

**Accessible eBooks:  
A closer look at the production, challenges and importance**

**by  
Christina Nisha Paul**

B.Sc. (Visual Communication), University of Madras, 2013

Project Submitted in Partial Fulfillment of the  
Requirements for the Degree of  
Master of Publishing

in the  
Publishing Program  
Faculty of Communication, Art and Technology

© Christina Nisha Paul 2022  
SIMON FRASER UNIVERSITY  
Spring 2022

This work is licensed under the Creative Commons  
Attribution-NonCommercial-NoDerivatives 4.0 International  
(<http://creativecommons.org/licenses/by-nc-nd/4.0/>)

## **Declaration of Committee**

**Name:** **Christina Nisha Paul**

**Degree:** **Master of Publishing**

**Title:** **Accessible eBooks: A closer look at production, challenges and importance**

**Committee:** **Scott Steedman**  
Supervisor  
Lecturer, Publishing Program

**Mauve Pagé**  
Committee Member  
Lecturer, Publishing Program

**Adam Stewart**  
Committee Member  
Production and Technical Manager  
Heritage Group Publisher

## **Abstract**

All of us read books for information, education or as a hobby, and with the technological development these days it is important that people who are print disabled have accessible books they can access and read easily. This report is based on my observations and experiences while working on producing accessible ebooks as a *Digital Coordinator* for my internship at *Heritage Group Distribution*. Most publishers in Canada are enrolled in the Benetech certification project which aims to produce born-accessible ebooks. This report is a compilation of hands-on experience and interviews conducted with people who are currently striving to produce accessible content. The aim is to understand the different production challenges and realize the importance of accessible ebooks as they create equal opportunities and make everyone feel included.

**Keywords:** Accessible ebooks; ebooks production; Digital conversion; Alternative text; Print disabilities; Inclusivity.

## **Dedication**

To my mom, Punitha Mary, dad, Steven Jude Paul, and my everything, Mario Jude.

## **Acknowledgements**

I'd like to begin by saying a huge thanks to the publishing staff at SFU and my HGD family. I had worked in the publishing industry before I joined MPub, but I came into the course with a blank mind. Now that I've finished the course with great knowledge and experience, it was a real privilege to be able to study MPub.

I thank Patrick Helme, Rodger Touchie, Don Gorman, and Adam Stewart for giving me the opportunity to work and learn at Heritage House Distribution. They've been very supportive during my internship, and I'm happy to be a part of the HGD family.

I would like to take this opportunity to thank my supervisors from my previous companies who contributed to who I am today. I traveled across the world not knowing what would await me here in Canada. It was quite a struggle in the beginning, but I'm extremely happy and grateful for where I am in life now. I am happy about how I've grown professionally over the two years of my journey at SFU.

I also thank my cohort, who are such wonderful friends, and for making me feel a part of the community.

# Table of Contents

Declaration of Committee .....	ii
Abstract .....	iii
Dedication .....	iv
Acknowledgements .....	v
Table of Contents .....	vi
List of Abbreviations .....	viii
<b>Introduction .....</b>	<b>1</b>
Internship at Heritage Group Distribution.....	3
Report Structure.....	4
<b>Chapter 1. Producing an accessible ePub.....</b>	<b>5</b>
1.1. What is an ePub? .....	5
1.2. Born-accessible ebooks.....	5
1.3. Heritage Group Distribution .....	6
1.4. Production process for creating an ebook at HGD .....	7
1.5. Case study on the postproduction conversion process .....	9
<b>Chapter 2. Features of accessible ebooks .....</b>	<b>12</b>
2.1. Reflowable vs Fixed Layout.....	12
2.2. Alternative Text or Image Descriptions .....	14
2.3. Text-to-speech .....	14
2.4. Accessibility Features Checklist.....	15
2.5. Metadata .....	17
<b>Chapter 3. Challenges in producing accessible ebooks .....</b>	<b>19</b>
3.1. Human and Financial Resources .....	19
3.2. Who is responsible for the alternative text? .....	21
3.3. Conversion, Print vs ebook publishing dates .....	22
3.4. Upgrading devices and formats .....	23
3.5. Digital Rights Management – To DRM or not to DRM.....	23
3.6. Technology Gap – Amazon Kindle vs Kobo.....	24
<b>Chapter 4. Importance of accessible ebooks .....</b>	<b>26</b>
4.1. What is print disability? .....	26
4.2. Why are Accessible ebooks important? .....	27
4.3. From the audience.....	27
4.4. There is always room for improvement .....	29

<b>Chapter 5. Global Overview and support by the government .....</b>	<b>31</b>
5.1. The Marrakesh Treaty .....	31
5.2. Support from the Canadian government .....	31
<b>Conclusion .....</b>	<b>33</b>

## List of Abbreviations

ABC	Accessible Books Consortium
ACP	Association of Canadian Publishers
CELA	Centre for Equitable Library Access
DEI	Diversity, Equality and Inclusivity
DRM	Digital Rights Management
HGD	Heritage Group Distribution
GCA	Global Certified Accessible
NKW	Newgen Knowledge Works Pvt. Ltd
NNELS	National Network for Equitable Library Service
TOC	Table of Contents
TTS	Text-to-speech
WIPO	World Intellectual Property Organization

## Introduction

*“Accessibility is a lot of work. But it’s important to remember: this is work that always should have been done. The work before was incomplete.”*  
—Amanda Leduc<sup>1</sup>

Electronic publications have great potential for users with print disabilities to gain access to information that might otherwise be inaccessible to them. As smart technology has developed and become common, so too have digital books. For example, a 2019 PEW Research Centre survey found that 72% of adults in the United States read books, of whom 37% claimed to read only print books, 28% to read both print and ebooks, and 7% to read only ebooks; a similar trend is seen in Canada.<sup>2</sup> The COVID lockdown measures from 2020 to 2022 have also had much impact on book-buying trends. Although three quarters of the books purchased were print books, the sales of ebooks and audiobooks trended upwards.<sup>3</sup>

There are many physical, functional, and phenomenological features of ebooks that have no equivalent in print, but what makes them stand out most is its potential for accessibility. Books are read for information, education and entertainment purposes, but are print books accessible to all? The answer is no. People with “print disabilities,” i.e., a learning disability that impairs comprehension, a physical disability that prevents holding or manipulating a book or a visual disability, cannot access print books.<sup>4</sup> In other words, print books are not accessible for readers with disabilities like dyslexia, amputations, blindness, or blurred vision, whereas ebooks can be.

Ebooks are not the beginning for accessible books. Indeed, attempts to make more accessible books for people with disabilities began more than two hundred years ago.<sup>5</sup> The first method developed to help people with visual disabilities was Braille, a

---

1 Leduc, “Hosting Accessible Events.”

2 TonerBuzz, “Paper books vs eBooks statistics, trends and facts 2021.”

3 BookNet Canada, “The impact of COVID on book buying.”

4 CELA, “What is a print disability?”

5 Joe, “The development and availability of accessible books.”

system of raised dots that can be read with fingers. Audiobooks first appeared in 1932 as recordings of books on vinyl records done at a recording studio for *The American Foundation for the Blind*.<sup>6</sup> E-readers were introduced in 1998, but only really took off with the introduction of Amazon's Kindle in 2007. The quality and popularity of devices like e-readers and smartphones have resulted in a mass market for ebooks and audiobooks.<sup>7</sup>

The advent of ebooks, for the first time in history, provides the blind and other print-disabled readers access to books at the same price as print books.<sup>8</sup> Ebooks are cheaper to produce and distribute hence they could be sold at a cheaper price compared to print books or audiobooks.<sup>9</sup> Accessibility means having the ability to access. In other words, it describes whether a product or service, in this case the information and entertainment in books, is designed to be used by someone with a disability or impairment. Digital content is more flexible because it can be accessed by various hardware devices, like computers or smartphones, that are able to run assistive software technologies. Readers who cannot access print materials are able to access that same information using ebooks. For example, blind readers can use a text-to-voice feature to listen to content and navigate using voice commands. People who are partially blind or have low vision disabilities can make adjustments to the font size, font face, and background colour of the presented text to make it more legible.<sup>10</sup> In other words, ebooks have the potential to revolutionize the accessibility of information better than audiobooks because they are easy to produce, retain the look and feel of a printed book allowing the user to use features like highlighting and are less expensive.<sup>11</sup> Also audiobooks are just recording of the book read aloud; however the text-to-speech feature on an ebook is a computer generated voice which could be modified as per the users preference for e.g., choose accent and voice gender. Listening to audiobooks is a passive experience while on the other hand the text-to-speech feature is an interactive experience as you can use other features of the ebook while still reading.<sup>12</sup>

---

<sup>6</sup> Thoet, "A short history of the audiobook, 20 years after the first portable digital audio device."

<sup>7</sup> Joe, "The development and availability of accessible books."

<sup>8</sup> Brady, "Accessible Ebook Publishing in Canada: The Business Case."

<sup>9</sup> Publishing Pulse, "Audiobooks vs eBooks vs Physical Books: Pros and Cons of Each."

<sup>10</sup> Brady, "Accessible Ebook Publishing in Canada: The Business Case."

<sup>11</sup> Publishing Pulse, "Audiobooks vs eBooks vs Physical Books: Pros and Cons of Each."

<sup>12</sup> Inclusive Docs, "The Difference between Audiobooks and TTS Enable Publications."

The Accessible Books Consortium (ABC) was launched in June 2014 by the World Intellectual Property Organization (WIPO) and a group of partners to boost the number of books in accessible formats for people with print disabilities around the world. The secretariat of ABC is located at WIPO's headquarters in Geneva and its advisory board provides technical expertise and ensures transparency and efficient communication within the community. Their efforts and the resources that they share in order to advocate for people with print disabilities appear to have gained much traction in Canada.<sup>13</sup> A survey conducted by Booknet Canada in 2018 examined how readers used ebooks and found that approximately half of all digital readers regardless of their abilities used accessibility features of some kind.<sup>14</sup> These features, however, are not only popular with the people who use them 87% of Canadian consumers say that they value inclusion and 92% of consumers are more likely to support a business that is both physically and digitally accessible.<sup>15</sup>

### **Internship at Heritage Group Distribution**

For my professional placement, I worked as a *Digital Coordinator* for Heritage Group Distribution (HGD), a Canadian distribution house that coordinates the production process for different publishers, including Heritage House, Rocky Mountain Books, TouchWood Editions. I was responsible for the production, quality, and distribution of ebooks for these publishers. I had the opportunity to witness, observe and study the Canadian digital books market, attended meetings, and read newsletters that revealed that the most salient topic in the Canadian publishing industry right now is accessible ebooks. Reader expectations and government initiatives have wrought real change to workflows and upgrades to production processes in order to meet the demand to create accessible ebooks. One of the major projects I worked on was the Benetech Certification program – a Global Certified Accessible (GCA) independent third-party certification to verify ebook accessibility – that aims to help publishers build born-accessible content and certify production workflows to ensure that they produce accessible content from the start.<sup>16</sup> This hands-on experience working on an electronic publication, incorporating

---

<sup>13</sup> Accessible Books Consortium, "About."

<sup>14</sup> Harkonen, "How do readers use ebooks?"

<sup>15</sup> Brady, "Accessible Ebook Publishing in Canada: The Business Case."

<sup>16</sup> Born-accessible, "About Us."

accessible features and discussing requirements with the certifiers (eBOUND) are both the inspiration and an important data source for this report.

## **Report Structure**

This report begins by defining what ebooks are, then moves on to describe their production and features. Chapter 3 discusses the challenges in producing accessible ebooks. Chapter 4, on why ebooks are important, is based on my interview with a print-disabled student who shared her experiences of how difficult her life would be without accessible ebooks. The final chapter provides a global overview of accessible publishing around the world, and the government resources available to promote the use of these new technologies in Canada.

# Chapter 1. Producing an accessible ePub

## 1.1. What is an ePub?

EPub is the short term used for electronic publication as well as a file format that uses the “.epub” file extension. This format is supported by many e-readers (e.g., Kobo), and compatible software is available for most smartphones, tablets and computers (e.g., iBooks). EPub became the official standard of the International Digital Publishing Forum in September 2007, and the Book Industry Study Group (BISG) endorses ePub3 as the best choice for packaging content. ePub3 defines a distribution and interchange format for digital publications and documents. This ePub format provides a means of representing, packaging, and encoding structured and semantically enhanced web content for distribution in a single-file container.<sup>17</sup> The ePub format is an archive file comprising three components OEBPS folder which has the actual contents of the ebook, META-INF folder contains the ebook’s metadata information, and Mime Type which is the basic ASCII text file at the root of the archive.<sup>18</sup> Indeed, the BISG advocates for the universal adoption of a single file format for the global book publishing industry.

The typical process to create an accessible ePub comprises six steps:<sup>19</sup>

- Set up the required software
- Conversion
- Authoring
- Add accessibility
- Package the ePub
- Validate the ePub

## 1.2. Born-accessible ebooks

Ebooks which are built accessible right from the beginning rather than by converting one to include accessibility features postproduction are called “Born-Accessible” ebooks.<sup>20</sup>

---

<sup>17</sup> W3, “EPUB 3.2”

<sup>18</sup> Edit Epub, “Understanding the EPUB Format.”

<sup>19</sup> Constantopedos, “Creating an accessible ePUB.”

<sup>20</sup> BookNet Canada, “Producing “born accessible” books.”

The digital revolution and ongoing advances in technology have made it possible to create accessible content if the content is produced digitally, it can be born-accessible. Bookshare a non-profit tech company operates the largest library of accessible ebooks in the world. The Benetech initiative believes that this is the right time for the publishing world to seize this era of opportunity and produce born-accessible content. This initiative not only encourages publishers to work towards producing accessible ebooks but also helps them by identifying possible improvements in the production workflow and working to resolve challenges in the ePub production process.<sup>21</sup> During my internship at HGD, while I was working on the Benetech certification project my biggest understanding and the lesson that I learned from the process was that producing born-accessible ebooks are much easier and cheaper compared to working on ebooks that were already produced without including accessible features.

### **1.3. Heritage Group Distribution**

HGD (Heritage Group Distribution) is a leading Canadian book distributor and one of Canada's largest independent book suppliers that offers a wide range of titles on a variety of subjects. The distribution house is located in Surrey, BC and specialises in providing services like bibliographic data management, print and ebook distribution, international customs clearance, warehousing and storage, and invoicing for Canadian independent publishers. The main three publishers for whom the team at HGD takes care of the complete print and ebook production and distribution are Heritage House, Rocky Mountain Books, and TouchWood Editions. HGD tracks the monthly and annual sales as well as sales trends for each individual publisher and runs promotions to boost book sales.<sup>22</sup>

For ebook conversion, distribution, and sales management, HGD works with eBOUND Canada, a not-for-profit organization that helps and supports the advancement of digital book management for Canadian publishers irrespective of their level of expertise.<sup>23</sup> Most Canadian publishers find it challenging to produce ebooks in-house, as did HGD. eBOUND provides a helpful and comprehensive list of vetted vendor

---

<sup>21</sup> Born-accessible, "Why Born Accessible."

<sup>22</sup> Heritage Group Distribution, "About Us."

<sup>23</sup> eBOUND, "About Us."

conversion houses that offer ebook conversion services. Furthermore, eBOUND Canada is in a partnership with Benetech Certification, a project to help publishers produce born-accessible content to ensure that everyone has equal access to learning materials. To date, the Canadian publishers who have completed the Benetech Certification include House on Anansi, Annick Press, Athabasca University Press, ECW, Goose Lane Editions, Invisible Press and Playwrights Canada Press. HGD and a number of other Canadian independent publishers are in various stages of the Global Certified Accessible process but have not yet become fully certified.<sup>24</sup>

#### **1.4. Production process for creating an ebook at HGD**

From 2011–15 HGD produced ebooks in-house, then they used conversion houses to produce ebooks until 2019. It is to be noted that these conversion houses were not suggested by eBOUND, HGD decided to go with a conversion house suggested by eBOUND as they would be the liaison between the vendor and the publishing house. In 2020, however, the substantial time and resources invested for satisfactory final quality resulted in the decision to outsource the conversion process to a conversion house suggested by eBOUND, Newgen Knowledge Works (NKW) Pvt. Ltd. NKW is strongly recommended by eBOUND and produces ebooks for Canadian publisher Greystone Books as well as other publishers like Oxford University Press, Peter Lang and Walter Kluwer. NKW is a Benetech Certified Accessible Content Conversion Vendor.<sup>25</sup> Adam Stewart the production manager at HGD says, that they had to spend a fair amount of time with NKW when they first started to develop the ebook house style for e.g., eliminate half-title pages, move copyright page to the backmatter, define linking protocols. NKW has this all on hand now and hence they don't have to do a book-by-book assessment since they know very well what the publishers (Heritage House, Rocky Mountain Books and Touchwood Editions) need.<sup>26</sup>

When the conversion of ebooks is outsourced, the technical work in-house is reduced to very little or no work at all. From tagging and conversion to packaging and validating, the process is taken care of by an expert team. 70% of Canadian publishers

---

<sup>24</sup> Born-accessible, "Certified Publishers."

<sup>25</sup> Newgen Knowledge Works, "Accessibility."

<sup>26</sup> Stewart, Interview.

outsource their ebooks production to conversion houses like NKW.<sup>27</sup> The production process for ebooks when employing the services of a specialised conversion partner comprises eight steps:<sup>28</sup>

1. The final print interior and cover PDF is uploaded to the archives by the publisher.
2. A package of the print PDF and the cover is sent to the conversion house.
3. The conversion house team assesses the files and gets back to the publisher with any queries. Since the final print file PDFs for different titles are sent in batches to the conversion team, they would first assess if the PDF file isn't corrupt and then they compile a spreadsheet with details that include the complexity of job, the number of images and float elements (tables, boxes) in the book and if the corresponding alternative text is provided, and whether the package includes the insert pages if the title has one. This step is repeated until no queries remain, which is usually completed in one round as NKW sends all queries together for the batch of titles sent.
4. The conversion house sends a quote for the conversion along with the assessment spreadsheet which would also confirm whether the ePub will need to be a fixed layout or reflowable ePub.
5. The publisher examines the quote, consults with the stakeholders, confirms it is within budget, sends their approval to the conversion house.
6. The conversion process takes 7-10 business days, and the ePub is then delivered to the publisher.
7. The publisher conducts eProofing, the crucial process of quality control to ensure that the ePub file meets the standards of the publishing house. The first important check would be to see if the ePub is like the print file, in most cases it is but this is not very much possible in picture-heavy reflowable ePubs. Some important checklist points include the frontmatter, the live links embedded in the table of contents, and the removal of any unusual spacing.<sup>29</sup> Any needed corrections to the ePub are sent back to the conversion house. This step is repeated until no corrections remain.

---

<sup>27</sup> Brady, Interview.

<sup>28</sup> Heritage Group Distribution, "Print to ePub workflow."

<sup>29</sup> Heritage Group Distribution, "ePub Proofing."

8. Lastly, the ePub gets uploaded and distributed to online retailers and libraries for sale through Coresource, during this process it also gets run through ePubCheck tool to double-check and confirm that it is valid ePub.

## 1.5. Case study on the postproduction conversion process

My experience as a digital coordinator responsible for managing the production of ebooks showed me that it is always easier to produce born-accessible ebooks than to update an already converted ebook. This case study looks at an ebook that was updated with accessible features after its initial conversion without those features.

*The Distilleries of Vancouver Island* is a 312-page book with 119 images, published in April 2021 by TouchWood Editions, that was not a born-accessible ebook. When eBOUND approached HGD for a submission for the Benetech Pilot Certification program, this ePub was selected for assessment. At the very first stage in the project, HGD did not really have a clear understanding of what the assessment was all about, they were only briefed that the ePub would be assessed for its accessibility features. This ePub was technically complex because it has many images, multiple TOCs (different sections), coloured styles, sidebars, and the fact that it was being reworked after the first conversion made the process more challenging. After the first assessment, HGD received a long list of missing requirements:<sup>30</sup>

- Alternative text or image description missing for all images
- The title page has been set as image
- Inline styling not done, and secondary elements aren't tagged
- Glossary and bibliographies should be marked up using list elements with appropriate role attributes.
- Headings must be identified using HTML heading elements from <h1> to <h6>.
- Page titles—The <title> element is important for accessibility. The HTML <title> element presents a vital way for users of assistive technology to orient themselves. Screen readers announce the document title when they load HTML document pages. Hence, it is recommended to provide the correct XHTML <title> for each document based on the chapter/section headings in the ePub.

---

<sup>30</sup> Heritage Group Distribution, "9781771513357 - Detailed Summary Report".

- Page breaks—Page breaks are listed in navigation document and available in the content, but it is not accessible. It is recommended to add the text "Page" in front of page numbers so that when an Assistive Technology user comes upon a page break they don't just hear a random number. The readers may not realize this is a page break, and until reading systems support the semantics it is best to add this text.

The ePub failed the first assessment with a score of only 32%.<sup>31</sup> It is to be noted that only after receiving the first assessment report from eBOUND, HGD got a clear understanding of what the requirements are to pass the certification. After HGD received the assessment report, I worked on incorporating the requirements. The first step was to unzip the ePub and start adding the tags to the HTML files. The production manager wrote the alternative text for the images, and I incorporated them into the HTML files. Every time I added a tag and checked the output, the ePub threw up an error. I could not add "epub type" tags. We decided to discuss this with eBOUND, who suggested we outsource the work to NKW whose staff have expertise and experience with HTML and CSS to get the job done quickly. I had already invested a whole week into the project and fallen behind schedule on other tasks, so the production manager approved the decision to outsource this work to NKW. Beforehand, however, I sent a complete list of all the requirements with a brief introduction to the project to NKW requesting a quote. To our surprise, our having provided the alternative text for the images reduced the cost of the conversion significantly. The newly accessible ePub of *The Distilleries of Vancouver Island* was delivered to us five days later.

Once I received the new ePub, it was e-proofed. Since this project had special requirements, I unzipped the ePub and checked the HTML files to ensure that all the requested tags were incorporated. The ePub passed the internal quality assessment and was sent to Benetech Certification for assessment. We received the second report in one week; this time the ePub scored 81%, a good score compared to the last, yet still a fail. Benetech Certification does not disclose the exact score threshold for a "pass."<sup>32</sup> The second assessment flagged a few minor fixes to the HTML tags, but the major correction recommended was to add extended image descriptions for complex images. This revision to the ePub was conducted in-house by the production manager. The third

---

<sup>31</sup> Heritage Group Distribution, "9781771513357 - Detailed Summary Report".

<sup>32</sup> Born-accessible, "FAQs."

revision of the ePub was sent for assessment December 2021, and HGD passed the certification by scoring 100% in the third attempt, now the last step is to add the metadata to the ePub and redistribute it as an accessible ebook.

The Benetech Certification requires that three ePubs pass their assessment. Our team and HGD now appreciate that *The Distilleries of Vancouver Island* was a poor choice as a first submission because of its many images. The process would likely have gone smoother and been completed sooner had we selected a simple ebook and then proceeded with a complex one after getting a better understanding of the project. The most important lesson learned was the vital role that alternative text plays in the production process of accessible ebooks. Adam Stewart the production manager says, “Though we had a great challenge working on this title it was a good learning opportunity to tackle such a complicated ePub as the first entry in the Benetech Certification program. We feel like we now have the knowledge to handle most kinds of ebooks and their demands in regard to accessibility.”<sup>33</sup>

The costs for outsourcing ePub conversion to NKW ranges from \$0.50 - \$0.90 per page depending on the complexity of the source material, whereas image descriptions range from \$2.84 to \$12.78 each.<sup>34</sup> In other words, the cost for writing alternative text for one image is five times the cost of converting one PDF page to ePub, and the high costs of producing the alternative text for picture-heavy books in ePub formats make them less viable on the digital marketplace. Though NKW is producing ePubs for HGD since 2020 they were all not accessible ebooks; all these ePubs miss the requirements that were listed in the first assessment report. HGD’s participation in the Benetech Certification project was an eye-opener that HGD decided to produce born-accessible ebooks moving forward from Spring 2022 season. However, it seems not very possible to add accessible features to ebooks that were already produced before this project. To have the accreditation, the Benetech project requires that all ebooks produced after signing up for the project be accessible hence this does not affect the progress of HGD in attaining the certification.

---

<sup>33</sup> Stewart, Interview.

<sup>34</sup> Heritage Group Distribution, “Quote from Newgen.”

## Chapter 2. Features of accessible ebooks

To make an accessible ePub, a list of features needs to be added during the conversion. An ebook is accessible if it can be read as audio using ebook readers or on such multifunctional devices as an iPad, or by using software on a computers or mobile phone. Some of the most common text-to-voice software includes JAWS, WINDOW EYES and KURZWEIL. PDF files cannot be considered accessible ebooks because PDF documents can comprise a series of images; unless the PDFs are tagged and styles are applied, they are not navigable by a screen reader. ePubs built using Digital Accessible Informative system (DAISY) and HTML formats are accessible.<sup>35</sup>

### 2.1. Reflowable vs Fixed Layout

The two possible ePub layouts are reflowable and fixed layout. As its name suggests, in a reflowable layout all contents of the page adjust their orientation to fit into any screen size. This type of layout is flexible and can easily adapt to different devices. Hence, this is the standard and preferred layout. Fixed layout is the opposite; the contents of the pages are static and the elements are fixed in defined places.<sup>36</sup> Following provides a detailed comparison of reflowable and fixed layouts.<sup>37</sup>

Reflowable Layout	Fixed Layout
<ul style="list-style-type: none"><li data-bbox="302 1255 799 1285">• The text will perfectly fit the screen</li> <li data-bbox="302 1558 799 1692">• Font sizes can be increased or decreased and font faces changes by the reader</li></ul>	<ul style="list-style-type: none"><li data-bbox="876 1255 1373 1633">• The contents of the page may slide off the edge of the screen, more like a printed book. The text and images of the screen are paginated and do not adjust to the screen. Instead, the reader must use the zoom and scroll functions to read</li><li data-bbox="876 1654 1315 1684">• Font sizes and faces are fixed</li></ul>

---

<sup>35</sup> University of Waterloo, "Accessibility and ebooks."

<sup>36</sup> Harman, "Reflowable vs Fixed Layout – Which is the Best Layout for your eBook."

<sup>37</sup> Ibid.

<ul style="list-style-type: none"> <li>• Reflowable layout is accepted by most ebook readers like Kindle, Apple iBooks, Nook and Kobo</li> <li>• Images can be anchored with text and then set to wrap around the object. Recommended for books with fewer images and figures and such text-only books as novel, fiction, and non-fiction</li> <li>• The text-to-voice feature, zoom, search and highlighting text are available for the reflowable format, also multimedia video and audio elements can be anchored and provided inline with text.</li> <li>• The final look of the ebook is determined by the user's screen and chosen options, not the designer</li> <li>• More affordable as compared to fixed layout because the conversion of a print PDF into a responsive and reflowable ePub format is automated.</li> </ul>	<ul style="list-style-type: none"> <li>• Few devices support fixed layout natively, and some devices do not support the format at all, e.g., Amazon accepts fixed layout only for children's illustrated books</li> <li>• Best suited for such picture-heavy books as children's illustrated books, graphic novels and manuals because, for these texts, the specific placement of the images is essential to their content and needs to be paginated with the text</li> <li>• Fixed layouts can support animations and video embedded in the ePub as well as the text-to-voice feature to access zoom, search and highlight options</li> <li>• The designer has full control of the final look of the book layout</li> <li>• More expensive because the contents of the ePub need to be tagged and interactive features added manually.</li> </ul>
---	---

The table makes clear that there is no “best” option for all circumstances. Both layouts serve a purpose. Reflowable ePub may be more accessible and user-friendly, but picture-heavy books like atlases and technical manuals with complex diagrams can only be converted into fixed layout ePub.<sup>38</sup>

---

<sup>38</sup> Harman, “Reflowable vs Fixed Layout – Which is the Best Layout for your eBook.”

## 2.2. Alternative Text or Image Descriptions

Alternative or “alt” text is explanatory descriptions for images in an ePub that are convey how the image is related to the content. In an accessible ePub, the alternative text is tagged into the html files such that it too is read aloud when using a text-to-voice feature and is indexed by search engines. Alternative texts are not included for decorative images.<sup>39</sup> A good alternative text should be brief and not include “image” or “photo of”. The alternative text also supports the reading experience of visually impaired readers, hence it should have sufficient description to the image content.<sup>40</sup> Contrary to having sufficient information, the alternative text should be as concise as possible, by avoiding very long description and instead writing no longer than 100 characters. Some of the common points to follow while writing alternative text is to use correct grammar, end whole sentences with a period, avoid descriptions for decorative images. For images with text, it is best to have the same exact text in the alternative attribute, and if functional images (for e.g., a logo or a button) are used to initiate actions rather than to convey information, the alternative text should convey the action that will be initiated rather than a description of the image.<sup>41</sup>

## 2.3. Text-to-speech

Text-to-speech (TTS) is a read aloud feature in an ebook. This is done by a computer in a robotic voice with no emotions, unlike the narration of an audiobook that is usually recorded by a professional voice actor (or the author).<sup>42,43</sup> In recent times there has been an influence of Artificial Intelligence (AI) narrators for audiobooks, HGD distribute ebooks to Scribd and from this platform we received an email about how audiobooks narrated by AI are becoming more mainstream. Another platform was Speechki and to our surprise when we checked a demo of the narration it wasn't synthetic at all and sounded so human, they promote their platform saying that we could create an audiobook from text in just 15 minutes. Audiobook production is expensive and AI narrations lower much of the production cost however, the publishing industry does not seem to be happy with this

---

<sup>39</sup> Harvard University, “Write good Alt Text to describe images.”

<sup>40</sup> Ibid.

<sup>41</sup> Siteimprove, “Accessibility: Image Alt text best practices.”

<sup>42</sup> Turvey, “Using read aloud functionality.”

<sup>43</sup> Speechki, “About.”

technology. Amazon-owned Audible which is both retailer and publisher has held an anti-synthetic narration policy and took down titles that were flagged to have AI narration.<sup>44</sup> The tagging in an accessible ePub is the crucial mechanism that allows for this reading. This process will be discussed in 2.4 below. At the NNLES Accessible Publishing Summit 2019, staff publicly compared the text-to-voice feature’s functionality in a properly tagged accessible ePub and a poorly converted ePub with no accessible features. The output of the poorly converted ePub was so shocking that the user could barely understand the content.<sup>45</sup> This was a powerful demonstration of why it is essential to use proper tags during conversion. An example of good tagging – Fixed-layout ePubs are already not accessible in nature so while conversion if phrases/sentences are placed within the span tags instead of individual words this would improve the readability significantly; on the other hand, an example for bad tagging is having an empty alt text and not assigning role as “presentation” in the markup tags for decorative images in the ePub will break up the flow of the narrative.<sup>46</sup>

Rendering tables into an ePub can be problematic or time-consuming, but the solution is not to set tables as images. Doing this may take away the content completely from print-disabled users; the TTS software skips images and reads the description provided as alternative text. For this reason, it is important to render tables as properly formatted HTML <table> elements within the ePub.<sup>47</sup>

## **2.4. Accessibility Features Checklist**

The best way to verify the features that need to be included in an ePub is with a checklist.<sup>48</sup> As a digital coordinator, having a checklist of features needed made the process simple and easy. The entries in the checklist just need to be provided to the conversion house to make sure that they are included in the ePub.

A list of features in an accessible ePub can never be exhaustive because new and innovative features are always in development; the list below, therefore, is a

---

<sup>44</sup> Maughan, “AI Influence on Audiobooks Grows – As Does Controversy.”

<sup>45</sup> NNLES Canada, “Common Accessibility issues in ePub files.”

<sup>46</sup> Accessible Publishing, “Accessible Publishing Best Practices.”

<sup>47</sup> Daisy, “Tables.”

<sup>48</sup> Brady, Interview.

recommendation of current best practices ranked by importance.<sup>49</sup> It explains and lays the foundation for a well-designed electronic book that uses a simple format.<sup>50</sup>

- *Choosing the right layout:* Use a reflowable layout whenever possible because fixed layouts are impossible to customize and difficult to navigate. Reflowable layouts are more user-friendly for people with print disabilities. This is not feasible for image-heavy books for which the layout is equally important to create meaning for e.g., cookbooks or guidebooks as these books not only depend on images but on the layout as well.
- *Publish in ePub3:* ePub3 is preferred because it is more developed and flexible and is based on the web language HTML, the most accessible format. In 2022, most retailers accept ePub3. In other words, ePub3 provides the best experience in terms of accessibility, navigation and presentation.
- *Alternative Text:* The alternative text tells print disabled readers what is happening in the images they cannot see by providing a description of the information it conveys.
- *Set title page as text:* It is easier to set up the title page as a complex table or an image, but setting any text as images makes it less accessible.
- *Include headings:* Headings are critical for navigation; they tell the reader that a new section has begun and specify its title. Every section title of the book, including the front and back matter, should be set up as a heading. The headings should also identify their hierarchical level, e.g., <h1> or <h2>. These indicators are important in terms of accessibility and not just for styling.
- *Cascade headings:* Heading levels should flag the importance of the section. Arranging the heading levels makes the structure of the book clear to the reader. It is important to use only one heading per section and to encase the chapter number and title in a single set of heading tags.
- *Link all sections to the table of contents:* An accessible ePub will have links to every section of the book for easy navigation from cover to cover. A good heading structure will provide a better reading experience, and sections that are excluded from the navigation file can be difficult or impossible to access.<sup>51</sup>

---

<sup>49</sup> AccessiblePublishing.ca, “Accessibility Features Checklist.”

<sup>50</sup> Ibid.

<sup>51</sup> AccessiblePublishing.ca, “Accessibility Features Checklist.”

- *Textual table of contents*: The TOC is a tool that allows readers to familiarize themselves with the contents and structure of a book and should be set up as a list with active links to each section.
- *Emphasizing text*: The tags that are present within the ebook offer semantic meaning to the assistive technology and enable a smooth reading by the text-to-voice feature. It is important to mark which words should be vocally emphasized. These valuable tags should be taken care of and preserved throughout the production and conversion of the ePub.
- *Avoid drop caps*: Whenever a screen reader encounters a change in text style, it treats it as a new sentence. In other words, “The” is read as “T” and “he” so it is suggested to use a different presentation layout than dropcaps.
- *Avoid all caps*: Avoid all caps and use title case whenever possible. Text-to-speech engines are programmed to interpret words in capital case as acronyms and will read each letter aloud individually.<sup>52</sup>

An ePub that addresses all the points in this checklist of basic and general requirements will be a highly accessible ebook. The final step in creating an accessible ePub is adding the features into the metadata. This tells potential buyers and readers what accessible features the ebook offers.<sup>53</sup> This checklist would not need a revision often, at this point the Benetech Certification which is globally accepted certifies a book 100% accessible if it includes all the points in this checklist. Since the certification for a publisher must be renewed each year with ePub assessments, the checklist might be updated in the future while new accessible features are created.

## **2.5. Metadata**

Accessible ebooks are discoverable because of their metadata. No matter what the accessible features in an ePub are, it is the metadata that brings them to the attention of its target audience. Discoverability is key for any business and providing high-quality metadata to retailers has been proven to generate more sales.<sup>54</sup>

---

<sup>52</sup> AccessiblePublishing.ca, “Accessibility Features Checklist.”

<sup>53</sup> Ibid.

<sup>54</sup> Inclusive publishing, “Metadata.”

To investigate whether Canadian publishers are using metadata effectively, I interviewed an independent Canadian metadata consultant, Amanda Lee. She says, “In my experience, publishers in Canada are really working hard to add accessibility information to their ONIX metadata. Some aren’t there yet, either because their databases aren’t capable of storing that information, because they’re not sure *how* to add that information, or because they’re not yet at a place with their digital production to be able to ensure that data is accurate, but everyone I’ve spoken to is aware that this is an option and is either working toward it or hoping to do so soon.”<sup>55</sup>

Lee also said that the heart of the issue is that majority of the reader-facing websites and retailers do not display accessibility metadata and users are unable to filter for accessible features when they search for ebooks.<sup>56</sup> Publishers can provide and send this information, but readers still cannot filter their searches until retailer websites make this feature a part of their ecommerce interfaces. It behooves publishers, publishing organizations, advocates, and data providers to put pressure on retailers to use and display accessibility metadata. The first step, however, is to ensure that publishers *send* the data, even if it is not being used yet.<sup>57</sup>

---

<sup>55</sup> Lee, Interview.

<sup>56</sup> Ibid.

<sup>57</sup> Ibid.

## Chapter 3. Challenges in producing accessible ebooks

While Canadian publishers are working towards producing accessible ePubs,<sup>58</sup> there remain challenges to overcome. One major challenge is the human resources available in an organisation. The average number of employees at a Canadian publishing house in 2019 was 20, with a median of five.<sup>59</sup> Small publishers (gross revenue under \$1 million) employed an average of three people, whereas mid-sized publishers (\$1–\$10 million) an average of 22 employees.<sup>60</sup> It is also to be noted that the publishing industry is not as lucrative as other industries; publishers generally cannot afford to pay high salaries for their staff, and a typical entry-level job in publishing pays \$30,000 to \$35,000 per year.<sup>61</sup>

Some of the most common challenges in producing accessible ebooks ranked from most to least include:

- Human and Financial Resources
- Who is responsible for the alternative text?
- Conversion, Print vs ebook publishing dates
- Upgrading devices and formats
- Digital Rights Management – To DRM or not to DRM
- Technology gap – Amazon Kindle vs Kobo<sup>62</sup>

### 3.1. Human and Financial Resources

Laura Brady, Board Member of Accessible Books Consortium, Chair of eBOUND Canada and Director of Cross-Media at House of Anansi says, “The biggest challenge in the production process of accessible ebooks is the resources or manpower in the publishing house.”<sup>63</sup> A person responsible for digital production learns a lot about ebooks and best practices in their workplace. They gain expertise in the techniques, and as the

---

<sup>58</sup> Born-accessible, “Certified Publishers.”

<sup>59</sup> Ontario Creates, “Industry Profile – Book.”

<sup>60</sup> Ibid.

<sup>61</sup> Association of Canadian Publishers, “Industry Overview.”

<sup>62</sup> Brady, Interview.

<sup>63</sup> Ibid.

years go by expect to be paid for that knowledge.<sup>64</sup> Unfortunately, the Canadian publishing industry as a whole is not high salaried, and it is tough to retain staff who can leverage their expertise in industries like web development for two to three times more pay. This rapid staff turnover is described as the see-saw of Canadian publishing.<sup>65</sup>

“Canada is full of micro publishers with two, three or four staff who wear five or six different hats,” says Brady.<sup>66</sup> She recalls an incident that happened two years ago when she was invited to Pajama Press in Toronto to provide mentorship and training on accessibility to the in-house conversion person; to her surprise the same person was also the publicist and office manager for the publishing house. Most publishers have about five full-time employees who serve multiple roles in the organisation and may only work on ebook conversion three to four times a year. It is hard to retain technical knowledge without regular practice.<sup>67</sup>

The limited human resources in a publishing house leads to the outsourcing of the production of ebooks to a vendor.<sup>68</sup> Brady estimates that “70% of ebooks produced in Canada gets outsourced to a vendor.”<sup>69</sup> eBOUND, a non-profit organisation that promotes the production of ebooks and accessibility, has compiled an extensive network of vendors and helps manage the relationship between these vendors and publishers (see Chapter 1).<sup>70</sup> It is the responsibility of the publisher to evaluate and provide timely feedback to the vendor; HGD’s production manager, Adam Stewart, says that it took much to-and-fro with NKW, the vendor with whom they work, to calibrate the final product with their house style.<sup>71</sup> It is quite unusual to have an in-house ebook production; in Canada, only House of Anansi and ACW Press do the conversion in-house. eBOUND makes it much easier by managing these vendors.<sup>72</sup>

---

<sup>64</sup> Brady, Interview.

<sup>65</sup> Ibid.

<sup>66</sup> Ibid.

<sup>67</sup> Ibid.

<sup>68</sup> Stewart, Interview.

<sup>69</sup> Brady, Interview.

<sup>70</sup> Ibid.

<sup>71</sup> Stewart, Interview.

<sup>72</sup> Brady, Interview.

### 3.2. Who is responsible for the alternative text?

Alternative text is very important for an accessible ebook, but it too poses a challenge to many Canadian Independent publishers because of the required human and financial resources.<sup>73</sup> “The alt text is a huge deal”, says Brady, who made it the responsibility of the acquisition editor at House of Anansi and Groundwood Press about four years ago.<sup>74</sup> She says this was not easy to do. Ideally, authors would provide the alternative text for images with their manuscripts, but they often are poorly suited to the task because image descriptions need to be written from a neutral point of view; authors get too emotionally involved in the content.<sup>75</sup> Anansi used part of a Canadian Heritage Funds grant to hire an intern whose job was only to write image descriptions for the company’s website and children’s books.<sup>76</sup>

Groundwood Books is particularly invested in the image description project, and it was critical to get the budget allotment: “Every single image description, for every single book, they make sure it matches the tone of the book so that the image descriptions aren’t introducing a different language or different tones to the book.”<sup>77</sup> Brady provided an example to explain how crucial and difficult to craft alternative texts can be: the Groundwood title *This is How I Know* is a bilingual book in Anishinaabe and English about a child discovering the different seasons with her grandparent.<sup>78</sup> The image description writer wrote about a scene in which the child is wearing leather slippers and wrote “moccasin.” The publisher questioned the choice, to which the image descriptor replied that it is a tricky and possibly unfamiliar word to a pre-school reader. The team had a fruitful internal debate before deciding that a three-year-old could indeed understand what a moccasin is and retained it.<sup>79</sup> All of the image descriptions are copyedited at Anansi; this is a fairly robust process absent in most other Canadian publishing houses. Image descriptions on their website are also copyedited.<sup>80</sup>

---

<sup>73</sup> Stewart, Interview.

<sup>74</sup> Brady, Interview.

<sup>75</sup> Ibid.

<sup>76</sup> Ibid.

<sup>77</sup> Ibid.

<sup>78</sup> House of Anansi, “Mii maanda ezhi-gkendmaanh / This Is How I Know.”

<sup>79</sup> Brady, Interview.

<sup>80</sup> Ibid.

“The alternative text is one big fat project, and the success of the project is that the editors, authors and publishers are well-focused into it which is very unusual, and it took a lot of time to get to this place,” says Brady.<sup>81</sup> The alternative text should be ready before ebook production begins to avoid costly iterations of the production process.<sup>82</sup>

### **3.3. Conversion, Print vs ebook publishing dates**

The conversion is the most crucial step in the production process, this must either be done in-house or outsourced to vendors. As discussed in section 3.1 with limited staff in publishing houses it is easier to outsource ebooks production to a conversion house. HGD produces at least 20 ebooks per season and about 80 a year, if these books are to be converted in-house it would be quite a struggle to meet the due date. Or when the job was outsourced to freelancers, the ePub files had issues with quality. eBOUND plays a vital role in helping publishers with a list of reliable conversion houses. For the ebook to be accessible and have assistive technology, as well as ensuring they are converted specifically to the house style, it is essential that the conversion is done by the experts.<sup>83</sup>

Though most publishers aim to publish both print and digital versions of a book simultaneously, there are some challenges to overcome.<sup>84</sup> There is an eight-week delay between when files are sent to the printer and the print book publication date, as it takes four weeks for printing and four weeks for distribution.<sup>85</sup> This eight-week period should be enough to get the ebook into the marketplace, but collaborating with conversion houses can be tricky.<sup>86</sup> According to Brady, working efficiently and following a few best practices during the typesetting stage can save a lot of time during the conversion stage.<sup>87</sup> At Anansi, the production team did a lot of work to create a set of best practices on how to use InDesign for typesetters and designers, who use a vigorous set of rules while typesetting the print files.<sup>88</sup> A lot of foundational work can be done with InDesign,

---

<sup>81</sup> Ibid.

<sup>82</sup> Ibid.

<sup>83</sup> Stewart, Interview.

<sup>84</sup> Ibid.

<sup>85</sup> Brady, Interview.

<sup>86</sup> Ibid.

<sup>87</sup> Ibid.

<sup>88</sup> Ibid.

like using master pages and using styles effectively, which can help during the conversion stage. Even for books with fixed layout, Anansi uses rigorous standards and a style sheet; deviations from the stylesheet get highlighted in turquoise so they can see be corrected before they affect the digital production.<sup>89</sup>

### **3.4. Upgrading devices and formats**

Modern technology is always expanding to improve and produce new features, and manufacturers and designers employ planned obsolescence as an aggressive business strategy. Although upgrading devices and formats is not a huge challenge for ebook production, it is still a concern. Brady says, “The best thing to do about this is to subscribe to newsletters, attend webinars or training keep you updated on the advancements in the industry.<sup>90</sup> The newsletter from Inclusive publishing<sup>91</sup> is an excellent resource to follow updates in the industry, and DAISY conducts free webinars every Wednesday that are exceptionally useful resources for accessible publishing, such as – Creating and Editing Accessible ePub, Validating and Conformance Checking of ePub, Ways People with Print Disabilities Read and many more.<sup>92</sup> eBound Canada also shares many helpful resources and plans to publish more in the future.<sup>93</sup> For data-related and market research content, BookNet Canada is reliable.<sup>94</sup>

### **3.5. Digital Rights Management – To DRM or not to DRM**

Digital Rights Management (DRM) is a way to protect copyrights for digital media; by adding it to the ebook it limits copying and use of the copyrighted work.<sup>95</sup>

DRM makes ebooks more complex to use and sell, it limits the publisher’s options to sell ebooks directly or through niche channels making it unpopular among its consumers. DRM can prevent an ebook in the industry-standard ePub format from being

---

<sup>89</sup> Brady, Interview.

<sup>90</sup> Ibid.

<sup>91</sup> Inclusive Publishing, “The Inclusive Publishing Newsletter.”

<sup>92</sup> Daisy, “Webinar Series.”

<sup>93</sup> eBOUND, “Resources.”

<sup>94</sup> BookNet Canada, “Products.”

<sup>95</sup> De Groot, “What is Digital Rights Management?”

transferred from one e-reader to another even if it supports the ePub. Hence users would not be able to read them on other devices. For instance, both Apple and Kobo support the ePub format but they each use a different DRM system. So, an ebook bought on Apple's iStore cannot be read on Kobo e-reader. This issue is similar to Amazon as well: Amazon's website has its special DRM applied and hence the ebooks can be read only on Amazon devices and apps. And this technology allows libraries to lend ebooks by managing the loan expiry. DRM though protects your content from piracy and gives some protection against copying this would affect the sales of the ebook. DRM is usually applied by the retailer using a complex technology making it difficult to be sold through other smaller retailers or even on the publisher's own website.<sup>96</sup> It is up to the author and publisher to decide if the ebook requires DRM or not.

### **3.6. Technology Gap – Amazon Kindle vs Kobo**

This dichotomy is a challenge for the reader, not the publisher. Jillian Sloane is a print-disabled student who lost her eyesight ten years ago. When asked about the challenges she faces with ebooks, she identified the device or platform she uses to read ebooks as the biggest.<sup>97</sup> Sloane says ebooks were introduced to her by a family member who gave her an Amazon Kindle eReader. She found the device so helpful to read ebooks, the only hobby she could pursue after losing her eyesight.<sup>98</sup> After her first Kindle eReader wore out, she started using the Amazon Kindle app, which was very similar. She then wanted to try out the Kobo app because she wanted to support a Canadian business.<sup>99</sup> Unfortunately, the Kobo platform did not live up to its promise; she had difficulties in the navigation compared to Kindle. Sloane says, "It doesn't work. I really wanted to support the only Canadian digital books company and felt disappointed."<sup>100</sup>

Emma Cote, who worked with Kobo previously and is currently employed by eBOUND as a technology specialist, agrees that Amazon Kindle is far better than Kobo in terms of accessibility because the Kobo platform is still under development.<sup>101</sup> A

---

<sup>96</sup> Taylor, "What is DRM?"

<sup>97</sup> Sloane, Interview.

<sup>98</sup> Sloane, Interview.

<sup>99</sup> Ibid.

<sup>100</sup> Ibid.

<sup>101</sup> Cote, interview.

closer look reveals that, on the one hand, Amazon has a dedicated team that is working towards developing accessibility features and making the platform easier to use for its target audience; they call this project “A commitment to accessibility and inclusion.”<sup>102</sup> On the other hand, Kobo is still striving to reach the point where they can develop a fully accessible platform; on Kobo’s official support site a user asked why the assistive features do not work in the platform,<sup>103</sup> the exact same issue Sloane mentioned.<sup>104</sup> The technical associate from Kobo replied, “Unfortunately at the moment this is not funded by any of our donors or partners. Please let us know if you know of any funding source that could make this a reality and we can figure something out together.”<sup>105</sup> It is to be noted that the features requested are basic accessibility standards to support the visually disabled.<sup>106</sup>

Sloane says that she finds similar issues with other platforms like Scribd, and to a lesser extent with iBooks.<sup>107</sup> When she was asked to rank the platforms she has used she put Amazon Kindle first, followed by iBooks, Scribd and, in last place Kobo; CELA and NNLES are organisations which have online libraries and are excellent accessible platforms, said Sloane.<sup>108</sup>

---

<sup>102</sup> Amazon staff, “A commitment to accessibility and inclusion.”

<sup>103</sup> Kobo ToolBox community, “Accessibility standards for visual disability.”

<sup>104</sup> Sloane, Interview.

<sup>105</sup> Kobo ToolBox community, “Accessibility standards for visual disability.”

<sup>106</sup> Ibid.

<sup>107</sup> Sloane, Interview.

<sup>108</sup> Ibid.

## Chapter 4. Importance of accessible ebooks

*“Accessible design is good design – it benefits people who don’t have disabilities as well as people who do. Accessibility is all about removing barriers and providing the benefits of technology for everyone.”*  
—Steve Ballmer<sup>109</sup>

### 4.1. What is print disability?

The term “print-disabled” was coined in 1987 by George Kerscher, a pioneer in digital talking books. A person is print-disabled when they cannot effectively read material because of a visual, physical, perceptual, developmental, cognitive, or learning disability. Print disabilities prevent a person from reading or gaining information from printed materials the standard way; instead they require alternative options to consume the same material.<sup>110</sup>

Print disabilities can be classified as learning, physical and visual disabilities.<sup>111</sup>

- *Learning disability*: This is when a person finds it difficult to read and interpret the content. They might struggle with the words, comprehension, and print, but this does not mean that the person is unintelligent. The best-known example of a learning disability of this kind is dyslexia, a widespread disorder and that affects an estimated 5 to 10 percent of the population.<sup>112</sup>
- *Physical disability*: This is when a person struggles to hold and manipulate a physical book to read it, often because of a neurological condition.<sup>113</sup>
- *Visual disability*: This refers to people who are blind and visually impaired or people with low vision that have problems seeing and reading printed material.<sup>114</sup>

---

<sup>109</sup> Makowski, “Improving accessibility for Firefly users.”

<sup>110</sup> Wikipedia, “Print disability.”

<sup>111</sup> CELA, “What is print disability?”

<sup>112</sup> Dr. Sruthi, “What are the 4 types of Dyslexia?”

<sup>113</sup> Supporting students with Disabilities, “Physical Disabilities.”

<sup>114</sup> Wikipedia, “Visual impairment.”

## 4.2. Why are Accessible ebooks important?

A survey conducted by BookNet Canada in 2019 found that approximately half of all digital users use accessibility features while they read ebooks.<sup>115</sup> Accessible ebooks give the reader the option to adjust font size, change background colour, magnify screen and much more; the statistics from this survey demonstrate that accessible ebooks not only benefit the print disabled, but also improve the reading experience of print-able readers.<sup>116</sup> As the quote at the beginning of the chapter says, accessible design is the best design which benefits everyone in general.

Accessibility is all about equality and inclusivity; everyone irrespective of their disabilities deserves the right to access content. For this reason, accessible ebooks are important for all print-disabled readers.<sup>117</sup> One in five Canadians has been affected by one or more disabilities, be they temporary or permanent. The Accessible Canada Act aims to create a barrier-free Canada, and in order to comply with this act we need to produce accessible ebooks.<sup>118</sup> While 6.2 million people have a disability in Canada, fewer than 5% of published works are available in accessible formats.<sup>119</sup>

## 4.3. From the audience

Jillian Sloane is a visually challenged student at Simon Fraser University. She was not born blind but fully lost her eyesight ten years ago. When this happened, she could no longer pursue any of the hobbies she previously enjoyed; coming from a small community in Northern British Columbia, she says ebooks were the best thing she had access to in terms of hobbies and education.<sup>120</sup> Sloane says the first thing she likes about the Kindle device is the text-to-voice option — a synthetic voice reading the text aloud which can also be modified as preferred.<sup>121</sup>

---

<sup>115</sup> BookNet Canada, “Producing “born-accessible” eBooks.”

<sup>116</sup> Harkonen, “How do readers use eBooks?”

<sup>117</sup> Brady, Interview.

<sup>118</sup> Government of Canada, “Making an accessible Canada for persons with disabilities.”

<sup>119</sup> BookNet Canada, “Producing “born-accessible” eBooks.”

<sup>120</sup> Sloane, Interview.

<sup>121</sup> Ibid.

Sloane used large-print books before she went fully blind, and for the purposes of that hobby, she found the Kindle device effective. To complete her education, however, she has had to scan textbooks and use her computer's text-to-voice software to access information. Recently, she has found using accessible ebooks of textbooks on Kindle much better than scanned pages conversion.<sup>122</sup> She has also been provided with an "access aid" on campus who helps her with inaccessible content or materials that are visual-heavy. In other words, her access aid reads content to her from a printed book for academic purposes and helps Sloane in her research.<sup>123</sup> It was surprising that Sloane was unfamiliar with the concept of alternative text before our interactions. When I explained their crucial role in making ebooks accessible, she reacted positively: "That's so cool! We don't have the option to look through books and see images as we cannot do it. I wish you could do these for book covers as well".<sup>124</sup> Though this idea from Sloane sounds very interesting, unfortunately it is not easy to add alternative text to cover images. The most recommended ePub3 format allows the cover image to be identified in the package document by adding the value "cover-image" to the properties. So, when provided this way the image is used by the ePub reading system for display of the book on the digital bookshelf or library and as a splash image when the ebook is loading. There is no way to provide alternative text for the cover image, but the reading systems provide the title and author information so that the readers can access the ebook.<sup>125</sup>

Sloane thinks accessible ebooks are very important and that countries should mandate them to create *equal opportunities*.<sup>126</sup> People with disabilities are often forgotten when it comes to access; when content is released it is often not accessible, so in order to create equal opportunities all content should be made accessible before it can be distributed on the marketplace.<sup>127</sup> Ebooks are more accessible for people with print disabilities and more affordable, and cost is an important consideration for people who

---

<sup>122</sup> Sloane, Interview.

<sup>123</sup> Ibid.

<sup>124</sup> Ibid.

<sup>125</sup> Daisy, "Cover."

<sup>126</sup> Ibid.

<sup>127</sup> Ibid.

are often dependent on government financial assistance.<sup>128</sup> Ten years since Sloane lost her sight, she feels that the technology of ebooks has grown so much and helped her cultivate her passion and knowledge.<sup>129</sup> She has apps like Kindle, Kobo, iBooks, and Scribd on her phone now and does not even need an eReader device like the one she had when she initially started to use ebooks. The technology has changed so much that she feels books are more accessible now than they were years ago.<sup>130</sup> Sloane attended the NNLESS summit last year and was enthusiastic about how seriously accessibility is being taken by the publishing industry. It is indeed encouraging to see publishers producing accessible ebooks.<sup>131</sup>

Sloane says, “Ebooks never release on time, we wait for years for an ebook. It’s always the print book, then the ebook and lastly the audiobook; which is too annoying”.<sup>132</sup> It isn’t fair that people don’t get to read a book just because they can’t physically; Sloane had to wait for a year for the ebook release of the ninth book in the Outlander series, for instance.<sup>133</sup>

#### **4.4. There is always room for improvement**

Sloane says that sometimes the price of accessible books is a challenge. CELA and NNLES provide free ebooks, and ebooks are cheaper than audiobooks. But the drawback with ebooks is that there are no subscriptions, unlike audiobooks.<sup>134</sup> Academic textbooks in particular are very expensive and taking a physical textbook (bought or borrowed) to the disability centre for transcription can take weeks. Students often fall behind class schedules.<sup>135</sup> For people with print disabilities, it would be helpful if fully accessible ebook textbooks were funded by the government.<sup>136</sup> Furthermore, were

---

<sup>128</sup> Ibid.

<sup>129</sup> Ibid.

<sup>130</sup> Sloane, Interview.

<sup>131</sup> Ibid.

<sup>132</sup> Ibid.

<sup>133</sup> Ibid.

<sup>134</sup> Ibid.

<sup>135</sup> Ibid.

<sup>136</sup> Ibid.

companies like Kobo and Scribd to improve the accessibility of their platforms, this would offer a wide range of resources.<sup>137</sup>

---

<sup>137</sup> Ibid.

## Chapter 5. Global Overview and support by the government

### 5.1. The Marrakesh Treaty

The Marrakesh Treaty administered by WIPO, is the latest addition to the body of international copyright treaties created to facilitate access to published works for people who are blind, visually impaired or otherwise print-disabled.<sup>138</sup> The treaty has a clear humanitarian dimension and aims to establish a set of mandatory limitations and exceptions for the print-disabled.<sup>139</sup> Since it was adopted on June 27, 2013, more than 82 countries have signed the treaty, of which 38 are in Europe.<sup>140</sup> Canada ratified the agreement in 2016 as part of its commitment to support the more than 800,000 Canadians who live with a visual impairment and the three million Canadians who are print-disabled. To further establish better access to materials for the disabled, the Canadian Ministry of Innovation, Science, and Economic Development introduced Bill C-11 *An Act to Amend the Copyright Act* to Parliament in March 2016. Royal assent was received in late June that same year.<sup>141</sup>

### 5.2. Support from the Canadian government

In the federal budget of 2019, the Trudeau government announced an investment of \$22.8 million over five years for the development of an initiative to support the sustainable production and distribution of accessible digital books by Canadian independent publishers: the Canada Book Fund.<sup>142</sup> The initiative encourages the Canadian book industry to integrate accessible publishing features into the production and distribution of digital books — ebooks and audiobooks that can be used by everyone, including readers living with print disabilities. Specifically, this initiative aims to increase the availability of "born-accessible" Canadian-authored and published digital titles by

- increasing accessible publishing capacity in Canada

---

<sup>138</sup> WIPO, "Summary of Marrakesh Treaty."

<sup>139</sup> Ibid.

<sup>140</sup> EBU, "The Marrakesh Treaty."

<sup>141</sup> Government of Canada, "The Marrakesh Treaty.": <https://www.parl.ca/LegisInfo/en/bill/42-1/C-11>

<sup>142</sup> Government of Canada, "Accessible Digital Books – Support for Organizations."

- developing and promoting best practices
- implementing industry standards and certification.<sup>143</sup>

As mentioned in Chapter 3 Greenwood Books used funds received from this innovative program to hire an in-house image descriptor to produce alternative text for accessible ebooks and also their website.<sup>144</sup>

eBOUND's piloting of the Benetech Certification program is also funded by the government.<sup>145</sup> Emma Cote, a Technology Specialist at eBOUND says, "There is a huge increase in conversion of accessible ebooks compared to what it was before."<sup>146</sup> Although 5000 ebooks from Canadian publishers were converted in 2021, these titles were not all born-accessible ebooks.<sup>147</sup> eBOUND estimates that by 2024 all publishers will be producing born-accessible ebooks and has expanded and redeveloped its "Publishers Knowledge Kit" of supporting resources to help publishers produce digital books into an "Accessible Publishing Knowledge Network," a hub of library-like resources and guides.<sup>148</sup> eBOUND hopes that they can help Canadian publishers get certified, adapt standard workflow methods and produce accessible ebooks that meet international industry standards. To do all this, eBOUND requires support from the government, which they receive, and expects more in the future.<sup>149</sup>

---

<sup>143</sup> Ibid.

<sup>144</sup> Brady, Interview.

<sup>145</sup> Cote, Interview.

<sup>146</sup> Ibid.

<sup>147</sup> Ibid.

<sup>148</sup> Ibid.

<sup>149</sup> Cote, Interview.

## Conclusion

Accessible ebooks are needed to create equal opportunities for all and advance inclusivity. Laura Brady says, “There should be an accessibility advocate in every organization who speak for the community and ensure that the people belong with disabilities get the access to all opportunities that everyone else gets”.<sup>150</sup> It is important for every publishing house in Canada to designate someone as the accessibility advocate or have an “accessibility busybody,” a person who attends meetings and checks that they have thought about captioning an event, whether the book launch event venue is accessible, whether contract written in braille is required.<sup>151</sup> Designating someone as an accessibility advocate means organizations are paying attention and staying abreast of developments in the field. Brady is working with eBOUND to create such training.

Born-accessible ebooks are so essential because they provide access to information for everyone. As we heard from Jillian Sloane in Chapter 4, people with print disabilities use accessible books both recreationally and as a resource in education. In an age of Diversity, Equality and Inclusivity (DEI) committees we can appreciate how even the smallest issue is critical to publishing in a democratic way. Brady says a lot of publishers in Canada are massively print-focused and ebooks are an afterthought or not something that they value; but the Covid-19 pandemic has changed that a little bit and ebooks sales are up which has made it a significant factor to focus on in future. She feels that if the government takes this as an initiative and along with grants encourages publishers to meet minimum standards that would really make a big change in the industry and publishers would produce more accessible ebooks.<sup>152</sup>

The Accessible Books Consortium for Accessible Publishing Charter,<sup>153</sup> which indicates the publishers are aware of accessibility and are working towards accessibility goals. In recent times, several publishers have signed it; Brady says this is a great start and she feels that this is a sign that publishers are paying attention to accessibility.

---

<sup>150</sup> Brady, Interview.

<sup>151</sup> Ibid.

<sup>152</sup> Ibid

<sup>153</sup> Accessible Books Consortium, “Charter for Accessible Publishing.”

Another concrete change that Brady would love to see is strong accessibility statements on publishers' websites; right now they just have the bare minimum, even though things couldn't change overnight the publishers should express what they are planning to do about accessibility in the future and what are they working on currently to reach that goal. Brady is working with Suzanne Norman at Simon Fraser University to create a course for accessible publishing.<sup>154</sup> Such a course would be the first of its kind in Canada and long overdue.

As this report discusses what are accessible ebooks and explains the importance of their features it is important that we understand their benefits, overcome the challenges in producing them and work towards inclusive publishing which could create equal opportunities for everyone irrespective of their disabilities. I personally have a strong reflection after working on this project that I will speak for and work towards creating accessible content wherever possible.

---

<sup>154</sup> Brady, Interview.

## References

### ***Published:***

Accessible Books Consortium, "About Us," n.d.

<https://www.accessiblebooksconsortium.org/about/en/>

AccessiblePublishing.ca, "Accessibility Features Checklist." n.d.

<https://www.accessiblepublishing.ca/accessibility-features-checklist/>

-----"Accessible Publishing Best Practices." n.d.

<https://www.accessiblepublishing.ca/accessible-publishing-best-practices/>

-----"Charter for Accessible Publishing." n.d.

<https://www.accessiblebooksconsortium.org/portal/en/charter.html>

Amazon Staff, "A commitment to accessibility and inclusion." *Amazon*, July 21, 2020.

<https://www.aboutamazon.com/news/devices/a-commitment-to-accessibility-and-inclusion>

Association of Canadian Publishers, "Industry Overview." n.d. <https://publishers.ca/industry/>

BookNet Canada, "Producing "born accessible" books." June 20, 2019.

<https://www.booknetcanada.ca/blog/2019/6/20/producing-born-accessible-books>

Born-accessible, "About Us," n.d. <https://bornaccessible.benetech.org/global-certified-accessible/>

-----"Certified Publishers." n.d. <https://bornaccessible.benetech.org/certified-publishers/>

-----"FAQs." n.d. <https://bornaccessible.benetech.org/faqs/>

-----"Why Born-Accessible." n.d. <https://bornaccessible.benetech.org/why-born-accessible/>

CELA, "What is print disability?" n.d. <https://celalibrary.ca/about-us/what-is-a-print-disability>

Constantopedos, Elias, "Creating an accessible ePUB." *Accessible Textbooks for All*, June 30, 2019. <https://www.accessibletextbooksforall.org/stories/creating-accessible-epub>

DAISY, "Tables." n.d. <http://kb.daisy.org/publishing/docs/html/tables.html>

-----"Cover." n.d. <http://kb.daisy.org/publishing/docs/epub/cover.html#ex-03>

-----"Free webinar series on Accessible Publishing and Reading." n.d.

<https://daisy.org/webinar-series/>

De Groot, Juliana, "What is Digital Rights Management?" *Digital Guardian*, October 15, 2018.

<https://digitalguardian.com/blog/what-digital-rights-management>

Dr. Sruthi, "What are the 4 types of Dyslexia?" *MedicineNet*, November 30, 2021.

[https://www.medicinenet.com/what\\_are\\_the\\_4\\_types\\_of\\_dyslexia/article.htm](https://www.medicinenet.com/what_are_the_4_types_of_dyslexia/article.htm)

eBOUND, "About Us," n.d. <https://www.eboundcanada.org/about/>

----- "Resources." n.d. <https://www.eboundcanada.org/resources/>

EBU, "The Marrakesh Treaty." n.d. <https://www.euroblind.org/campaigns-and-activities/current-campaigns/marrakesh-treaty>

Edit Epub, "What an Epub file is, and how to Open, Edit, and Create your own." n.d.  
<https://www.editepub.com/understanding-the-epub-format/>

Government of Canada "The Marrakesh Treaty." n.d. <https://www.canada.ca/en/innovation-science-economic-development/news/2016/03/the-marrakesh-treaty.html>

----- "Accessible Digital Books – Support for Organizations." n.d.  
<https://www.canada.ca/en/canadian-heritage/services/funding/book-fund/accessible-books-organizations.html>

----- "Making an accessible Canada for persons with disabilities." n.d.  
<https://www.canada.ca/en/employment-social-development/programs/accessible-canada.html>

Harkonen, Kira, "How do readers use eBooks?" *BookNet Canada*, August 1, 2018.  
<https://www.booknetcanada.ca/blog/2018/8/1/how-do-readers-use-ebooks>

Harman, Mike, "Reflowable vs Fixed Layout – Which is the Best Layout for your eBook." *Kitaboo*, December 8, 2021. <https://kitaboo.com/reflowable-or-fixed-layout-epub-which-is-better/>

Harvard University, "Write good Alt Text to describe images" n.d.  
<https://accessibility.huit.harvard.edu/describe-content-images>

Heritage Group Distribution, "About Us." n.d.  
[http://www.hgdistribution.com/about\\_heritage\\_group.php](http://www.hgdistribution.com/about_heritage_group.php)

Hirschberg, Shim, "The impact of COVID on book buying." *BookNet Canada*, October 12, 2021.  
<https://www.booknetcanada.ca/blog/2021/10/12/the-impact-of-covid-on-book-buying>

House of Anansi, "Mii maanda ezhi-gkendmaanh / This Is How I Know." n.d.  
<https://houseofanansi.com/products/mii-maanda-ezhigkendmaanh-this-is-how-i-know>

Inclusive Docs, "The Difference between Audiobooks and Text-to-Speech Enabled Publications." n.d. <https://inclusivedocs.com/the-difference-between-audiobooks-and-text-to-speech-enabled-publications/>

Inclusive publishing, "Metadata." n.d. <https://inclusivepublishing.org/publisher/metadata/>

----- "The Inclusive Publishing Newsletter" n.d. <https://inclusivepublishing.org/newsletter/>

Kobo ToolBox community, "Accessibility standards for visual disability." August 1, 2020.  
<https://community.kobotoolbox.org/t/accessibility-standards-for-visually-disabilities/10885>

Makowski, Peter, "Improving accessibility for Firefly users." *Firefly*, n.d.  
<https://fireflylearning.com/blog/improving-accessibility-for-firefly-users/>

Maughan, Shannon, "AI Influence on Audiobooks Grows – As does Controversy." *Publisher's Weekly*, Feb 4, 2022. [www.publishersweekly.com/pw/by-topic/industry-news/publisher-news/article/88477-ai-influence-on-audiobooks-grows-as-does-controversy.html](http://www.publishersweekly.com/pw/by-topic/industry-news/publisher-news/article/88477-ai-influence-on-audiobooks-grows-as-does-controversy.html)

Newgen Knowledge Works, "Accessibility." n.d. <https://www.newgen.co/accessibility>

NNLES, "Common Accessibility Issues in EUB Files." *YouTube*,  
<https://www.youtube.com/watch?v=4FZ5SvHXfRU>

- Ontario Creates, "Industry Profile – Book." n.d. <https://ontariocreates.ca/research/industry-profile/ip-book>
- Publishing Pulse, "Audiobooks vs ebooks vs Physical Books: Pros and Cons of Each." March 5, 2018. <https://www.publishingpulse.com/audiobooks-vs-ebooks-vs-physical-books-pros-cons/>
- Siteimprove, "Accessibility: Image Alt text best practices." December 9, 2021. <https://help.siteimprove.com/support/solutions/articles/80000863904-accessibility-image-alt-text-best-practices>
- Speechki, "About." n.d. <https://speechki.org/>
- Supporting students with Disabilities, "Physical Disabilities." n.d. <https://www2.unb.ca/alc/modules/physical-disabilities/implications-for-learning.html>
- Taylor, Martin, "What is DRM (digital rights management)?" *DigitalPublishing101*, Sept 28, 2012. <https://digitalpublishing101.com/what-is-drm-digital-rights-management/>
- Thoet, Alison, "A short history of the audiobook, 20 years after the first portable digital audio device." *PBS News Hour*, November 22, 2017. <https://www.pbs.org/newshour/arts/a-short-history-of-the-audiobook-20-years-after-the-first-portable-digital-audio-device>
- TonerBuzz, "Paper Books vs eBooks Statistics, Trends and Facts [2021]", April 3, 2021. <https://www.tonerbuzz.com/blog/paper-books-vs-ebooks-statistics/>
- Turvey, Alex, "Using read aloud functionality." *eBooks.com*, 2020. <https://support.ebooks.com/hc/en-gb/articles/360000178956-Using-read-aloud-functionality>
- University of Waterloo, "Accessibility and ebooks." n.d. <https://uwaterloo.ca/library/find-resources/find-books/ebooks-guide/accessibility-and-ebooks>
- W3, "EPUB3 Overview." May 8, 2019. <https://www.w3.org/publishing/epub3/epub-overview.html>
- Wikipedia contributors, "EPUB." *Wikipedia The Free Encyclopedia* n.d. <https://en.wikipedia.org/wiki/EPUB>
- "Print Disability." *Wikipedia The Free Encyclopedia* n.d. [https://en.wikipedia.org/wiki/Print\\_disability](https://en.wikipedia.org/wiki/Print_disability)
- "Visual impairment." *Wikipedia The Free Encyclopedia* n.d. [https://en.wikipedia.org/wiki/Visual\\_impairment](https://en.wikipedia.org/wiki/Visual_impairment)
- WIPO, "Summary of Marrakesh Treaty." n.d. [https://www.wipo.int/treaties/en/ip/marrakesh/summary\\_marrakesh.html](https://www.wipo.int/treaties/en/ip/marrakesh/summary_marrakesh.html)

### **Unpublished:**

- Brady, Laura, interview by Christina Nisha Paul. *Interview with Laura Brady, Board Member of Accessible Books Consortium*, November 26, 2021.

Cote, Emma, interview by Christina Nisha Paul. *Interview with Emma Cote, Technical Manager of eBOUND Canada*, December 12, 2021.

Heritage Group Distribution, "Print to ePub workflow." Internal document, 2021.

----- "ePub Proofing." Internal Document, 2021.

----- "9781771513357 — Detailed Summary Report." Internal document, 2021.

----- "Quote from Newgen." Internal Document, 2021.

Lee, Amanda, interview by Christina Nisha Paul. *Interview with Amanda Lee, Metadata Consultant*, November 8, 2021.

Stewart, Adam, interview by Christina Nisha Paul. *Interview with Adam Stewart, Production and Technical Manager of Heritage Group Distribution*, November 19, 2021.

Sloane, Jillian, interview by Christina Nisha Paul. *Interview with Jillian Sloane, Undergraduate Student at Simon Fraser University*, November 23, 2021.