scriptorium:
 - Structure definitions
 - Formatting and formatting algorithms
 - Technical background for developers
 - Authoring documentation
- Sandia:
 - Technical experts review
 - Documentation for internal processes



9. Deliver training

- Authors and developers have different needs
- Developers will support authors
- Huge list of topics
 - Template
 - Content model
 - Structure files (EDD, DTD, structured application, read/write rules)
 - Scripts



Author training

- General structured authoring and XML concepts
- Rationale for implementation
- Structure definitions specific to the organization
- Using the designated authoring tool



Developer training

- In-depth understanding of the structure
- How to implement and test changes
- Technical training on the output paths and how to maintain them
- Developer training includes review of author training content



Training before implementation

- Project leads and key influencer had extensive technical training *before* project began
- Attended public classes
- Prepared for role as technical reviewer
- Began educating content creators on structured authoring concepts
- Built interest and excitement about new technology



Customized training was essential.

- Small classes
- Customized to Sandia requirements
- Held on-site at Sandia; no travel required for participants
- Customized training workbook
 - Used in training
 - Available for new hires
 - Sandia can update



10. Convert legacy documents

- Scriptorium
 - Develop and document process
- Sandia
 - Perform conversion
 - Restricted content must be processed internally



11. Create change management process

- Sandia:
 - Take over maintenance of environment
- Many similarities to software development projects
- Bugs and enhancements
- Must manage change, but be sufficiently flexible to ensure that structures meet the writers' needs



12. Provide transition support and validate

- Scriptorium and Sandia
 - Ensure that in-house resources can maintain and extend the implementation
 - Evaluate implementation against goals
 - Developer training critical for success
- Scriptorium
 - Provide initial technical support to ensure in-house experts have assistance, if necessary



Assessment

- Staff is smaller and producing more content
 - Half the writers
 - Double the page production
 - Higher quality
- Document production is easier because of greater automation
- Positioned to support future requirements
- Authors enjoy working in structure



Assessment (continued)

- Still waiting on some components
- Transition was challenging
- A lengthy content analysis phase paid off



Advice to others

- Select consultant carefully:
 - You're going to spend a lot of time together!
 - Unifying the customer's content knowledge with the consultant's structure knowledge.
 - You are putting your credibility (and job??) on the line.
 - You need trust. Often, you will have to trust your consultant to make the right recommendation.



Advice to others (continued)

- Complex customer relationships (within Sandia) required methodical approach and good project management practices.
- **Be realistic with your schedule!**
 - Once you commit to a schedule, management will hold you to it.
 - Everything takes longer than you think.
 - Project pieces are interdependent; a slip in one area means slippage elsewhere.



Advice to others (continued)

- Clarify roles and responsibilities.
- Be willing to be the bad guy.
- Informal communication to address small issues keeps the project moving.
- Client education made it easier to resolve technical questions.
- Expect change resistance.



Advice to others (continued)

- Sandia decided against do-it-yourself based on efficiency and expertise issues.
- Need a management champion who will get funding and support.
- New workflow requires new mindset, new skills, lots of changes.
- Address the fear of “robotic writing” and loss of ownership.



Advice to others (continued)

- Structured authoring exposes weaknesses in existing content.
 - Disconcerting for writer.
 - Handle with care.
- One unusual advantage at Sandia: Writers were already required to meet military standards.
- Client must participate in project—you cannot hand off the project and disengage.



Advice to others (continued)

- Knowledgeable client makes a better reviewer.
- Sandia culture is to build internally, but Sandia chose to focus on document content rather than structured authoring development.
 - Probably a one-time effort.
 - Developing expertise in structure development was too much work for a single implementation.
 - Enormous effort to develop skills that would be used infrequently.



Resources

- Acrobat TimeSavers: microtype.com
- Cudspan tools: www.telecable.es/personales/cud/cssIndex.htm
- White papers
 - www.scriptorium.com/papers.html



Q & A



Contact information

- ✦ Dave Kmiec, Jr., kmiec004@umn.edu
- ✦ Amy Matteucci, almatte@sandia.gov
- ✦ Sarah O'Keefe
 - ↳ www.scriptorium.com
 - ↳ 919-481-2701
 - ↳ info@scriptorium.com

