Modular content: a new publishing strategy at the Continuing Legal Education Society of British Columbia

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Abstract

This report is a case study of a new publishing model entitled structured modular content, adopted by the Continuing Legal Education Society of British Columbia in order to upgrade their outdated production system that did not allow for easy reuse of content. In order to implement this new publishing concept, the Society initiated a project entitled *Content Strategy*, with the objective to publish material in independent modules that can be easily recycled. Through this project, the Society had to convert all of their content to XML DITA, an open standard for structuring, developing, managing, and publishing content, with the help of DITA CMS, a component management system. This report studies what structured modular content is and how it works, the challenges that the Society encountered while converting their content and how they overcame them and the new possibilities that structured modular content provides: new products.

Keywords: XML DITA, DITA CMS, digital publishing, structured modular content
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Introduction

The Continuing Legal Education Society of British Columbia has recently adopted a new publishing model called structured modular publishing to improve production and reuse of content. This report outlines how the Society implemented this strategy and the technology they used. It will conclude with an analysis of the challenges the Continuing Legal Society of British Columbia overcame while transitioning to this new publishing model.

In today’s publishing industry, publishing houses have to learn to be creative in adopting new ways of producing content. They have to keep up with the digital trends that set the pace of their readers’ desires and needs.\(^1\) Given that readers are more and more prone to read content from an electronic device rather than hard copy, the Society is addressing this need by making the content more readily available to this audience. As most of the content doesn’t need to be created from scratch because it is already existent in the books they published, all the Society has to do is to find an effective way to reuse content spread across a multitude of books, in order to create a new product that the customer may require: quick reference guide, checklists, etc.

The Society, also known as CLEBC for short, understood the needs of their customers and identified that their content was previously locked into the entire product package (entire book), while customers were often only interested in parts of that product. With the previous software that was used, content reuse was difficult and time consuming, not ideal for what their consumers needed. By adopting the structured modular content strategy, CLEBC is meeting the need of their consumers. They are able to output content quickly, and more importantly, to reuse their current content in order to create new products in any format and for any device.

Since 2003, CLEBC have been producing content using Word 2003 with customizable XML. In 2010, CLEBC started researching other ways to produce and publish content that would simplify their production process and enable them to reuse content in order to create new products.\(^2\) In 2011, Microsoft lost a patent infringement case and was no longer able to sell Word products with the capability of opening files containing custom XML.\(^3\) As CLEBC was heavily relying on Word and its XML functionalities, in 2011, they initiated the Content Strategy project, with the objective to change the way they produce and publish content and move away from Word. Their intention was to break apart the content into its component parts in order to make those smaller

\(^1\) Jane Friedman, “5 Industry Issues for Authors to watch in 2016”, accessed October 1, 2016, https://janefriedman.com/top-5-industry-issues-for-authors/.

\(^2\) Laura Selby, personal communication, September 19, 2016.

\(^3\) In 2011, Microsoft lost a patent-infringement case to a Canadian software vendor called I4I, covering a technique for implementing XML in word-processing software. Microsoft was no longer able to sell Word products that have the capability of opening a .XML, .DOCX or .DOCM file, containing custom XML in the United States. Source: https://www.cnet.com/news/what-the-i4i-microsoft-patent-case-means-for-software-users/
pieces fit together into new products more seamlessly. Their content, as it was, was structured, however it was not published in stand-alone modules, therefore content reuse was difficult and time consuming. Structured modular content enabled the Society to reuse any bits of their content in a matter of clicks.

Structured content is content with metadata applied to the text that defines what each component is: front matter, chapter, section of a chapter, conclusion, back matter and published all as one entity, each component being depended on each other. In contrast, structured modular content is also content with metadata, however it is divided in components that are published as stand-alone modules, independent from each other. Structured modular content enables the Society to reuse content easily because it is published as independent modules, modules that can be easily gathered together to create brand new material in a very short time.

In 2015, after intense research and consulting with various firms and IT consultants, CLEBC started converting their content into structured modular content.

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5 Laura Selby, personal communication, September 19, 2016.
Brief outline of the report

The scope of the report is to describe how CLEBC implemented the Content Strategy project and the technology used in order to do so.

Part One of the report provides an insight to CLEBC: the organization’s vision, mission statement and its products they create. This part will also present CLEBC’s Content Strategy project, the challenges the Society faced during the process, and the reasoning behind CLEBC’s strategy of publishing structured, modular content. Part Two delves into why CLEBC chose a new type of XML and why an updated Word product was no longer available as an option. Furthermore, included will be a commentary on why CLEBC uses a component management system in order to manage their content. Part Three of the report details the process of content preparation prior to conversion (converting the old product into the new publishing platform) and all the changes made to the content. Part Four answers the question: has the structured modular content concept truly served the purposes of the Content Strategy project? It is a commentary on the challenges the Society overcame while undertaking this project and the opportunities for new products that are being brought forth as a result.

This report is written from my perspective while working as an intern at the Continuing Legal Education Society of British Columbia. I have worked in that capacity from June 2016 to September 2016 and I was part of the Content Strategy project team.
Part One

About CLEBC

The Continuing Legal Education Society of British Columbia, is a not-for-profit organization that publishes learning and reference content covering a range of topics in the legal field, delivered in different media outlets: print, online, TV, and courses.

The Continuing Legal Education Society of British Columbia was established in the 1960s, with the support of the BC Branch of the Canadian Bar Association. Ever since then, they have been providing a variety of products: print and online books, case digests, course materials, precedent collections, eLearning and Toolkits; they offer courses that are designed to provide in-depth coverage and information on a variety of topics from taxation law to more contemporary topics like technology and aboriginal law.\(^6\)

CLEBC is the largest continuing legal education organization in Canada. It is governed by a board of Directors appointed by the University of British Columbia, the University of Victoria, the Law Society of BC, and the BC Branch of the Canadian Bar Association. The board’s directors are esteemed members of the legal field and they have a vital and significant contribution to all of CLEBC’s published content. CLEBC derives all of its revenue from the sales of the products and services.

In order to succeed as an organization, the following statement has guided the Society:

“The Continuing Legal Education Society of British Columbia is the most respected and most often relied upon source of continuing professional education for British Columbia lawyers and their support staff. Our mandate is to meet the present and future educational needs of the legal profession in British Columbia. Our goal is to develop an ongoing long-term relationship with every lawyer in the province. Everyone on our staff is eager to hear your comments and suggestions on how we can accomplish this goal.”\(^7\)

\(^7\)Ibid
Key departments

CLEBC grew considerably in a short time, from a team of a few people, to a medium sized organization with several departments: Publications, Programs, Marketing and IT.

The Publications department is in charge of keeping all their print products up to date according to the law. Their products are updated every time the law changes; however, a new edition of each title will be published yearly. The Society’s authors are practising lawyers and judges from British Columbia who volunteer to contribute to the Society’s books. The in-house legal editors are in charge of the editing and the publishing process. This department is the largest department in the company and I worked in this department during my internship.

The Programs department is in charge of providing and facilitating all the courses. CLEBC offers more than 80 courses, and their courses are known as having the most extensive coverage on all the legal topics.

The Marketing department is in charge of keeping in touch with all CLEBC’s customers and ensuring that all the new products and courses reach the sight of every single lawyer and legal assistant in BC. Their client base is very well defined, their products would be beneficial to any practicing lawyer in British Columbia. The Marketing Department is also in charge of email marketing, monthly newsletters, and ensuring that their website is up to date.

Lastly, the IT department oversees the smooth running of all the technology and software the company uses. This department is one of the smaller departments at CLEBC, however their function is vital.

History of CLEBC

The Continuing Legal Education program was delivered through the Extension Department of the Canadian Bar Association and later, the Center for Continuing Legal Education (at the University of British Columbia). During that time, the program offered 11 courses and had approximately 1700 registrations, earning an annual income of $250,000.

Around the 1970s, the Continuing Legal Education program became the Continuing Legal Society of British Columbia. The Society was incorporated by a group of lawyers led by Mr. Justice Bruce Cohen. Their motivation for the change was for the CLE program to have a stronger connection with the legal profession. The new Society was meant to bring together the universities that provided undergraduate legal education of future lawyers as well as the professional bodies that governed the profession and represented lawyers of the province. On incorporation of the new Society, there were six members: The Law Society of BC, the President of the Law Society of BC, the BC branch of the Canadian Bar Association, the President of the BC Branch of the Canadian Bar Association, The University of Victoria and the University of
British Columbia, who still remain members of the Society today.

In 1979, CLEBC moved from the University of British Columbia campus into its own premises in downtown Vancouver. During that time, CLEBC increased the available courses from 11 to 40 in the first year of existence and their registrations increased to over 5000. All of their content was created by volunteer faculty, esteemed lawyers or judges that wanted to participate in the content creation process of CLEBC’s products.

CLEBC began publishing books in the 1980s. Again, they were written with the help of volunteers from the law industry. Their first book was *Probate Practice Manual*, and this title set the standard of publishing that the Society followed from then on.

The books were published as loose-leafs in binders and yearly supplements were published and sent out to customers, as updates. In legal publishing, all content is broken up into sections with headings that contain locator numbers. The index and table of contents use these locator numbers instead of page numbers, in order to allow for updating some of the pages, as required, rather than the entire book. The process of making the book, also known as production path or production line, was at first done in Word by CLEBC. The editors were adding Word styles and XML to the content for print books. Word allowed for flexibility, which was good, however, it also allowed for many styles and formats to be created and grow over time.

During recent years, CLEBC realized that the production system they had in place caused duplication of work and came to the conclusion that they want to move away from a production process that ties style and format to the text. Also, they needed a program that applies strict rules based on book design. Furthermore, based on feedback they came to understand that customers require products that are solution centric, as useful content on an issue was scattered among many products, therefore content reuse was very important.

**Researching new ways to publish content: the *Content Strategy* project**

When it is produced, content is designed and packaged for each particular book and if it is to be reused, it would be time consuming as the production process would have to commence from scratch. Based on customer feedback (available in Appendix A), the Society has learned that there is a need for reutilizing the content of books to more than one purpose, but instead that content can be recycled into new products, such as creating mini reference guides on various legal issues using the content from the books, checklists, etc. Because content is locked in particular production paths and the Society often wanted to recycle parts of the book, the result was duplication of work when it came time to creating new products using existing content. This was one of the main requirements that drove the Society to adopt structured modular content concept. How modular structured content allows an easy reuse of content is further explained in Part Two of this report.
CLEBC has been publishing structured content for a number of years and the software they used to create content was Word 2003 with customizable XML (this involved full control over XML) and VB6 Macros (computer programs built into Word) for outputting content into HTML and PDF. An XML Schema was used when working on content in order to validate the content. The patent infringement case in 2011 meant that only Word 2003 and the first release of Word 2007 still had this feature. The functionality was removed from any later versions due to the patent infringement case.

Furthermore, in 2014, Microsoft ended the support for Office 2003. This meant that automatic fixes, updates, or any kind of technical assistance will no longer be provided by Microsoft.

CLEBC was now stuck with a very limited legacy system for creating and tagging content and in addition, they could not upgrade to a newer version of Word. Their legacy system was limited because the existing content could not be reused, it couldn’t be easily integrated with a component management system, it was difficult to maintain, and was slow and inefficient.

CLEBC had been using this technology to produce content with XML for a number of years, and were now compelled to look for a new way to publish efficiently, use a single software to manage content, and to reuse their content easily, something that structured modular content would allow. XML DITA proved to be the answer to their question. XML DITA is an open standard for structuring, developing, managing, and publishing content. It offers an extensible set of structures that allow for modular content: all content is published in standalone pieces that make content reuse straightforward.

The Society’s prerogative is to ‘compete to be unique,’ therefore in order to better leverage their content, the Content Strategy project was put in place in 2011 with the aim to explore new possible ventures in publishing. This would enable the Society to fully exploit the potential of their content. This project enabled the Society to discover a new way of publishing, which involves publishing content in independent modules that can be mixed and matched to create different products. The ultimate objective of this project is to unlock the potential of content by publishing it in modules, which enables the reuse of that content. The project will create content design and delivery standards in order to optimize the appeal of their products and services by moving from the previously used structured content (in XML) to structured modular content (in XML DITA).

Previously, the content was designed and packaged for each title (and area of law) to best suit the specific characteristics (house style, structure of the content) of that product. As a result, the content of each product was not standardised, but was uniquely created to suit the requirements

for that product, and this, at times, was time-consuming. This is another reason that led the Society to adopt the structured modular content concept, whose purpose is to simplify the production process.

Another element that led to this transition are the constant changes of today’s publishing industry. The content that is currently published in today’s market is increasingly catered to digital consumers, which is requiring the digitization of content. As a result, the Society had to find new ways to appeal to consumers with these expectations. Adopting the structured modular content strategy proved to be the solution to this demand of new content. More content can be created in smaller, module sizes and delivered faster electronically, as opposed to larger, manuals delivered in print and online.

However, the transition process was not simple. In order to implement these changes, the Society established business goals that would guide them throughout the transition to the new system. To start, they needed to be able to distribute content for consumption in print, web, video, tablet, and smartphone. One other goal was to reduce duplication and increase efficiency in the creation, production, and distribution of content. The Society wanted to leverage content that may not otherwise have a home in their traditional products and make more of existing content by combining it, including it with new content, in new multimedia products to better meet learner/user needs. CLEBC was also considering licensing some of their content to third-party distributors, as appropriate and lastly, improve customers’ overall online experience with CLEBC\textsuperscript{11}. In order to meet these goals, the Society needed to assess their content and the technological foundation supporting it, implement any improvements necessary to their content creation, management and distribution. To reach these goals they also needed to assess the ongoing needs for education and resources of their current and future customers.

Furthermore, the Society identified the following challenges that must be surpassed in order to better create, manage and distribute content:

Challenge 1: Content is format specific making reuse difficult
Challenge 2: Content is lost if it doesn’t meet the characteristics of the traditional product line
Challenge 3: Content time to market is lengthy
Challenge 4: Content is treated as having a restricted, short life cycle
Challenge 5: Content is product centric versus solution centric
Challenge 6: Content is locked into the entire product package, none of it’s contents can’t be reused within another product
Challenge 7: Content is not structured for multi-channel/ device delivery
Challenge 8: Work in creating and producing content is duplicated

\textsuperscript{11} The Continuing Legal Education Society of British Columbia, \textit{Content Strategy} Project internal documentation, accessed September 1, 2016.
Challenge 9: Content is locked into platforms
Challenge 10: Content cannot be filtered for delivery

To sum up these challenges, content is locked in production lines and that is resulting in duplication of work and lost opportunities to use/reuse content. Content is created and developed for a specific product and a specific production line, limiting the potential of that product to one purpose. This makes the production process labour and cost intensive and very difficult to provide a multi-channel delivery of the content.

If the Society will be able to overcome these challenges, they will be in a position to improve product support and marketing content to be more customer-centred and improve efficiency in its creation and production. Also, they will be able to innovate new products, delivery methods and services by rapidly discovering customer needs. They will be in a position to design, test, and deliver content that responds to those customer needs and in addition, staff will be able to work collaboratively in teams to produce the experience (product/product support, etc) that best suits the topic/customer need (move from silos to collaboration). Lastly, CLEBC will move from offering “discrete” products to integrated digital content (e.g. the customer chooses the content experience that they want; dynamic learning paths based on competencies)

With these objectives in mind, CLEBC is on the right path to accomplish these goals. After much research, XML DITA has proved to be a clean way to tag content in order to produce subject matter that can be published on all platforms. They use DITA CMS, a component management system to produce single production line content.

The next part of this report will focus on talking about the functionalities of XML DITA and DITA CMS and how these are the right choice for CLEBC.

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12 Ibid.
13 Ibid.
Part Two: Innovation

In 2011, CLEBC was unable to upgrade their Word-based strategy and had to adopt a new strategy altogether. This section discusses why XML DITA and DITA CMS was the best way to move forward with the implementation of the structured modular content.

Why XML DITA?

XML DITA is an open standard for structuring, developing, managing, and publishing content; it uses topics and maps, and was originally created by IBM to more efficiently reuse content in product documentation. XML DITA is mostly used for business publishing and publishing products documentation. DITA has gained widespread adoption in the technical documentation world, in companies such as Cisco, IBM, Nokia, and Oracle.\(^\text{15}\)

XML DITA enables the Society to publish their content the way they want: by structuring the contents of one book, into small parts in order to enable those parts to be reused with ease. The Society was looking for something that uses XML and that enables them to publish content in modules. As it turned out, XML DITA was exactly what they were looking for.

When the Society decided it was time to upgrade their system, they explored many avenues, as continuing with Word was not an option. Staying with Word would have been very difficult, as the Society would have had to use an outdated version (either 2003, or the first iteration of 2007). In addition, these two versions of Word were no longer supported by Microsoft. During their research, they discovered the notion of publishing structured modular content. This new concept seemed to be exactly what they needed, because:

- It used XML, and the Society was already using XML for producing their books, therefore the staff would not need extensive re-training
- It allowed them to publish clean and unformatted content, that could be easily transferred
- It allowed them to re-purpose content\(^\text{16}\)

XML DITA would unlock the content currently locked in production path, by only having one production line for all their products. This would make all their content consistent and easier to output to other formats.

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\(^{16}\) Laurentiu Piscuc, personal communication, August 18, 2016.
About XML DITA: maps and topics

To better understand how structured and modular content is created with XML DITA, this section will define maps and topics.

XML DITA is a format specification, therefore it requires a component management system in order to manage the content: DITA CMS. All the content is inserted in DITA CMS as modules, in CLEBC’s case as they were legal publications the modules were already predefined by the very well sectioned content of each chapter, therefore each section constitutes an independent module. Modules, also known as topics, are standalone; however, they can be connected to each other by a book map or chapter map.

The DITA map can be regarded as the roadmap for all the topics of a book. It organizes the topics, mimicking the structure of the book. The map is essential because it is used to interconnect the standalone parts/re-usable topics. The map can be outputted in several formats, the most used being PDF.17

DITA content is created as topics and each topic is an individual XML file. Generally, a topic contains a section of one chapter with a singular intent: that section provides an overview of the entire chapter. A topic can also be a subsection of another topic. Topics are organized by their map to resemble the book structure.18

Below is a basic structure of a CLEBC book:

- Book map
  - Chapter map
    - Topic
      - Topic
      - Topic
      - Topic
    - Topic
  - Appendix map: Forms and Precedents
  - Appendix map: Index

The Book map contains metadata about the book and all the Chapter maps, however it does not contain actual content. Nested under the Book map are the Chapter maps that contain all the

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metadata about each of the chapters and their topics. Nested under the Chapter map is the content organized into topics.

Topics can have topics nested underneath them, mimicking the structure of the book (e.g. section - subsection). All the content is nested under a map, as Topics, that can be regarded as modules, making the content modular and structured. Lastly, Appendix maps can be added to include the backmatter of the book (e.g. Forms and Precedents, Index, etc).

The Book map or Chapter map enables the transformation of all of this content into a publication. The Book map can be outputted into various formats. At the moment, CLEBC outputs to PDF and HTML.

**Why DITA CMS?**

In order to facilitate the transition to XML DITA, the Society had to look for a suitable software. They were looking for a tool that was easy to use and quick to learn. The Society was not willing to hire new staff in order to make this transition. After being advised by various IT firms and Consultants, CLEBC choose DITA CMS, a component management system used to create user information manuals by some of the major companies in the world.\(^\text{19}\)

The other CMS systems reviewed in the process of finding the right technology for XML DITA were RSI Suite and Vasont. However, these two were found unsuitable for CLEBC.

RSI Suite is an enterprise publishing solution that is built specifically for publishers. It is a centralized publishing solution that is optimized for creation, management, reuse and delivery of multi-format content. Even though this software was not XML DITA friendly, the Society still considered it as an option, as there was the possibility of customizing it for XML DITA. However, this system was not suitable for CLEBC particularly because it was not Canadian owned and if the software was bought from another country additional costs may incur. Another aspect was that it is cloud based and the Society was looking for a software that would allow them to have the servers onsite.\(^\text{20}\)

Vasont CMS is a perpetual component content management system used for critical business information. This system was suitable for CLEBC’s needs as it offers content management at sub-document level, providing control over every piece of content enabling effective content reuse. However, this technology was not feasible for the Society, because the costs involved in purchasing this CMS exceeded the available budget.\(^\text{21}\)


DITA CMS proved to be the most suitable technology for the Society. DITA CMS allows its users to focus on content creation, enabling the company to reach its goals of content reuse and improved productivity. It is generally not used by publishing houses, but by software and hi-tech manufacturing companies. It is mostly used to create user manuals, as it enables the user to reuse content and easily translate content. It was created by IXIASOFT and launched in 2006.

The reasons why CLEBC saw fit to use Ixiasoft’s DITA CMS was because:

- It had the appropriate functionality for the use of XML DITA, therefore there were no changes required to the software
- It was Canadian owned and it was budget friendly
- It offered on site installation and the Society was trying to stay away from a Cloud Based service, meaning that they have full control over their content
- Easy to use, and gives the products a clear structure that can be easily reused\(^\text{22}\)

The production of the content is done through DITA CMS, which also acts as the repository for all the content. The Society has embedded Oxygen Editor within DITA CMS. Oxygen Editor is a very well known tool used to edit and tag the content with XML. Furthermore, the implementation of a stylesheet within DITA CMS was required in order to establish the house style all the books would be formatted in and this process is described in the following section.

**Stylesheet Development**

DITA CMS also offers consistency in house style. All the books published will follow the exact same house style in multiple platforms. The formatting is implemented when the manuscript is outputted into the required format.

The house style was implemented within the CMS with a stylesheet on which staff at CLEBC worked numerous hours in order to make it consistent. The Society hired Oberon Technologies to write the code and insert the stylesheet within the DITA CMS.\(^\text{23}\) Oberon Technologies is based in Michigan, United States and partner with leading XML-based software suppliers to provide complete, end-to-end publishing solutions. They design, create and implement automated publishing solutions that help companies improve their publishing process.

Oberon Technologies has created the templates for all the DITA maps and topics required in order to construct the CLEBC books. Figure 1 shows all the DITA Maps and topics templates created by Oberon Technologies. When creating a new map/topic, the user has to select/check the box of the appropriate map/topic template suitable for each particular text. By doing so, the

\(^{22}\) Laurentiu Piscuc, personal communication, August 18, 2016.

\(^{23}\) Laura Selby, personal communication, September 19, 2016.
map/topic is automatically created with all the required formatting and all that the user has to do is to start inputting content into that particular map/topic.

Figure 1: DITA Maps and topics templates

After the implementation of the stylesheet, CMS DITA was ready and prepared for the conversion process. However, before commencing the conversion, the content had to go through some changes that are further discussed in the following section.
Part Three: Work in progress

This section of the report delves more into the technicalities of the conversion. It outlines the phases of the project plan followed by the Society. It also discusses how the content was prepared in order to be made ready for conversion and the challenges encountered during conversion.

Project Plan

The project has three phases:

- **Research:** researching ways to adapt the content for modularity and reusability (2011-2013)
- **Proof of Concept:** audit and evaluate programs and identify reuse opportunities (2013-2014)
- **Conversion of Content:** creating a plan for moving content into DITA CMS and commence conversion (January 2015 - August 2017)

The research phase was completed during the early years of the project when the Society decided to go with a structured modular content strategy rather than upgrading their current Word 2003 version. The last two phases are described in more detail below. A proof of concept was completed shortly before the Conversion of content phase, which was still ongoing at the time of writing.

Content preparation and conversion

Content preparation involved looking closely at the existing content and determining all the changes that needed to be done before actually converting all the content to XML DITA. They had to establish what they currently had, what they needed in order to make this transition, and how they could capitalize on re-usable content. The scope was limited to all the content that existed already in the previous system and was accessible to all of their customers.

CLEBC also looked at all their products, books, course materials, webinar archive, e-learning case digests, and the platforms supporting these products, their online store and their website, in order to establish how to distribute their content into standalone modules that can be easily reused.

The project team also reviewed the following:

- Content types (videos, articles, chapters, etc.)
- The main components required to makeup each content type
- The attributes associated with the components
The purpose of content or component
- Reuse possibilities for the content type or the content component
- Additional components or attributes required

The results of the audit concluded into the following proposals of the modules/topics that presented an opportunity for reuse and repurpose. These are individual, standalone topics that can be situated within a chapter map or within other topics, as subtopics.

- Individual book chapters
- Individual checklists from books
- Individual forms and individual precedents
- Book table of contents
- Book abstract
- Table of concordance from books
- Individual course papers
- Speaker/Volunteer bio
- Course agenda
- Individual webinar module (video)
- Video module
- Reference materials (bibliographies, tip sheets, charts, case scenarios)
- Individual case digest
- Course description with learning objectives
- Book update highlights
- Faculty lists
- Author Lists
- Chair faculty lists
- Features and benefits for individual products (marketing)

This being established, the project team was able to commence the first round of testing of the CMS system with the first book. Testing one book was necessary in order to establish any possible glitches in the system. They had to go back a few times and fix the stylesheet and clarify any functionalities within the CMS system.

One vital functionality they needed to understand was how the modular content was structured. The society moved from structured content to structured and modular content which implies that the book's content is marked in XML for what the content is (chapter, quote, title, checklist, example) but in standalone modules. Marking the content with XML tags does not

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25 Ibid
include formatting. Formatting is applied in a rendering phase when the file is outputted to a certain format (PDF, HTML), and this formatting is being done by the stylesheet implemented within the CMS by Oberon Technologies.

The CMS also allows metadata insertion for each and every section. This metadata may include information about area of practice, audience or region, author, etc. enabling an easy search for content.

The final structure of the product, divided by modules (Maps and Topics) is as follows:

Book/product Map
Front Matter (generated automatically by the CMS)
Chapter Maps (for each individual chapters)
Checklist
Individual Chapter Topics within Chapter Maps
Appendices: Forms and Precedents
Appendices: Index

Figure 2: Book map in DITA map view in DITA CMS.

\footnote{Ibid}
Title

<pubmap> Expert Evidence in British Columbia Civil Proceedings

<title>Expert Evidence</title>

<subtitle>Abstract</subtitle>

<keyref>
  <mapref>Case Key Definition Map</mapref>
  <mapref>Legislation Reference External</mapref>
  <mapref>CLEBC Contributors</mapref>
</keyref>

<covers>
  <cip-info>Library and Archives Canada Cataloguing in Publication</cip-info>
</covers>

<frontmatter>
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  <topicref>Contributors—Fourth Edition</topicref>
  <topicref>Preface</topicref>
  <topicref>Acknowledgments</topicref>
  <topicref>Notes to the Reader</topicref>
</frontmatter>

<body>

<chapter-mapref>Expert Evidence in the Context of the Law of Evidence</chapter-mapref>

<chapter-mapref>Large</chapter-mapref>

<chapter-mapref>Choosing an Expert</chapter-mapref>

<chapter-mapref>Pre-trial Disclosure of Expert Opinions and Related Matters</chapter-mapref>

<chapter-mapref>Calling Expert Evidence</chapter-mapref>

<chapter-mapref>Attacking Expert Evidence</chapter-mapref>

<chapter-mapref>The Expert Witness in Court: A Trial Judge’s Observations</chapter-mapref>

<chapter-mapref>Expert Evidence and Administrative Tribunals</chapter-mapref>

<chapter-mapref>Expert Evidence and Mediations</chapter-mapref>

<appendix-mapref>Forms and Precedents</appendix-mapref>

<appendix-mapref>Back Matter</appendix-mapref>
The Chapter map is a subdivision of the Book map, and it contains information about the particular chapter (authors and any additional metadata) and the content of the chapter divided by topics.

Figure 3: Chapter Map
A Topic section is the lowest level there is. The topic section contains purely the content which is tagged accordingly (cases, legislation and links need to be tagged appropriately).

Figure 4: Topic Section

Now that the final structure of the book was established, The Society turned its attention the content that had to be changed to a reusable standard. The process of this change is described in the next section.

Conversion Challenges

The first round of changes had be done by the Legal editor, and involved approximately 3 days worth of work for each entire book. The Legal editor first reviewed the chapter and topic names. The aim was to make them as descriptive as possible, so that when the reader lands on that specific topic, they instantly know what the topic is about without having to look for that
information at the start of the book. The Legal editor also looked for other content (e.g. Forms), that needed to be moved to other parts of the book, such as Appendices.27

The conversion process was scheduled to start at the beginning of 2015. At this point, everything was ready for the first book to be tested. As expected, not everything went smoothly when they started the conversion process. Many issues came up and the content had to be changed accordingly. Following are some of the issues that arose during the conversion process:

**Re-structured front material - Contributors’ list**
The contributors’ list was the first one to be changed. Prior to this change, there was a contributors’ list for each and every edition of the book. Since the adoption of the structured modular content, the contributors’ list is more compact, as all the contributors are named in a single topic. Figure 5 shows the structure of the current front matter in DITA map view.28 The contributors’ list is situated within `<keydefs>`. Figure 6 shows how the contributors’ list looks like after the PDF is outputted from DITA CMS.

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27 Laura Selby, personal communication, September 19, 2016.
Contributors—Fourth Edition

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Index changes
Another major change, is the index ‘see’ and ‘see also’ terms. When a ‘see’/‘see also’ term is tagged within the book, its reference number appears in the wrong place, confusing the reader. In the image down below a reference number appears next to ‘Exclusion of evidence.’ That reference number appears there because there is a ‘see’/‘see also’ term that refers to it, however that reference number should not appear there as it causes confusion. DITA CMS does not have the right functionality to represent these types of index terms correctly. For now, the Legal editors are completely removing any ‘see’/‘see also’ terms.²⁹

Figure 7: Index

Draft reports
preservation, 2.7
production, 2.6, 3.15, 4.2, 4.5,
4.7, 4.8, 5.23, 6.18, 6.19, 11.13
Ethical issues, See Professional
responsibility
Exclusion of evidence, 1.9
relevance, 1.17
See also Expert opinion

Forms and Precedents
Forms and Precedents are a collection of legal forms provided by the government and included in the CLEBC books. Forms are fillable forms and Precedents are completed forms that sample the language that should be used when filling a form. Forms and Precedents are all stored collectively in a Library within the CMS. They are made of screenshots of each page of the form/precedent in order to replicate exactly the format and style of the forms/precedents in the books.³⁰

Forms and Precedents are stored in the Forms and Precedents library (FP library for short) within the CMS. There is one version available for each of the form, therefore, when one forms is updated, it will automatically be updated in all the books the form is used. A multitude of books can use one single form, as all that is required for one form to appear in a book is for the book to have an Appendix map for Forms and Precedents and for the form to be referenced (linked).

²⁹ ibid.
³⁰ ibid.
Dear [name of expert]:

**Re: John Jones v. Acme Widget Ltd.**

As you know, we act for Acme Widget Ltd. ("Acme"), defendant in (the "Widget Litigation") brought against Acme by the plaintiff, John Jones. We appreciate your availability to discuss this matter. Please note that we are seeking to finalize the details of the retainer agreement for your representation in the case. Your expertise and experience are invaluable to our team in efficiently handling this case. We look forward to your feedback and will proceed accordingly.

Best regards,

[Your Name]
A new production process

Once the book is converted to XML DITA, it is ready to be outputted to the desired format. The two formats that CLEBC uses are PDF (for their print products) and HTML (for online). The process of outputting files is very easy, it only takes a few clicks.

Figure 9: This is an example of a chapter from an outputted PDF.

If an employee needs to create another product using part of a book, they can do so by creating a book map and then searching for the desired topics and appending them to the new bookmap. This situation is best illustrated by the user scenarios described in Appendix B and summarized below:
CLEBC is contacted by a volunteer who proposes an idea or a useful resource. The suggested idea sounds promising, however it is not enough for a book, but it is larger than a chapter. It does not fit any of the other CLEBC products either. However, the content is valuable and might be an important tool for lawyers/legal assistants.

Through structured modular content, CLEBC can now search the internal repository of content to find out what other related content they have to this idea. The designated person searches through the repository, finds all related content and decides what content would be suitable to be added to the new product. With a few clicks, a new product is created from the new idea and related existing content. This is possible because of the structured modular content CLEBC adopted.
Part Four: Conclusion

A few of the challenges faced by CLEBC on the course of the project, were mentioned in Part 1 and Part 3 of this report. This concluding section will discuss and analyze the major challenges that the Society encountered throughout this project and how they managed to overcome them. It will also cover the possibilities that the structured modular content provides the Society.

Overcoming challenges

Before the implementation of XML DITA, content was format-specific, which made reuse difficult. Previously, CLEBC was creating, designing and managing content by focusing ultimately on what the product would become. The content was customized to that book, which means that it was not generally applicable to other products without making the necessary changes to the content. That was how CLEBC ensured that they provided the best product to consumers, however, they were not able to reuse that content as it was made with that book in mind.

Currently, as CLEBC leverages content through reuse, extra work is created because the content requires modification (this was discussed in Part One) as most of the content is not created in modules that stand alone and allow for reuse. This was a major change that the new system brought about, however it was not a difficult one as the functionality of XML DITA automatically addresses it. XML DITA enables the content to be produced in modules (each chapter of the book has its own standing map within the CMS), the content is clean and not formatted. Therefore, when a chapter is being used, the need to reformat content disappears. As a result, the editors can simply take the content of that chapter and create a brand new product with ease.

Another challenge that needed to be overcame was the fact that each of books had its own format. If content did not fit within the available pre-XML DITA formats, that content was lost, even if that particular content was valuable to customers.

Thanks to XML DITA and DITA CMS, content is no longer lost, as it is not produced in individual product lines. Content is not formatted at the time of production, but instead, the formatting is applied after the content is outputted. The content can therefore be used wherever and whenever as it has a clean and consistent format. The content can be reused with minimum effort and in the shortest amount of time.
Another challenge was the length of time it took to get valuable content to the market. CLEBC required an effective way to publish content that would replace the traditional planning and development process, which was a time consuming process.

Previously, it took the Society approximately four months to produce a book. Now, it will take them less time based on the ability to reuse and to modularize content. To reuse content, all that is required is creating a new map for that product and linking all the required topics to that map. As a result, the time required to bring the content to the market is much shorter.

Most of CLEBC's content had a short life cycle. The Society wanted to change this since it caused them to miss opportunities to further leverage their content. CLEBC wanted the ability to create different products and offering multiple delivery options with the content already created. With XML DITA, the Society can reuse the content of any product they create, in any way, and as many times as they want. As a result, the Society can now handle and reuse content as they please, in a short amount of time, eliminating the restriction mentioned above.

CLEBC's customers required products that are solution centric and resources that can help them solve their problems efficiently. Previously, CLEBC provided resources that were product centric. Useful content on an issue was scattered among many products and accessing the correct information required thorough research and subscriptions to many products. XML DITA enables the Society to pull together useful content from all of their existing products, no matter the format, and creates a resource that answers the customer's questions. Because all of their content is being stored in the DITA CMS, all they need to do is create a map, and then append all the relevant topics to that map. In a very short amount of time, CLEBC can provide its customers with very useful and subject specific resources, as they are no longer required to format content and go through the previously lengthy production process.

CLEBC offers product packages containing a number of topics/subjects. Generally, not all the topics might be of interest to all the customers. This can make it difficult to increase the sales of an entire package. Previously, the Society did not have a way to pull apart topics from a product package and sell them individually or in separate packages in order to realize more revenue. The Society is now able to take apart individual sections of the book and sell them as a sole product. The effort required in order to do so is minimal, and it can be done within a few minutes as it does not require any formatting.

A further challenge the Society had to overcome was that many of the products were not functional for multi-channel delivery. They were created solely for web and print. The Society identified the need to have their content in a neutral format so that it can be delivered on multiple
devices. Through DITA CMS, the Society can easily output their content in as many formats as needed.\footnote{\textit{Darwin Information Typing Architecture (DITA XML)}}, accessed October 5, 2016, \url{http://xml.coverpages.org/dita.html}

Prior to DITA CMS, product creators at CLEBC did not have an effective way to share information and resources. They recreated the same information for different purposes and therefore effort was duplicated in internal production processes. As all staff will be using the CMS in order to produce and edit content, this will no longer be a problem. They will be able to share information and resources easily, they will not be required to re-create information as all the information can be found within the CMS and re-purposed from there. As a result, the effort will be minimal.

Moreover, content used to be locked into platforms. Having all the content in one place with DITA CMS and published in standalone modules, the content will only have to be produced once. The staff effort and the process is simplified. Creating products by combining content will be done with ease.

**The Future: greater possibilities with structured modular content**

Having installed a new, excellent production system, the Society has started contemplating new product ideas and ways to enhance their existing products in order to better meet the needs of the ever changing consumers. Below are a few ideas CLEBC is considering for new products and product improvements.

Firstly, how-to guides/toolkits would be solution based packages, designed as a collection of content modules aimed to target specific problems/questions that customers might have. The content modules may include: a checklist, precedent form, video demonstrations, explanation and analysis in text form and case digests. Most of the content for the guides/toolkits can be reused from current products, therefore the effort is minimized.

Another product idea is to implement certificate/badge packages that are won through a multi-media product testing the consumer's knowledge. CLEBC would create these packages by using modules of existing content.

Furthermore, their existing products will be enhanced by reuse of other content. Content that is currently used in another topic/book, can be transferred and used for another topic, in order to be more accessible for the consumer.
DITA CMS also enables new delivery methods due to the XML early publishing process. As all the content is published unformatted, the product can be outputted to suit any delivery method. As a result, CLEBC can now easily publish content for any type of format and device.

Finally, DITA CMS leads to enhanced marketing possibilities, as it is now easier to provide product previews to potential customers. Having well structured and descriptive content about their products on their online website, makes a useful tool for finding the right information, which in turn leads to more sales.

The last, but not the least improvement, is efficiency in content creation, production and management. CLEBC now has a single, master source of content, that enables reuse in just a few clicks and facilitates delivery of content in many formats. As CLEBC has products covering any subject of law within British Columbia, they are mostly publishing book updates, therefore new content is not likely to be produced, as much as updating existing content. Considering this, having all the information unformatted, it will be very easy to update any piece of content.

Concluding thoughts
The Continuing Legal Education Society of British Columbia has successfully adopted the structured modular publishing concept that enables them to repurpose their content effectively and keep up with the digital trends. The Content Strategy project proved to be a major structural project for the Society and took several years to implement. During this period the Society had to find the right software to manage their content, which proved to be DITA CMS. They also had to identify what changes need to be made to the content prior to conversion and make those changes. The Society’s effort to implement this project was immense, however it is worth it.

Now that the Society has DITA CMS and XML DITA in place, they will be able to easily create new products to respond to customer demand and reuse existing content from various products in order to create a new product that focuses on specific topics. With DITA CMS, the internal users can ensure that the editing effort is not unnecessarily duplicated and that all the content is up to date. In contrast to the previous system, all changes made to the content can be made once and all the products will be updated.

XML DITA provided the means to fulfil their vision for their content which was to deliver the right content, to the right audience, at the right time, and on the right device or format. The Society was able to implement a software that allows the publishing team to produce and publish structured modular content that can be outputted to any format, for any device, and can be reused in order to create another product with ease.

To conclude, The Continuing Legal Education Society of British Columbia has successfully adopted this new and innovative publishing concept, called structured modular content. This concept allows them to reuse their valuable content effectively and create new products that their
consumers require. DITA CMS is a considerable improvement compared to the previous Word 2003 with XML extensions that the Society was using. Finally, it will be interesting to discover how else the Society will take advantage of this new and innovative publishing concept and what other products they will be able to create with XML DITA and DITA CMS.
Works Cited

Published


Other sources

Marian De Los Reyes, personal communication, September 5, 2016.
Laurentiu Piscuc, personal communication, August 18, 2016.
Laura Selby, personal communication, September 19, 2016.
Appendices

Appendix A: User scenarios obtained from customer feedback.

‘[user looking for help with a specific problem]
Is faced with a problem and wants information and tools on how to do something
Client is coming in for advice on pension division, lawyer wants information and practical guidance. Is not feeling solid on pension division as there is a new regime under the Family Law Act
Doesn’t have time to do extensive research. Wants a quick and comprehensive resource
Goes to the CLEBC family law page on the website and selects Pension Division For Family Lawyers Toolkit
Reviews an overview paper, reads a pensions chapter for more detail, downloads the checklist, and downloads the appropriate forms.

[user who is doing research]
Lawyer is researching a legal issue specific to a case.
She starts with a CLEBC search to find resources that will help her identify what to start with on the subject (concepts, leading cases).
She starts by reading several chapters of a book to get a sense of concepts and cases.
She then notices a case scenario and a video discussion based around the case scenario that helps her better understand the application of the principles she has researched.

[user who is looking for cpd education]
It’s December 15, and Lorraine Lawyer has not completed her hours for the year! What CLEBC products are available to help her avoid disbarment?

[user who is preparing to take a case to trial for the first time]
Is nervous about his advocacy skills
Wants a quick refresher on how to enter documents as evidence at trial
It’s the night before the opening day of trial
Goes to CLEBC website, selects the Advocacy Toolkit and watches videos on advocacy skills on his smartphone while working out at a fitness facility

[internal user]
Program lawyer is meeting with chairs to put together a course on X. An interesting topic is raised, but it is slightly outside the scope of the course and there is no time left on the agenda to cover it
The chairs mention that practical advice on topic X would be helpful to the profession. The program lawyer does a quick search of all CLEBC content in the CLEBC CMS and discovers that we already have some content on the topic in two different books. The program lawyer sends an email to the legal editor who edits that content. They get together and discuss the idea. The content in one book is focused on analysis of the law and does not have practical “how to” advice. Another book has forms and precedents related to the topic. Together they design a product that will reuse existing book content and will require some new content. They contact the course chairs and one of them agrees to prepare a summary of the topic with a checklist. Both chairs agree to do a 30 minute video primer on the topic. The program lawyer and legal editor prepare a project plan. This includes conducting further research on the market for such a resource, a plan for development, an updating plan for the resource, who will be responsible for updating the resource should the reused book content change, and who needs to be notified about changes to any reused content.

[internal user]
Now…
Several books refer to the same form. The form is processed for each book with Word styles applied for the print book, and a stripped version is prepared for the CD version and the online download version.
If the form is changed (e.g., if it’s a court form and a Regulation changes the form), and the form is in 3 books that will be updated in the fiscal year, then the changes will be made by each legal editor, production will revise the form and add the styles 3 times, and will strip the styles 3 times. Three versions of the form will appear in the online precedent collection.
Proposed…
There is one version of the form. It is in XML stored in the CMS. The metadata indicates all of the books it belongs to, the latest currency date. The form is mapped to the books it belongs in using DITA maps.
There is one XML version of the form. When it is needed in a book it is transformed to PDF for print, html for online.
In the online precedent collection, and all of the books, the most current form will appear with the form’s currency date.

[internal user]
The *Discovery* practice manual and *Introducing Evidence at Trial* contain scripts for how to ask questions in discovery and how to examine, cross-examine, tender evidence at trial. The editors search the CMS and discover that there are video demonstrations of these skills. The videos are included in the books (by including a link to video). The editorial board loves the addition of videos and agrees to develop a few more for the next update of the books. The currency and accuracy of the videos become part of the updating process of the book.'
Appendix B: User scenarios illustrating how CLEBC can easily create new products in answer to their customers’ requests.

‘A volunteer contacts us/talks to us in a meeting about an idea or useful resource. The suggested content sounds valuable, but it’s not a full book; it’s not a chapter that would fit in existing practice manuals; it’s not a course topic as it doesn’t fit in any upcoming courses and is not a full-day topic on its own; it’s not a CLE-TV topic as it is more of a resource tool requiring updating. BUT, the content could be a valuable tool for lawyers/legal assistants.

How do we use this content?
We think “This is a valuable module of content that could be combined with other content to create a resource”. The person who received the content may run with the process further or notify another CLEBC content creator.

The CLEBC content person recognizes the value of the content (the content may be from a conversation, a paper, an article). For the purposes of this example the content is practical guidance on pension division under the Family Law Act.

The content person either knows or searches CLEBC’s internal repository of content (e.g., content management system) to find out what we have related to the new pension scheme and finds the following related content:
- A chapter in FLAAP with discussion and precedent pension division clauses
- The prescribed pension division forms in BCFP
- An overview chapter on pensions in Sourcebook
- Two webinar modules from recent Family Law courses
- Course papers associated with the webinar modules from recent Family Law courses.

The content person assesses the information and decides that only one webinar module and paper is required, the Sourcebook chapter is too general, the FLAAP chapter, and the BCFP forms are helpful, and will work well with the practical article prepared by the volunteer. The one thing missing is a checklist of the procedural steps to follow. The volunteer agrees to prepare this new checklist.

The content person also thinks that an interview-style discussion in video might be useful (practice tips, pitfalls to avoid).

The new content (video interview, checklist) could be used in this new toolkit and as modules of content in other existing products.

Within a short time, it would be possible to offer customers a Family Law Pension Division Toolkit.’