

THE SEARCH FOR AN ALTERNATIVE WORKFLOW AT
UBC PRESS: SUPPORT- AND SERVICE-BASED MODELS

by

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A B S T R A C T

University of British Columbia Press (UBC Press or ‘the Press’) has seen a continual reduction in sales, profits, and subsidies over the last three decades. The Production Department is under increasing pressure to reduce costs and produce content in an increasing number of formats. UBC Press has been experimenting with alternative workflows in recent years, and has recently tried the University of Toronto Press’ P-Shift (UTP-Shift, or P-Shift) Support-heavy, XML-early workflow, and Pressbooks’ Software-as-a-Service (SaaS), HTML-based workflow. This report explores why university presses are adopting workflows similar to P-Shift’s and examines why the HTML, SaaS workflow provided by PressBooks is not currently a viable workflow option for many scholarly books from a practical perspective. The report concludes that university presses are choosing workflows because of ease of implementation, lack of disruption, potential for cost reduction, and ability to handle all elements that compose scholarly texts.

Keywords: *publishing; HTML; XML; UBC Press; PressBooks; P-Shift*

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I N T R O D U C T I O N

UBC Press is a mid-sized university press that publishes between 50 and 60 books in a fiscal year and specializes in the social sciences with a focus on law, First Nations studies, and the environment. The Press is renowned for its attention to detail and high-quality standards. The Press' Production Department is composed of four full-time production editors and, unlike many university presses, it does not include in-house designers, typesetters, or technology experts. Cover design, typesetting, conversions, proofreading, and copy-editing duties are outsourced. In-house production editor resources are focused primarily on project management and quality assurance.

There is an ongoing crisis in scholarly book publishing. As Lesley Erickson, a production editor at UBC Press, notes, "beginning in the early 1980s academic libraries began to cut their budgets for scholarly monographs... as a result, university presses experienced a proportional reduction in the number of monographs they sold... At the same time, subsidies for university presses declined while operational costs and manuscript submissions rose" (Erickson, 2).

This trend has since continued, and UBC Press' self-study review completed in March 2014 indicated that "the drop in print book sales to libraries has been significant and sales of ebooks to libraries are not filling the revenue gap. Decrease in sales to libraries is expected to continue for the foreseeable future" (38). The decline in library sales for UBC Press traces a line followed by other university presses.

Furthermore, this decline in sales to libraries is magnified by other changes in the shifting academic marketplace: "The substantial changes to the academic library market in recent years have led to a precipitous drop in hardcover sales. As libraries move to patron-driven-acquisitions (PDA) models and as digital sales continue to cannibalize print – yielding about a third of the amount of revenue – this downward trend will inexorably continue" (16). Because of this developments, UBC Press' Production Department has been experimenting with alternative workflows and the largely untested digital market; "in response to the more general market transformation through digital publishing, the Press needs to assess and modify its current publishing strategy" (18) in order to offset the decline in sales and shifting marketplace. Additionally, the Association of Canadian Publishers' (ACP) provided an extensive subsidy program for ebook creation. The Press continues to remain open to alternative formats and digital approaches to disseminating content.

The impetus for researching alternative workflows at UBC Press stemmed initially from a desire to produce a reflowable, digital document. EPUB was emerging as a standard, offered an alternative to PDF, and the Press wanted to diversify its revenue streams to make up for declining sales to libraries. Initially, EPUB creation happened as an addendum to the traditional workflow, through offshore conversion houses, most notably Innodata and

CodeMantra. The initial rounds of EPUB conversions were partly funded by the ACP digital division, now known as eBOUND Canada. The conversions were not high quality and required significant proofing and revisions by in-house staff and freelancers to meet Press and industry standards.

Holly Keller, the Press' manager of production and editorial services, laid out three requirements for EPUB creation. The new system should (1) not place undue demands on production editors' time, (2) not strain the Press' limited production budgets, and (3) result in a high-quality product.

This motivated the Press to explore alternatives to conversion houses, including post-composition conversion from InDesign by local vendors (hiring a freelancer to create the ebook from InDesign), XML-early workflows (University of Toronto Press' P-Shift and Scribe's Well Formed Document), and a software-as-a-service (SaaS), HTML-based workflow (PressBooks). In early 2014, they decided to adopt UTP's XML-early workflow for most of their books, and they are planning to use PressBooks for selected titles.

This report compares the relative merits of P-Shift and PressBooks, explains why university presses are adopting P-Shift style production workflows, and explores the shortcomings and potential in SaaS and HTML production workflows.

CHAPTER 1: UBC PRESS' TRADITIONAL WORKFLOW

UBC Press' traditional production workflow begins when the acquiring editor passes the manuscript over to the Production Department. The head of the Production Department assigns the manuscript to a production editor, who is responsible for overseeing all stages of the production process and managing freelance staff. UBC Press has four full-time and one part-time editor, each responsible for ten to fourteen books, spanning two seasons, at any given time.

The first step is manuscript cleanup. The production editor or a free-lance editor prepares the Word document for copy editing and typesetting. She adds elements that will appear in the published text such as the copyright page and half titles and then adds simple typesetting codes such as <1> (first-level heading), <Q> (extract), <e> (epigraphs), and <Insert Figure 1 here> (figures, images, etc). Once all of the elements in the text have been identified, the editor applies one Word style to the entire document (usually Times New Roman 11). Manuscript cleanup usually takes four hours at \$25 per hour.

The manuscript then undergoes copy editing, which is outsourced. The copy editor documents changes in the Word file using track changes. Copy editing usually takes one month and costs on average \$2,300 per book.

In-house staff then reviews the copy editor's work and prepare the files for the author to review. They send the author a Word file in which all track changes have been accepted and a PDF that shows all track changes. Working in the Word file, the author makes further revisions and addresses any queries raised by the copy editor (missing references, spellings, and grammatical issues).

When the author has addressed all queries and made any final revisions (this will be the last time that the author can input changes before typesetting), in-house staff reviews the document once more and accept or reject the author's changes. Depending on the author, the number of author revisions, and the schedule/workload of in-house staff, this task is sometimes outsourced to a copy editor. On average, this stage takes about half a week to complete. Once the changes and revisions have been incorporated, the manuscript undergoes preparation for typesetting.

Once author revisions have been addressed, the production editor un-embeds the footnotes using the Editorium's Notestripper and either places them at the back of the book (monographs) or at the end of chapters (edited collections). The file is then converted to an .RTF file and sent to the typesetter, along with the figures, tables, and running heads.

Traditionally, UBC Press has used the same typesetter for all of the books it releases. The typesetter receives the .RTF from in-house staff and proceeds to flow it into InDesign using the Press' design templates. The production editor, in consultation

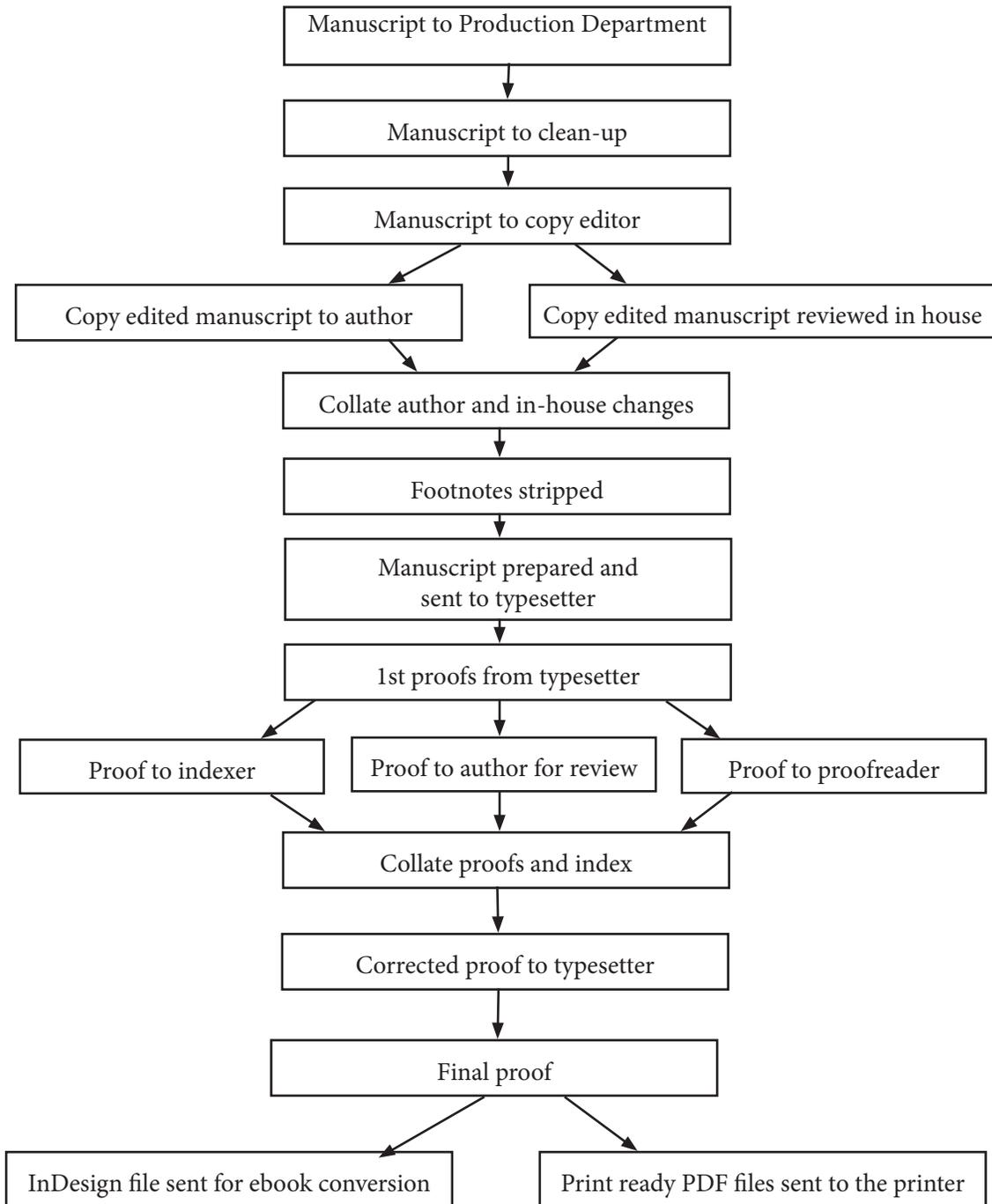
with the typesetter, chooses the template that best suits the book, and the typesetter then applies the appropriate style to each of the tagged elements. The InDesign typesetting process usually takes a few days to a week. Because the typesetter has a number of books in the queue at any given time, however, the turnaround time for each project is usually three weeks (up to six, if the Press has an unusual number of books). The typesetter charges \$5.75 per page, and an additional fee for inputting corrections, preparing diagrams, figures, and tables, and correcting photographs in Photoshop. The typical book costs around \$2,200.

Once typesetting is complete, the typesetter exports to PDF. The production editor sends the PDF to the author, the proofreader, and the indexer. The proofreading and indexing processing happens simultaneously and takes on average one month to complete. The proofing of an average book costs the Press \$750.

When the index is complete and the proofs have been reviewed, the production editor assesses the revisions requested, sends any remaining queries to the author, and collates the various versions into a master PDF for the typesetter to proof. This master proof addresses typographical and textual issues raised by the proofreader, the author, and, potentially, in-house staff. The typesetter inputs the corrections and produces a second proof PDF. This second proof PDF goes back to the production editor, who compares it against the master proof PDF to ensure that all of the revisions have been inputted correctly. The marked up proof PDF is then returned to the typesetter, who inputs the changes. Another proof PDF is produced, and the process continues until the production editor is satisfied that all issues have been addressed and that the typeset manuscript is clean. An average book will undergo three rounds of corrections, with more complex titles taking up to six proofs before all parties are satisfied. The entire master proof checking process takes a week or two.

When proofreading is complete, the production editor sends a print-ready PDF and the cover files to the printer. It takes five to six weeks for a book to be printed, and the total average cost comes to \$6,050.

Figure 1: Traditional Workflow Chart



Attempted EPUB Conversion Methods

Over the past five years, UBC Press has been called upon or given an opportunity to produce EPUBs, either for a book with strong trade potential (such as Paul Litt's *Elusive Destiny*, about John Turner) or through industry programs such the Association of Canadian Publishers (Humble, 11). In addition to offshore conversion houses, the Press has worked with a number of vendors, each of which varied in quality and price. Part of the impetus for adopting an XML-early workflow and exploring alternative options stemmed from the Press' desire to produce EPUBs reliably, consistently, and at a lower cost than any of the options listed below.

Offshore Conversion Houses

Innodata and Code Mantra are content conversion houses offering EPUB and XML conversion services. Both companies offered little in way of quality assurance or back-and-forth communications. Both companies built the EPUB from a PDF. The result was a low-quality EPUB file, converted from an InDesign or PDF file, which often had to be sent back for revisions. In tandem with EPUB production, these offshore conversion houses also produced ePDFs, uPDFs, and a PubXML document for archiving.

The cost for conversions through offshore conversions houses averaged \$316 per book. Linnet Humble notes that, with the ACP subsidies, "During the first round of conversions in 2009... UBC Press only paid \$130-\$560 per book. For the second round of conversions... costs ranged from \$105-\$467" (Humble, 17). UBC Press converted large numbers of files with both Innodata and Code Mantra, who charged by character and hyperlink count. Therefore, the cost of conversion fluctuated between \$105 and \$560.

Local and national vendors

The Press has outsourced EPUB production to Canadian vendors specializing in EPUB creation, a large-scale conversion house, and a local freelancer. These groups offered EPUB conversion services from either PDF or InDesign. The EPUB produced was high quality, there was plenty of opportunity for back and forth Q&A, but the cost was high, averaging between \$400 (for an unlinked index) and \$700 (for a linked index).

Friesens also offers an EPUB production service. Similar to the offshore conversion houses, there was no opportunity for back-and-forth Q&A sessions, the EPUB was built from a PDF, and the quality was lacking. The average price for an ebook produced by a local or national vendor, including a linked index, averaged \$650.

Assessment

The average total cost of producing a print and EPUB file in the traditional workflow model comes to \$5,584 (manuscript cleanup, copy editing, typesetting, proof-

reading, and EPUB conversion), excluding printing costs and in-house overhead. UBC Press has a production schedule of eight months for scholarly monographs and ten months for complex books and edited collections. The production process, excluding acquisition and printing, takes on average 16 weeks.

None of the EPUB production options listed above were viable methods for the Press. The viability of adding EPUBs to the existing production workflow hinged on two factors, low-cost production and high-quality product. In the case of the offshore conversion houses, the Press did not have the time or internal resources necessary to address and fix the production problems and shortcomings of those vendors. In the case of local and national vendors, the Press did not have the financial resources to add an extra \$600 to the production cost of each book, considering the untested return on investment potential EPUB's have for the Press.

None of the EPUB conversion methods available to UBC Press in this traditional workflow met all three of Holly Keller's requirements. EPUB production was either expensive, or low quality, and, in the latter case, often took up valuable time from the in-house production editor to correct. Not being satisfied with the options already explored, UBC Press then went on to experiment with their production workflow, attempting to build EPUB production into their workflow and exploring other possibilities for reducing costs.

Introduction to XML

Extensible Markup Language (XML) is a streamlined rewrite of Standard Generalized Markup Language (SGML) with a focus on the web. SGML “puts the computing power of information technology behind the all-encompassing descriptive power of human language” (Alschuler, 1). XML is a way of expressing data in text-processing applications; “SGML wraps identifying tags, at least one set, around each segment of text in a document” (3).

XML is a system for defining markup languages. Systems of tags, identified by the angle brackets that encapsulate them, are used to specify the nature of the content. A Document Type Definition (DTD) or Schema defines the tags. The DTD is a set of markup declarations that define the valid building blocks of a XML file. The DTD sets up the vocabulary and the structural rules that govern how these tags can be used (which tags can appear within other tags, which cannot, etc.).

XML is not a programming or a presentation language; XML is primarily used to store and exchange data and strives to be a software and hardware independent tool. Given its purpose, many publishers use XML in their workflows as an archival format and save their content to XML to ease the transition to new formats.

In the Association of American University Press’ *Digital Book Publishing in the AAUP Community, Spring 2013, Survey Report*, 32 of 72 surveyed university presses’ reported having adopted an XML production workflow, with an additional eight presses piloting XML workflows over the 2013-2014 season. These workflows included XML-first, XML output from InDesign, and XML output from either typesetter or printer. The proliferation of XML workflows at University Press’ extends to UBC Press’ recent implementation of University of Toronto Press’ P-Shift’s XML-early workflow.

P-Shift’s Support-based, XML-early Workflow

P-Shift Advanced Publishing is developed and implemented by University of Toronto Press. It is an e-publishing workflow that combines eXtyles (editorial software) and Telescope (digital asset management) to deliver an XML-early to raw manuscript conversion service to scholarly publishers. An XML-early workflow is one in which the manuscript is tagged in XML early on in the production workflow, as opposed to after typesetting and a print-ready PDF has been created. The fundamental difference between UBC Press’ traditional workflow and P-Shift’s workflow is the use of a typesetting XML document, which acts as the import file for typesetting in InDesign, and the input file format for EPUB production. P-Shift employs three different XML DTDs to facilitate different parts of the production process. Furthermore, the P-Shift workflow also produces a Hub XML document for archival purposes, which P-Shift suggests will “allow you to effortlessly develop

content for the future” (P-Shift). P-Shift is a support-based system that is designed to perform the majority of conversion, tagging, and document-checking procedures for its clients.

The production workflow starts with initial processing of the manuscript. In the traditional workflow, where UBC Press editors inserted traditional typesetting tags, the file preparation team at UTP applies a unique XML-ready style to each element in the Word document. P-Shift maps every element within a manuscript in order to create a clean XML file that accurately represents the content. Once this work is done, P-Shift runs the document through eXtyle’s editorial software. eXtyle is an add-on to Microsoft Word, which makes mechanical editorial changes such as changing British spellings to Canadian, converting single quotations to double quotations, moving closing punctuation from outside to inside quotation marks, and so on. These types of editorial changes are traditionally done by production editors using Word wildcards or by copy editors. eXtyle also searches for invalid URLs and DOIs (digital object identifiers) and PubMed links.

This step also includes a documentation check, in which the entries in References, Works Cited, and Bibliographies are checked against online databases and errors identified. In books that use author-date style in-text citations, the software also checks whether the in-text citation has a corresponding entry in the References. P-Shift state that running the manuscript through eXtyle “increases editing efficiency, lowers copy editing costs, produces consistent results, shortens production schedules and reduces the number of proofing cycles” (P-Shift). Initial file preparation takes around ten working days, the work is handled by P-Shift staff, and costs are based on character count (\$0.35 per 1,000 characters), averaging around \$200 per book.

After this stage, the manuscript goes through copy editing and author revisions and is then sent back to P-Shift as a Word document for post-processing to prepare for importing to InDesign. The document is run through eXtyle a final time to check that all issues, concerning documentation and broken URLs, raised during the initial-processing stage have been resolved. The Word file is then converted to a Comp XML file, which has been optimized for import into InDesign.

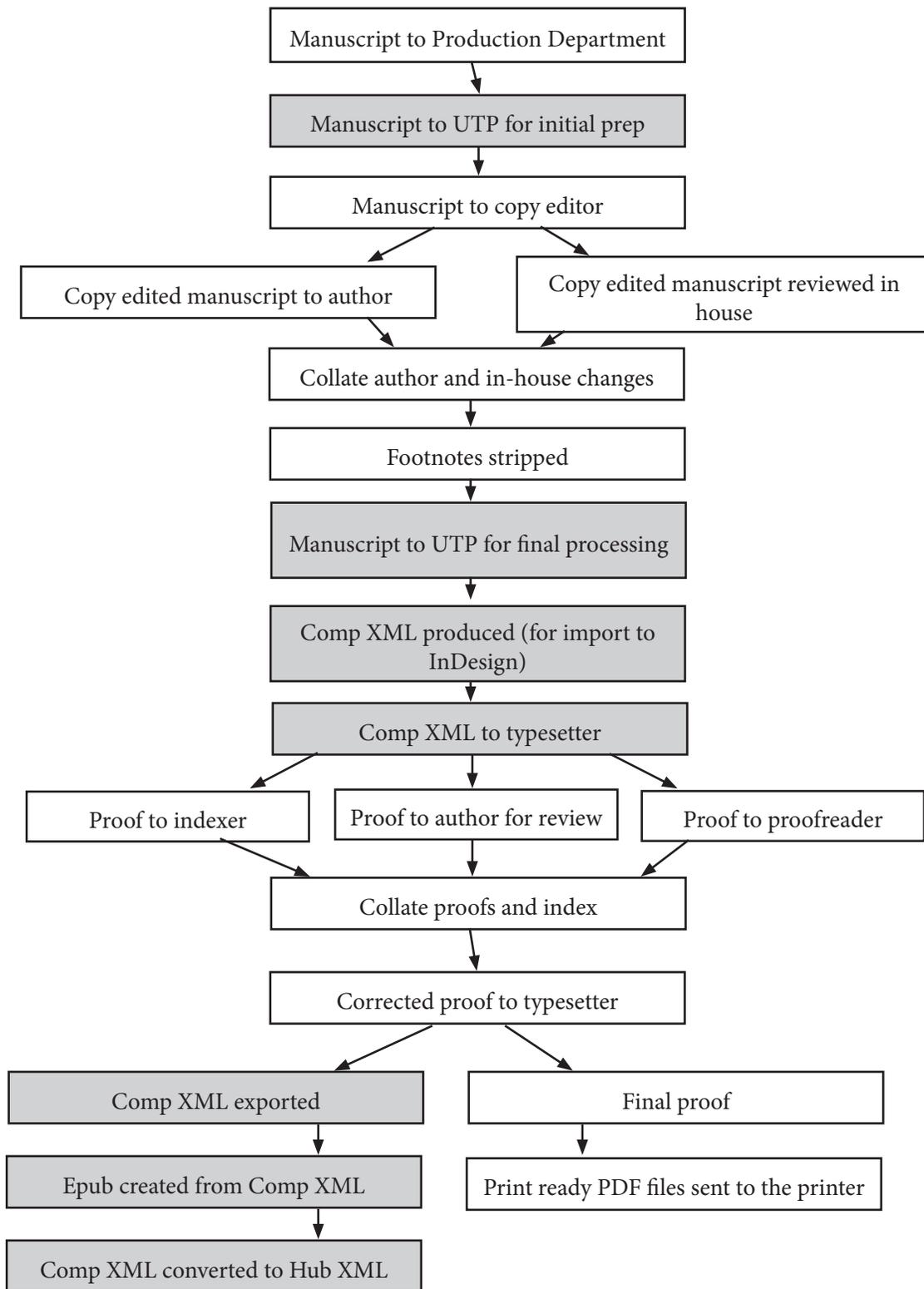
The element inventory lets the typesetter know all of the XML tags used in the file, which are mapped to paragraph and character styles in InDesign. The going rate to typeset XML files is \$2.75 per page for average books and \$3.55 for complex books. Typesetting via P-Shift takes between one and three weeks. Corrections to proofs are captured directly in the exported XML, meaning there is no need to input changes twice, in the print and electronic editions.

Once the manuscript has been typeset and the book proofread and indexed, the index is then also converted to a Comp XML file and typeset. Once the proofing process is complete and the print-ready PDF has been sent to the printer, P-Shift exports the Comp XML to create the EPUB and then converts the Comp XML to a

HubXML file. This file is similar in purpose to the PubXML documents produced by the offshore conversion houses in the traditional workflow.

P-Shift then creates the EPUB using the Comp XML file and a cover image. P-Shift's EPUB conversion process begins by optimizing images and figures for a digital format. P-Shift then checks the exported Comp XML file for any validation issues and checks that all figures, tables, and notes are styled correctly for conversion to XHTML. P-Shift then converts directly from XML to XHTML. P-Shift staff fixes discrepancies between the print-ready PDF and the EPUB manually. The EPUB is then validated and checked across different reading platforms before being sent to the client for final review. Upon approval, the EPUB and a mobi file is delivered to UBC Press. It takes between 3-5 working days for P-Shift to produce a viable EPUB, and costs \$150.

Figure 2: P-Shift Workflow Chart



UBC Press' Experience

The Press' experience with P-Shift has been positive. The Press took one book, Catherine Carstairs and Nancy Janovicek's *Feminist History in Canada: New Essays on Women, History, Work, and Nation* (2014) through the system, and has since decided to use the system for most of its books. UTP's own experience with the system also showed that an XML-early workflow could readily handle even the most complex books. In 2012, it published *The Natural History of Canadian Mammals*, a book with over 600 images and 800 pages.

The introduction of XML has had only a marginal impact on the traditional production workflow and the use of the Press' in-house resources, and long-term it may lead to a reduction of production costs. Since P-Shift was designed with university press workflows in mind, its implementation was straightforward and instantly successful at UBC Press.

Benefits of Initial Processing & Manuscript Cleanup

The Word document that returns to the Press after being run through eXtyles editorial software during the initial file prep stage is consistent and well structured. P-Shift has suggested that this will reduce the amount of time spent copy editing, which will in turn lower the Press' expenditure. To date the Press has only produced four books using P-Shift and has nine books at varying stages of the process and it is too early to assess where the cost reductions will be realized. However, the Press' editors have noticed that the documentation check produces fewer issues in the manuscript. Proofs are a lot cleaner, particularly in books with author-date style documentation, which will benefit the Press, especially since it plans to phase out proofreading by professional freelancers over the next year. The Press is hopeful that a decrease in typesetting costs will outweigh the extra cash spent on initial file preparation (an increase on the traditional workflow of roughly \$100).

Adjusting to Word Styles & XML Tags

The Word document returned after initial file prep is prepped with XML-ready styles, and "uses a variety of visual cues to help distinguish one kind of text from another. The cues included font size, font colour, and indenting" (P-Shift). Different elements are styled by colour dependent on the element.

The move from traditional typesetting codes to Word styles represents a significant change for in-house staff checking the prepped manuscript. In order for the XML workflow to work, every element has to be tagged. When the manuscript undergoes conversion to XML, all visual cues are eliminated, and all that is left are tags; this dictates what gets styled in both InDesign and the EPUB. The Press has had to abandon using the traditional typesetting code and notation system because these

would also be exported in the XML file. In-house staff are finding that the new documents take some getting used to, and some copy-editors are uncomfortable with colour-coding in the reference lists and with eXstyle's documentation check, which can, for example, be inaccurate if in-text citations are formatted incorrectly or if there are spellings errors in authors' names.

Reduced Typesetting Costs with P-Shift

Another fundamental difference to the Press' traditional workflow is the reduced typesetting cost offered by P-Shift. P-Shift's typesetting service is faster, taking on average half the time to lay out a book, and is significantly cheaper at \$2.75 per page, which reduces the Press' typesetting costs by 50%. If the production editor chooses to use UTP's compositors, she send an InDesign file for another book already set up in that template, complete with all the character and paragraph styles. The compositor then uses the sample file to map styles for a new title. The Press can also send a PDF of a book set in the same template, where all of the design elements in the book are identified in it along with the corresponding XML tags. It takes the editor about an hour to mark up the PDF, and to date the Press has provided four of their five most common templates for typesetting by UTP.

P-Shift's EPUB and Mobi Conversion

Another difference from the traditional workflow is the EPUB production method. P-Shift builds the EPUB version of a book from the CompXML file, which the compositor exports from InDesign after typesetting. UBC Press sends the cover image, a print ready PDF of the book's interior, any figures to be included, the CompXML file, and a completed EPUB transmittal checklist (a document outlining all of the items listed and an additional box asking if there are any particular elements that require specific attention). This transmittal checklist is likely to reduce the need for any additional post-conversion troubleshooting, as it highlights peculiarities about a book's content and what UTP should focus on.

Assessment

UBC Press has successfully integrated P-Shift into its traditional workflow and is currently working on producing an entire season of books, about 25 titles on average, using the service. The Press is satisfied with the potential for cost reductions in the typesetting and copy-editing stages and the quality of the final EPUB file. P-Shift is designed by a university press to be implemented with minimal disruption to an existing publishing workflow and to handle the most complex scholarly books. Both P-Shift's documentation and its Website FAQ are consistently revamped and updated to reflect common questions and issues raised by P-Shift's various clients. With each book that UBC Press produces using the P-Shift workflow, issues are ironed out and the learning curve becomes more and more gradual.

Introduction to HTML

HyperText Markup Language (HTML) is an application of XML designed for general purpose use on the web. HTML is the standard markup language used to display Web pages. HTML defines a set list of tags for general prose structures (headings, paragraphs, lists) as well as linkages between resources: hypertext links, images, and most importantly, Cascading Style Sheets (CSS) that govern the formatting and presentation of a document. CSS defines the look and layout of the HTML structure.

HTML is also the fundamental language of EPUBs. HTML is ubiquitous on the Web, and “clean, valid XHTML content plays absolutely seamlessly with everything else on the Web” (Maxwell). HTML could prove to be a valuable archival format for publisher’s content (as the base for conversions), and given the recent development of the CSS3 paged media module, HTML can now be used to create print ready PDF files.

Pressbooks’ Software-as-a-Service, HTML-based Workflow

PressBooks aims to produce a print-ready PDF and EPUB and mobi files from a base of HTML documents and a CSS file. A manuscript is divided up into smaller files, usually chapters. Headings and manuscript elements are tagged using HTML. CSS properties dictate the visual look of each tagged element. The CSS file dictates how the text is laid out as both a reflowable stream (as seen in an EPUB) and as a paged document (as a print-ready PDF). PressBooks is a software-as-a-service system, with a focus on delivering the software rather than service.

PressBooks uses TinyMCE’s in-browser What You See Is What You Get (WYSIWYG) editor and is built on WordPress. This WYSIWYG editor is web-based, platform independent, and built on Javascript. It includes common word processor features and allows users to style and tag elements of a text without having to write the HTML code. It is designed to simplify Web content creation and it is used by applications such as WordPress and PressBooks.

PressBooks aims to make ebook and print production easy and offers exports to PDF, mobi (Amazon Kindle), EPUB, and HTML. PressBooks accepts Word documents, HTML, and direct input from blogs as import formats. PressBooks is free to use, but exports are watermarked. To remove watermarks, prices start at \$25 for an eBook export all the way up to custom pricing for fully developed templates (see the section “UBC Press’ Experience” below for details on the custom template).

PressBooks can be used as a direct input/writing platform by the author, or as an import system. For publishers who want to use the platform as an import system, PressBooks comes into play once the editing is done. The workflow begins to differ

during the typesetting stage, when the manuscript is imported into PressBooks. Graphs, diagrams, and other visual elements are still created externally, but the inputting of text and images occurs within the PressBooks website.

The publisher begins by creating a new book in the PressBooks framework. Creation of a new book leads to the Book Information screen, where metadata can be added (author name, pub date, publisher, title, cover image, copyright notice, etc.).

The publisher can choose between pre-designed themes or an option for custom-theme development. These themes dictate the appearance of the final product. The publisher then proceeds to upload each section of the manuscript to the PressBooks website. Each chapter and piece of front and back matter represents an individual HTML file. Each section appears as an individual file, with front matter broken up into its constituent pages: dedication, introduction, preface, and foreword. Each chapter represents a section. The back matter – index, bibliography, and other sections – is also split into constituent parts.

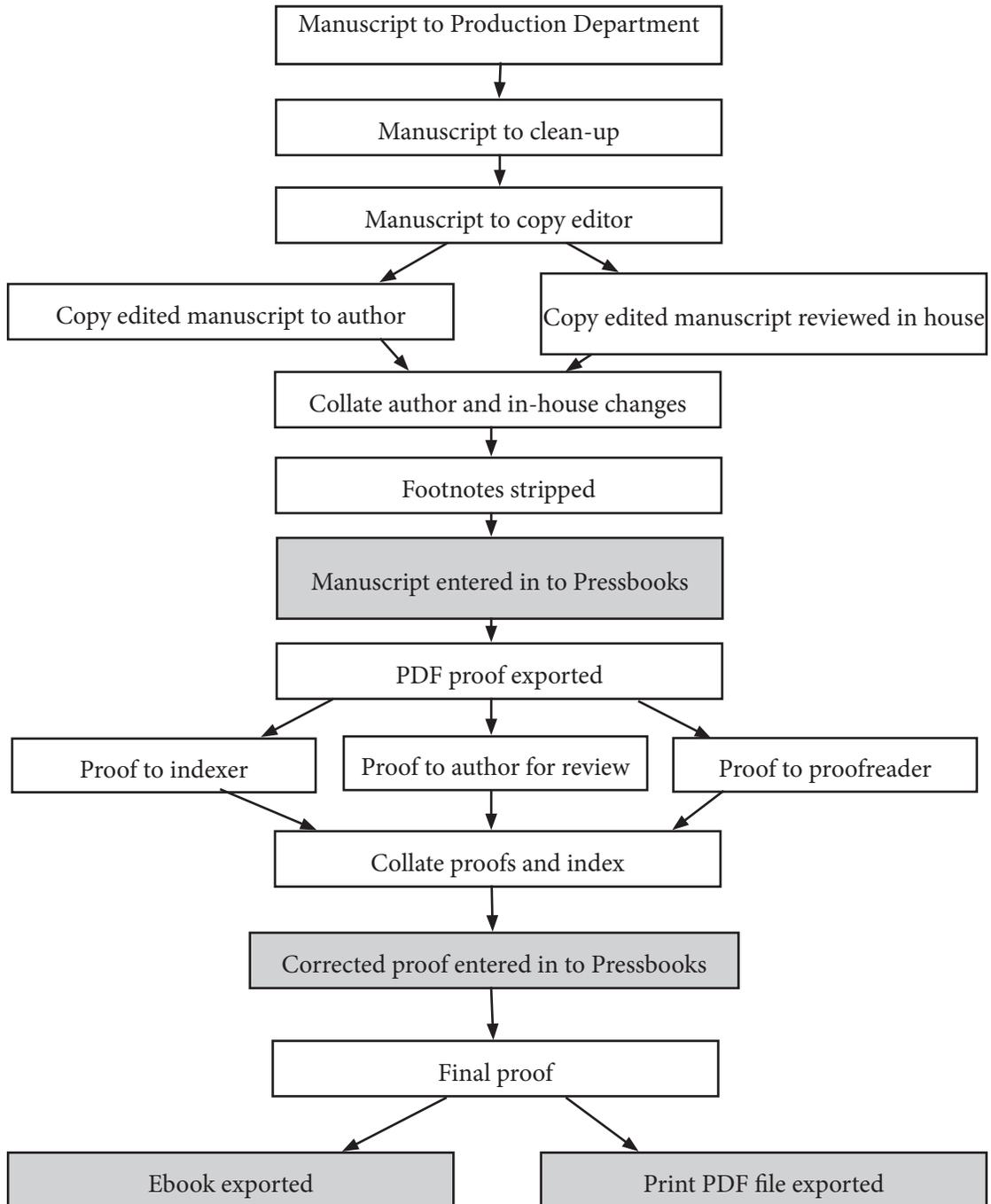
Sections are added by using TinyMCE's WYSIWYG editor, this process is similar to creating a blog post on WordPress. Text is imported from the manuscript piece by piece and saved. The editor includes formatting options for text-styling (headings, body text, captions), blockquotes, numbered and unnumbered lists, page breaks, footnotes, and images and is similar in appearance and use to Microsoft Word.

The WYSIWYG editor applies tags to each element of the manuscript, and these tags are styled in the exported CSS file. This CSS file provides visual styles for each element, dictating everything from type family and size to the placement of running heads. When all sections of the manuscript have been entered into PressBooks via the editor window, the manuscript is available for export. On export, the table of contents, running heads, footnotes or end-of-chapter notes, part openers, chapter openers, title page, and other extraneous matter, are automatically generated.

When the typesetting stage is complete, the content is available for export in a number of formats. PressBooks exports to a number of file formats, including EPUB, mobi, PDF (PressBooks uses PrinceXML to convert HTML to PDF), HTML, Hpub, ICML (for InDesign), XHTML, and XML (PressBooks and WordPress).

Once the PDF is exported, it is sent to the proofreader, the author, and the indexer. Changes are collated into a master proof and then input directly in the WYSIWYG editor. A second PDF proof is exported and a final check is performed. Once the proofing is complete, a print-ready PDF and EPUB and mobi file are exported from the Pressbooks server to the user's hard drive. The print-ready PDF is sent to the printer, and the EPUB and mobi files are sent to the distribution manager.

Figure 3: PressBooks Workflow Chart



UBC Press' Experience

Given the fundamental differences between a Web-based, HTML-first workflow and UBC Press' traditional, print-focused workflow, the act of implementing PressBooks into UBC Press' workflow posed unique challenges. PressBooks struggled to handle elements commonly found in UBC Press books, including end-of-the-book notes, the import and placement of a large numbers of images, tables, and typographic minutiae. This was exacerbated by the limitations of the WYSIWYG interface when compared to InDesign. The disruption that these differences caused consumed valuable in-house resources and time and undermined the possibility of creating a print-ready PDF that satisfies the Press' high-quality standards.

When the Press first considered using PressBooks, it only had a handful of themes, and none of them were suitable for a scholarly book. The Press tried "typesetting" a scholarly monograph with multiple images and found that the existing templates were limited and that the export to PDF didn't work seamlessly if there were more than two or three images per chapter, as it became unpredictable where images would appear upon export to PDF. The system also didn't support end-of-the book notes. To make it work, the Press inputted the text twice –once with linked notes for the EPUB edition, and a second time with the notes stripped and placed at the end of the book for the print edition.

Recognizing that PressBooks had the potential to reduce costs for some of its titles (edited collections with end-of-chapter notes and books with no notes and few images), UBC Press hired PressBooks to develop a bespoke theme for an edited collection for \$2,500. The goal was to see how close a HTML-based system, using Google Webfonts and an extensive CSS file, could come to matching a template designed in InDesign. If successful, the template could be used for future books at reduced costs. Costs of future projects would be limited to inputting, table and chart design, inputting revisions (or corrections), and fine-tuning the typography.

PressBooks successfully designed a template for Jonathan Paquin and Patrick James's *Game Changer: The Impact of 9/11 on North American Security* (2014), even though the book contained a few complex elements such as a two-page table. The EPUB, while beautiful, did not have a linked index. PressBooks does not offer a service capable of converting an index from the print manuscript to a linked version in the EPUB.

Although the project was a success, it brought to light certain limitations with web-based tools (limited typographical control, inability to accept TIFF files), SaaS workflows (requires significant in-house staff attention and resources, which is fundamentally at odds with how university presses are structured), and their ability to handle the scholarly apparatus of academic texts (tables, end of the book notes).

Unlike InDesign, in which the screen displays a replica of what the print-ready PDF will look like, the in-browser WYSIWYG editor shows the content as a reflowable stream of text as it would appear in-browser. The preview button takes you to the Web-version of the book, which appears as a long, uninterrupted (and not paged) view. This preview is suitable for viewing the Web and EPUB versions of the book, but not the print-PDF. For UBC Press, the inability to finely tune elements of the typeset manuscript without exporting to PDF to see the final layout, coupled with limited staff HTML knowledge and the limiting reflowable Web-view offered by the WYSIWYG editor, made designing a high-quality, print-ready PDF difficult and time-consuming, and in the case of books with multiple images or tables, impossible.

In order to preview what the print-PDF will look like, the user has to navigate out of the in-browser WYSIWYG editor to the export page, choose to export to PDF, and download it. Because of this, the typesetting stage is more time-consuming than both traditional and P-Shift workflows. For *Game Changer*, the book that the Press produced in PressBooks, it took one in-house staff member around 14 hours to deal with typographical details such as bad breaks and image placement; PressBooks staff handled the actual inputting and formatting of text and creation of the illustrations.

University Press' are often staffed as minimally as possible and use a host of freelancers to free up in-house staff time. Given the increased pressure on production staff to produce more books with the same resources, their time is highly valued: "the more their time becomes a valuable commodity – one that they cannot afford to spare overseeing every aspect of the production process. The ability to secure freelancers for a project before a project actually begins provides the production editor with greater flexibility in the creation of her long-term schedule and thus more control in her effort to manage the workflow" (Brand, 50). Dedicating large amounts of time dealing with typographic details and image placement alone is not the best use of a production editors' time. Given the nature of university presses, time-consuming tasks are outsourced, and university presses tend to favour support-based workflow alterations over SaaS ones. SaaS based workflows and systems are fundamentally at odds with the nature of university presses.

The Press' staff reported not being able to access the back-end HTML and CSS files; however, this feature is now available in PressBooks. In order for a print-quality PDF to be produced, in-house staff have to spend time inputting and editing text, constantly exporting to PDF in order to review changes, and then alter accordingly back in the WYSIWYG editor. This is a significant departure from the WYSIWYG capabilities of InDesign.

HTML and Web-Typography's Print Limitations

UBC Press requires that print-ready PDF's include CYMK-compressed TIFF (Tagged Image File Format) files for images. TIFF files are only supported on a

handful of browsers, the most ubiquitous of which are Safari and later versions of Internet Explorer. PressBooks is a browser-based editing platform and does not accept the TIFF file format, because it is not universally accepted across browsers and would not render in the WYSIWYG editor or in-browser preview.

There are also limitations to Web typography in general. Kerning and tracking are not readily available functions in TinyMCE's editor. PressBooks did make adjustments to the editor for UBC Press to allow for some tracking. The solution worked, but was time-consuming. While there is basic support for these typographic functions in CSS 3.1 (the widows and orphans command, letter-spacing, and line-height), the user has to edit the code directly to make adjustments. This requires some working knowledge of HTML and CSS.

Inability to Handle Complex & Multiple Elements

Pressbooks' inability to handle multiple figures, photos, and back-of-the-book notes in monographs was a main concern of the Press'. It is hard to control where images or figures would fall on export to PDF when only provided with a flow-oriented preview window in the TinyMCE editor. When UBC Press tried to set a monograph with multiple images using PressBooks, it couldn't get the images to fall on the page in a useable way. While centered images might look appropriate on the web-based preview, or export to EPUB, this was a major issue when exporting a print ready PDF. There were large gaps on the page, and finding appropriate placement for images was a time-consuming procedure. InDesign, by contrast, allows placement of the images on the page in any configuration imaginable and allows for images and colour to bleed. These were harder to implement in TinyMCE's editor. Given the large number of images, figures, and illustrations present in around 75% of UBC Press' titles, the process of inputting images into PressBooks and being satisfied with their placement involved significant amounts of time from in-house staff.

Furthermore, PressBooks does not support end-of-the-book notes. PressBooks is currently only capable of rendering notes at the end of a chapter or the bottom of a page. UBC Press also notes that placement of large tables was problematic. In the case of *Game Changer*, the two-page table could be placed only at a point in the text where a paragraph ended on a recto page, allowing the table to run over a two-page spread. At the beginning of the project, the only place that worked was at the end of chapter, nowhere near the callout. UBC Press books are frequently heavy in tables, which prove as problematic to place for PDF export as images. Together, these issues make the workflow unsuitable for about 75% of UBC Press' titles.

Assessment

UBC Press was successful in developing a print book using the PressBooks platform. The Press was satisfied with PressBooks potential to produce high-quality EPUBs. PressBooks extensively tests across all e-reading devices, and the final EPUB

tested well on Adobe Digital Editions, Radium, Kobo, and iBooks. UBC Press will continue to use PressBooks to develop simple books (ones free of complex tables, end-of-the-book notes, and heavy use of illustrations) and is aware that adopting PressBooks could result in a significant decrease in production costs. The majority of issues and limitations that the Press encountered were results of the difficulties placing images, fine-tuning type, handling scholarly apparatus like tables, end of the book notes, the workflows implementation, and the TinyMCE interface.

Since UBC Press used the system to create *Game Changer*, PressBooks has implemented numerous improvements to its interface, increased the amount of available themes, and took advantage of developments in the CSS3 specification. UBC Press will continue to use PressBooks to produce simple books (those without tables, images, columns, or extensive footnotes and indexes) and are currently planning to use PressBooks to create a student handbook.

CHAPTER 4 : A SUMMARY OF COSTS AND CAPABILITIES

Cost Requirements

The following tables illustrate cost and time requirements for each stage of the production process for the three workflows discussed in Chapter 3.

Table 1: Workflow Cost Comparison

	Traditional	P-Shift	PressBooks
Clean-Up	\$100	\$200	\$100
Copy edit	\$2,300	\$2,300	\$2,300
Typeset	\$2,200	\$1,050	(inputting) \$300 (figure design) \$375
Proofing	\$750	\$750	\$750
EPUB	\$700	\$150	\$100
TOTAL	\$6050	\$4450	\$3925

P-Shift’s XML workflow results in a reduced cost of \$1,600 over the traditional workflow by reducing EPUB production and typesetting costs. Pressbooks’ HTML workflow involves larger costs to develop a bespoke CSS template but has the potential for savings, especially if a template is reused for subsequent books. PressBooks also includes a lower EPUB conversion cost, however the resulting EPUB does not include a linked index. P-Shift is capable of producing a linked index via export from InDesign and as part of their EPUB creation service, while PressBooks does not currently offer this service.

Similar to cost considerations, P-Shift’s workflow involves a shorter time spent typesetting, and reduces the production process by two weeks over the traditional workflow. P-Shift could potentially turn around a file cleanup in one day and it is also flexible when it comes to deadlines. Pressbooks’ workflow includes significant time-savings, including a reduction in time spent typesetting of more than four weeks on the traditional workflow, and an instant conversion to other formats (PDF, EPUB, mobi, ICML, and XHTML). However, PressBooks raises significant technical and input issues, and the typesetting stage is likely to take a long time initially. Were UBC Press to put all of their books through PressBooks, there would still be a typesetting bottleneck because the Press contracts the same freelancer to create all of the titles’ figures and illustrations. UBC Press’ workflow is aimed at completing a title in eight months.

A Comparison of Books Produced

UBC Press tested both the P-Shift and PressBooks workflows with books of similar complexity. The Press tested *Feminist History in Canada*, edited by Catherine Carstairs and Nancy Janovicek, in the P-Shift workflow, and *Game Changer*, edited by Jonathan Paquin and Patrick James, in PressBooks. Both books are edited collections, use the same house-style template, contain figures, photographs, and chapter-level endnotes. These books are representative of roughly 25% of UBC Press' list. A comparison of the length, complexity and number of elements appears below.

Table 2: Comparison of Books Produced

	Carstairs & Janovicek	Paquin & James
Page Count	302	322
Photo Count	11	0
Table Count	0	3
Figure Count	0	3

Standard UBC Press Book Elements

UBC Press focuses on the social sciences, and therefore publishes more titles with complex scholarly apparatus, 75% of UBC Press' titles fall into this more complex category. Both books mentioned above are edited collections and have fewer complex elements than the majority of other Press titles. What follows is a list of typical elements found in UBC Press books, and a quick summary of each workflow's potential to accommodate these requirements.

Table 3: UBC Press Book Elements and Workflow Capability

	XML (P-Shift)	HTML (PressBooks)
Images	Yes	Yes (JPG, not TIFF)
Lists	Yes	Yes
Text Boxes	Yes	Yes (confined to column)
CMYK Colour	Yes	Yes
Linked index	Yes	Yes (time-consuming)
Notes	Yes	Yes
End-of-book Notes	Yes	No
Multiple Images	Yes	Yes (time-consuming)
Multi-page tables and charts	Yes	No
Inserts with Dynamic Layout	Yes	No
Multicolumn Design	Yes	No

Bleeds	Yes	No
Track Changes	Yes	Yes (view previous versions of text)
Mathematical Equations	Yes	No
eXtyles Document Verification	Yes	No
Special Characters and Fonts	Yes	Yes

PressBooks is currently only capable of handling a small number of images, as well as lists, text boxes, RGB colour, end-of-chapter style notes, and special characters and fonts. There is support for multiple images, but it is time-consuming to resolve, for example, placement issues. Conversely, P-Shift is capable of handling all elements present in UBC Press books because the workflow has significant overlap with the Press’ traditional workflow: typesetting still occurs in InDesign; tagging still occurs in Word.

Assessment

Both *Feminist History in Canada* and *Game Changer* are representative of the complexity of 25% of the Press’ titles. The majority of the Press’ output includes a number of complex elements that only P-Shift is currently capable of handling. In order for any workflow to succeed across the majority of titles published by the Press, it has to be able to handle all of the elements listed above. The Press has adopted P-Shift’s XML-early workflow for the fall 2014 season because it can handle all the requirements of an academic text, and because of the ease of implementation. UBC Press will continue to use PressBooks for simple books and singular projects in the future.

P-Shift’s XML-early workflow also achieves all three of Holly Keller’s requirements listed at the beginning of this report. P-Shift results in a reduced cost of \$1,600 over the traditional workflow, potential for a shorter production timeline, and a well structured, crosschecked academic text as output.

Pressbooks’ SaaS/HTML-based workflow achieved the reduced cost requirements and partially satisfied the requirement for quality output. However, it failed to meet some of the fundamental requirements of complex UBC Press titles, which reflected the platform’s inability to handle certain elements and services deemed essential to a university Press’ workflow, such as the limitations of Web typography, and the paged media component of CSS (taking a reflowable HTML document and exporting as PDF).

If a successful PressBooks workflow was developed and implemented, the initial bespoke CSS template would be developed for a one-time fee of \$2,500, and each successful book would see savings of \$1,200 over the P-Shift workflow, and \$2,800 over the traditional workflow. The production timeline would eventually shorten

after technical issues with the bespoke theme were resolved; typesetting in InDesign would be replaced by input into PressBooks; and EPUBs and print-ready PDFs would be delivered simultaneously.

Currently, P-Shift's XML-early workflow is capable of achieving everything that UBC Press requires. Pressbooks' HTML-based workflow is capable of achieving UBC Press' requirements for simpler books (edited collections). The following section examines why university presses are adopting services with extensive support as opposed to stand-alone software-as-a-service workflow model. This is then followed by an exploration of the shortcomings of Pressbooks' HTML-based workflow for a university press.

CHAPTER 5: ADVANTAGES OF P-SHIFT'S SUPPORT-BASED WORKFLOWS FOR A UNIVERSITY PRESS

P-Shift's XML workflow offers significant benefits to university presses. First, the documentation verification helps to produce a much cleaner, and more exact document. Given P-Shift's background as a university press, the process is streamlined to cause minimal disruption to existing workflows. P-Shift does not place additional requirements on in-house production editors, has the potential to reduce costs, and ensures high-quality output in print and digital formats. P-Shift's workflow system is built on a foundation of solid support (efficient customer service, extensive FAQs, quick-turnaround times), and a background-knowledge of how a university Press' workflows functions.

Procedural Simplicity

University of Toronto Press has developed P-Shift's XML-early workflow for other university presses. The success of its implementation at UBC Press reflects P-Shift's understanding of the Press' scholarly publishing requirements and typical workflow and accordingly, the service fits into the Press' traditional workflow with minimal disruption. UBC Press outsources to P-Shift and does not have to bring any additional work in-house. The only significant change, from the perspective of a production editor at UBC Press, is the jump from traditional typesetting tags to P-Shift's XML-ready styles tagging system. Conversely, Pressbooks' demanded significant time and resources from in-house production editors, and fundamentally altered the production workflow.

However, P-Shift involves a back and forth exchange of documents, formats, conversions, and a convoluted amount of work that includes:

- Initial manuscript processing in Word
- Final manuscript processing in Word
- Conversion to PubXML
- Import into InDesign
- Export from InDesign as CompXML
- Export from InDesign as PDF
- Conversion to EPUB
- Conversion to HubXML (archival XML document)

P-Shift's process is not as conceptually elegant as PressBooks, which is more appropriate to produce simpler titles, as it involves fewer conversions and document formats:

- Conversion from Word to HTML (via the TinyMCE WYSIWYG editor)
- Export from HTML to EPUB
- Export from HTML to PDF

However, P-Shift is procedurally simple. P-Shift handles the brunt of the conversions, imports, and exports, and these costs are reckoned to UBC Press as services outsourced. The model that P-Shift has built reflects university presses' tendencies to outsource services and the model's success is that it plays to the immediate needs of the Press; it frees up resources, does not place additional demands on in-house editors, and allows UBC Press to maintain the skeleton of their traditional workflow. Regardless of the conceptual complexity of the model, P-Shift simplifies the production process to the point that UBC Press only has to send the manuscript to P-Shift for initial and final processing.

P-Shift Minimizes Need to Proof EPUB

In the traditional workflow, EPUB production has always demanded a lengthy proofreading process and back-and-forth exchange that took up valuable in-house resources, and proved costly. The extensive documentation verification done during initial processing in the P-Shift workflow, and the transmittal checklist provided before the EPUB conversion process begins, minimizes production problems throughout the workflow. P-Shift's EPUB conversion service does the majority of the work proofing and checking the EPUB, alleviating the in-house editor's workload, and reducing the potential for costly corrections.

Conclusion

Sales of titles in print to libraries are falling, and sales of digital formats are not achieving the same revenue levels. The budgets of the production department are shrinking and workloads are increasing as more books are being pushed through to compensate for shrinking profits and as a consequence staff are required to produce and proof books in multiple formats. University presses' are currently adopting support-based workflows because they help mitigate the lack of in-house resources and budgetary concerns that all university presses are facing. P-Shift has successfully reduced UBC Press' costs, reduced the workload of in-house staff, and produced a high-quality result. The major reason why university presses are adopting these workflows is because of the ease of implementation and the time and cost savings they offer.

Unlike these support-based workflows, knowledge of best practices for producing books from HTML is still an expanding field. Besides organizations like PressBooks, Inkling, Infogrid Pacific, and O'Reilly's Atlas service, there are very few vendors offering HTML workflow software. There is no HTML-based, SaaS provider that offers the support and knowledge of P-Shift's model. Furthermore, the nature of software-as-a-service does not fall in line with university presses' tendencies to outsource.

In and of itself, P-Shift is a convoluted and complex model. It demands many converting, importing, and exporting tasks, and its proprietary nature ties UBC Press to P-Shift for future conversions. However, P-Shift's success can be pinned

on the ease of implementation of the system and lack of disruption to the Press' traditional workflow: an extensive FAQ, knowledgeable employees, a fast turn around time, and its easy implementation within InDesign, which allows for great design flexibility. Its successful adoption at UBC Press reflects the details of the implementation, with the model itself being developed and executed by a third party. This is in contrast with UBC Press' experience with PressBooks, whose model is less suited to meet the requirements of a university press.

Working through PressBooks at UBC Press was only partially successful because of the lack of support and detailed documentation, less so because of the model. There is not an extensive FAQ available (the PressBooks FAQ is still under development), the idea of a HTML workflow is still being developed, and most importantly, the customer service and workload of a tech start-up will never match what University of Toronto Press, Canada's largest university press, is capable of offering. Limitations of the HTML-based workflow are a result of the details of the implementation and corporate relationship, and not the model. It is likely that given the conceptual simplicity of a HTML based workflow, a large service-provider like UTP-Shift would realize more benefits than a smaller university press. A HTML based workflow adopted by UTP Shift could then reckon a cost-reduction in the services offered to university presses by reducing the number of back and forth tasks and conceptual simplicity of the model.

Freelancing Complex Elements

Many of the elements that PressBooks was incapable of handling are not impossible within HTML. EPUBs exist with back-of-the-book note sections, linked indexes, and dense amounts of images and tables. UBC Press was successful in creating complex tables and images, an index, and chapter-level note sections for the print-ready PDF of *Game Changer*. The issue is that these elements are specialized, harder to automate within a system, and often require human input after export to tweak placement and flow requirements. P-Shift has an extensive support and knowledge base: People tagging manuscripts, typesetting in InDesign, and converting to EPUB.

Currently, PressBooks is capable of automating the creation of a large number of tasks and book-level elements. The more complex elements, like back-of-the-book notes and a linked index, have not been automated. In order to prevent in-house staff from spending their time completing these tasks, UBC Press could hire a freelancer to input and place the more complex elements of a manuscript. Successful implementation of any workflow is dependent on its ability to free-up in-house staff resources, not consume them. A move to a HTML-based workflow would involve UBC Press seeking out new freelancers for new tasks, developing capacity to take-on new tasks in-house, or relying on the software provider (as is the case with P-Shift's success) to handle more complex elements and tasks. This would represent a reduction in cost over traditional typesetting, as production of the majority of the book is automated, and a freelancer would only be employed to handle more complex layout elements such as image, figure, and table placement, and typesetting related details

WYSIWYG Developments

TinyMCE's WYSIWYG editor is a WYSIWYG-on-the-web editor. The WYSIWYG display is only faithful to the flowable, browser-based display. It is not as powerful or sophisticated as Adobe InDesign, and is not capable of delivering a true PDF print preview. By design, the TinyMCE editor is WYSIWYG-on-the-web. The preview window reflects what the output will look like on a web page. A WYSIWYG-on-an-ereader editor would be a fundamentally different tool.

TinyMCE is constantly under development, and support is continually added based on user feedback through their forums. However, TinyMCE is designed to preview the browser experience, and InDesign to preview the print. Development of a robust HTML editor moves away from the idea of WYSIWYG, and that of a single-purpose document. It is likely that a successful HTML workflow would either require an elaborate, robust WYSIWYG editor or otherwise be dependent on the knowledge and abilities of a freelancer. The Press would contract a freelancer

with working HTML knowledge to input the manuscript; this would reduce typesetting costs.

There is also the possibility that UBC Press could input the text into PressBooks, produce an EPUB first, and export to ICML for typesetting in InDesign. Exporting the text as XML or ICML is something that has been considered at the Press when discussing possible solutions for handling more complex titles. This would involve styling the EPUB in PressBooks and then typesetting the book in InDesign again. The designer would lay-out the complex elements for the print edition.

CSS Developments

The success of a HTML-based workflow to produce print-ready PDF files hinges on development of the paged media, generated content for paged media, and font modules of the W3C's CSS3 specifications. While these specifications are still in draft status at the W3C, two major commercial tools are available that support its feature set and conversion to PDF: Antenna House and Prince. PressBooks uses Prince for its PDF conversion. These modules are responsible for laying out content in print format (running heads, margins, page size, etc.). As such, these modules and programs are responsible for the disconnect between what is seen in the WYSIWYG editor and what is seen on the exported PDF. To date, no WYSIWYG editor offers a preview of the paged-media components of CSS and no browser offers extensive paged-media support.

The latest Generated Content for Paged Media specification proposes CSS properties and support for endnotes, one issue identified by UBC Press editors when using PressBooks. The latest Fonts module specification includes CSS properties for typographical minutiae, such as kerning, ligatures, and glyph positioning, faced by the Press when dealing with HTML.

An alternative to the drafted W3C proposal for a CSS kerning property is to include the small Javascript modules Lettering.JS and Kern.JS in the source HTML folders, or embedded within the editor, which would enable WYSIWYG-style kerning, similar to the method used in InDesign. Kern.JS is a small piece of Javascript code that gets included along with the HTML and CSS files, and allows for direct, WYSIWYG-style kerning.

One issue with employing these Javascript modules is that they should be used sparingly. Wrapping each letter of the body text in a span tag produces a convoluted and unnecessarily complex piece of code, which is not well formed HTML and in turn could impact the archival quality of the HTML document. Furthermore, both Lettering.JS and Kern.JS are not compliant with accessibility standards and are developed by third parties; the application of these modules is not supported by the W3C.

Current browsers also lack support for TIFF files. A work around would involve including high-resolution CMYK JPG or PNG files, and maintaining image resolution quality by using the “image-resolution: from-image” CSS property. This would prevent any sizing overrides from TinyMCE’s editor and any issues when printing, providing that the image has a resolution of more than 300dpi. Another solution would be to simply convert the TIFF files to a lower quality JPG format for use in the EPUB, and keep the two image sets separate.

Conclusion

HTML is constantly in development, and as such, the paged media, generated content for paged media, and font modules have not yet been settled, and are constantly being re-drafted. Currently, there are no services capable of handling the elements and resolving the issues that UBC Press faced when using Pressbooks’ software. These include end-of-the-book notes; heavy use of illustrations, figures, and tables; and aligning verso and recto text. That is not to say that a HTML-based workflow is not capable of generating a linked index, or handling multiple images, or producing end-of-the-book notes. The issue is that none of the currently available platforms offer these features, either as automated processes or freelance services. However, that does not preclude a university press from hiring a freelancer to manage the SaaS-based system in question. PressBooks is a SaaS based platform, and relies on the user to do the brunt of the work. This is fundamentally at odds with the nature of small to medium-sized university presses with tight budgets and a tendency to outsource production tasks. UBC Press could hire freelancers to deal with the more complex elements of a manuscript. Freelancers that have a solid knowledge of HTML would not be tethered to the limitations of a HTML editor.

It is worth noting that UBC Press is still successfully using PressBooks to produce simple books that constitute some of the 25% of UBC Press titles that do not contain complex scholarly apparatus. PressBooks is being used in conjunction with P-Shift, and does provide a significant reduction in production costs.

C O N C L U S I O N

UBC Press is currently using P-Shift's XML-early workflow to produce an entire season of their more complex titles and in addition, will use PressBooks to produce simple books. P-Shift is a viable option for UBC Press because it aligns with the Press' needs: low cost, high quality, and unencumbering to in-house staff. It is minimally disruptive, matches university presses' tendencies to outsource production services, and is capable of replicating all of UBC Press' books' scholarly apparatus across digital and print formats. Conversely, PressBooks is not currently viable because the HTML-based SaaS model cannot currently handle 75% of UBC Press' books, and would require significant in-house resources to implement.

The fundamental success of P-Shift's workflow is its ease of implementation, lack of disruption, and knowledge of an academic publishing workflow. The workflow model is tailored around university press practices. Pressbooks' SaaS workflow is less viable to university presses because it places extra requirements on production editors, requiring in-house staff to do most of the heavy lifting, and is currently not capable of automating the production, via HTML, of 75% of scholarly apparatus. There is no HTML-based service capable of taking on the brunt of the work, no software-as-a-service program in place to deal successfully with complex scholarly book elements at an automated, or outsourced, level, and no suitable preview window for export to PDF (either in regards to the paged media module of CSS or the in-browser editor).

Of all evaluations of the production model on a conceptual level, it is the practicalities of implementation and the model's ability to meet time, cost, and resource budgets that sway decisions. That being said, university presses concerned with costs should consider platforms such as PressBooks to produce some of the simpler titles they publish. It holds the promise of significant reduction in expenses, and will keep the user abreast of technological developments.

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