Research Report

Accessibility standards in commercial audiobooks

**Centre for Equitable Library Access**



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### Research Team

Mélissa Castilloux

Ioana Gandrabur

Riane Lapaire

Natalie MacDonnell

Laurie Davidson

Lindsay Tyler

Karen McKay

Megan Toye

### Project partners

CNIB Beyond Print

eBOUND

Book Publishers Association of Alberta

ECW Press

National Network for Equitable Library Service (NNELS)

### Advisory Committee

Emma Cote, eBOUND

Véronique Fontaine, ANEL, Éditions Fonfon

Justin Pitt, Book Publishers Association of Alberta
Daniella Levy-Pinto, NNELS

Laura Brady, Consultant

David Stinson, CNIB Beyond Print

Cassie Smyth, ECW Press

Jessica Albert, ECW Press

Wendy Reid, Rakuten Kobo

### Research Participants

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### Consultants

Joanie Tremblay

Wendy Reid

Sogol Mirikhoozani

### NNELS Accessibility Testers

David Kopman

Deanna Ng

Tait Hoyem

John Ylioja

Ka Li

Simon Jaeger

Laetitia Mfamobani

Melody Shih

Michael Krupp

Patrick Bouchard

### Stakeholder Consultations

Christen Thomas, CNIB Beyond Print

Charles Huot, CNIB Beyond Print

David Stinson, CNIB Beyond Print

Kieran Leblanc, Book Publishers Association of Alberta

David Caron, ECW Press

Cassie Smyth, ECW Press

Jessica Albert, ECW Press

Alicia Smith, Dyslexia Canada

Leah Ison, Cerebral Palsy Alberta

Gautier Chomel, EDRLab

Richard Orme, DAISY Consortium

Majorie Théodore, Vues et Voix

Jean-Sébastien Laliberté, Vues et Voix

Corey Wintemute, NNELS

Véronique Fontaine, ANEL, Editions Fonfon

Julie Rainville, ANEL

Corey Wintemute, NNELS

Daniella Levy-Pinto, NNELS

Megan Bishop, Book Publishers Association of Alberta

Matt Bowes, NeWest Press

Meredith Thompson, NeWest Press

Abby Ratcheson, OverDrive

Emma Coté, eBOUND

Michele Cobb, Audio Publishers Association

### Testing Platform Development

Ronok Sarkar, Tammie Sarkar, Liam Morton, and Caiden Sarkar (Book Connect Team)

### Production Assistance and Permissions for Audiobook Materials

Studio Bulldog

Joanne Pak

CNIB Beyond Print

ECW Press

Les Editions Ecosociete

Les Editions Interligne

House of Anansi Press

University of Alberta

Ginalina Music

Les Éditions Hubertise

Anvil Press

Bayard Canada

### Translation and Revision

Bernard Guay

Sophie Boivin-Joannette

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All translations from French to English in this document—primarily quotes from francophone participants in the survey and focus groups—were carried out by a member of the research team. These translations aim to preserve the original meaning while ensuring clarity and readability in English. Where a direct equivalence was not possible, adjustments were made to reflect the intended meaning and context of the source material. When an official translation was used, it is cited accordingly. Square brackets indicate minor modifications or clarifications added to enhance comprehension. All quotes from francophone participants are labeled as *(Francophone Focus Group)* or *(Francophone Survey Response)* to ensure transparency in the translation process. The original French text is available in the corresponding French version of the document.

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# I. Executive Summary

## Why We Undertook This Project: Introduction and Landscape Review

The Centre for Equitable Library Access (CELA) created the Commercial Audiobook Research Project to investigate and address accessibility gaps in commercial audiobook production for individuals with print disabilities. While digital publishing has advanced accessibility—particularly with ebooks—commercial audiobooks lack standardized accessibility practices, despite being a primary reading format for many.

Unlike ebooks, where accessibility standards like EPUB 3 and associated guidelines apply, commercial audiobooks lack accessibility standards and generally do not support navigability, image descriptions, or text-to-speech compatibility. While alternative format libraries like CELA, NNELS and SQLA offer formats designed for people with print disabilities, commercially produced audiobooks are in high demand due to their selection, professional narration, and timely releases. However, they often exclude essential accessibility features, limiting usability for print-disabled audiences.

At the same time, publishers and audiobook producers who wish to improve the accessibility of their audiobooks and reach potentially larger audiences need information and guidelines based on user needs and preferences.

This project sought to bridge this information gap between industry practices, needs and readers’ experiences by assessing accessibility barriers, exploring user preferences, and evaluating industry feasibility. Our goal was to determine how commercial audiobooks could be made fully accessible while balancing industry constraints and general reader satisfaction.

## Key Findings

### 1. Commercial Audiobooks Lack Standardized Accessibility Features

Current industry practices do not uniformly include essential elements such as structured navigation, image descriptions, and metadata for enhanced discoverability. Many commercial audiobooks omit front and back matter (e.g., about the author, bibliographies, footnotes), leaving listeners—especially those who rely entirely on audio formats—at a disadvantage in accessing full content. Additionally, audiobook platforms often have accessibility barriers, such as unlabeled buttons, inconsistent playback controls, and poor compatibility with screen readers.

Key barriers to audiobook accessibility:

* Navigation and Structure: Many commercial audiobooks lack structured navigation features, making it difficult for readers to jump between clearly labelled sections, chapters, or bookmark key passages.
* Omissions in Audio Content: Critical content such as image descriptions, footnotes, and references is often absent, leaving readers with an incomplete experience.
* Metadata and Discoverability: Accessibility metadata specific to audiobooks is not well-developed.
* Audiobook production is costly and complex, especially for independent Canadian publishers, and innovation for enhancements in this area requires funding. Copyright, licensing and distribution systems also create limitations.
* Platform-Specific Barriers: Many audiobook platforms do not fully support assistive technologies, making it difficult for users to find, purchase or borrow, and read effectively.

### 2. User Habits and Preferences: A Case for Born-Accessible Audiobooks

The findings of this project support the case for born-accessible audiobooks, as habits and preferences for people with and without print disabilities align in many ways.

* **Shared Preferences for Accessibility Features:** Many accessibility improvements—such as better navigation, image descriptions, high-quality narration, and metadata—are also valued by users without print disabilities.
* **Enhancing Usability for Everyone:** Features like navigable tables of contents, properly structured chapters, and descriptions for images make audiobooks more versatile and functional, much like how curb cuts benefit all pedestrians.
* **Demand for Customizable Experiences:** Reader preferences vary based on genre, context, and personal habits. Customization options improve the audiobook experience for all users.

### 3. The Audiobook Industry Needs Greater Collaboration on Accessibility

Currently, accessibility in audiobooks is fragmented across production, distribution, and platform technology. Implementing certain recommendations, such as customization, requires coordination between multiple stakeholders. Some publishers and producers implement best practices, but the absence of standardized guidelines results in varied user experiences. Our research highlights the need for collaboration between publishers, audiobook platforms, accessibility organizations, and technology providers, all working to enhance accessibility in their part of the supply chain.

## Recommendations

### 1. Key Recommendations for Publishers and Producers

* Content Completeness:
	+ Include all print book elements (e.g., footnotes, indexes, bibliographies, appendices, image description) and avoid abridgment unless clearly indicated
	+ Provide supplemental materials in accessible text formats (e.g., downloadable documents or EPUBs).
* Narration Quality:
	+ Use clear, well-paced narration with explicit cues for footnotes, image descriptions and headings.
	+ Optimize sound design and file compression for various playback speeds to maintain clarity.
* Navigation and Structure:
	+ Produce a detailed, accessible Table of Contents (ToC) using track lists, manifest files, and name the files themselves meaningfully.

### 2. Recommendations for Audiobook Platforms and Libraries

* Platforms:
	+ Build platforms that support end-to-end accessibility, including voice commands and customizable settings.
	+ Enable interoperability across devices and reading systems.
	+ Develop reading technologies that allow customization and support further accessibility features and flexibility.
* Public Libraries, Academic Libraries, and Libraries Serving People with Print Disabilities:
	+ Prioritize accessibility in the procurement of digital resources.
	+ Offer diverse audiobook collections and provide training on digital literacy and accessible services.

### 3. Industry-Wide Recommendations

* Establish an Audiobook Accessibility Working Group or Summit to bring together publishers, platform developers, accessibility advocates, and users.
* Develop and adopt common accessibility metadata and standards.
* Explore technological solutions to allow readers to customize their experience (e.g., choosing which elements to hear or skip).
* Work toward allowing synchronized text and audio books to enhance compatibility with assistive tools and respond to reader preferences generally.
* Explore advanced features like AI-driven bookmarking, summarization, and voice-activated commands.

## Conclusion

The findings of this research demonstrate that accessible audiobooks are not just a necessity for users with print disabilities but an improvement for all listeners. The commercial audiobook industry has an opportunity to embrace accessibility as a fundamental component of production rather than an afterthought, or the responsibility of alternate format producers alone. By implementing industry-wide standards, improving usability, and fostering collaboration across stakeholders, audiobooks can become an inclusive and fully accessible format for all readers. With the right investments and policy shifts, the industry can ensure that all audiobook users—regardless of disability status—have equal access to information, literature, and entertainment.

# II. Introduction

## Background and Context

### Origins of the Research

Advances in ‘born accessible’ publishing have made ebooks a flexible and accessible format for readers. These advances are supported by robust open standards and as well as training on workflows that support the creation of accessible ebooks. At the same time, for many readers with print disabilities, audiobooks remain more popular than ebooks, and yet the audiobook format has not benefitted from the same level of standards development and adoption, and capacity building for accessibility. From a position of valuing the reader perspective, and of ensuring that the voices of readers with print disabilities are particularly heard, this research aims to investigate the reader’s experience with audiobooks, and specifically with accessibility features that are not generally available in commercial audiobooks.

Audiobooks matter because they are important medium for access to information, leisure, learning and community participation for people with print disabilities, and those who can read print alike.

For people with print disabilities in Canada, they are essential, and one of the most popular formats. In the 2020 Accessible Publishing Research Report, 81% of respondents read audiobooks and the majority of participants (61%) would choose an audiobook over an ebook (ACP, 2020). Although use of audiobooks is lower in the general population, the format represents a significant segment of the commercial market. In 2021 19% of book buyers purchased audiobooks, and audiobooks accounted for 12% of books purchased. Similar rates of audiobook usage were reported among borrowers of library materials. (Booknet Canada, 2021).

Although readers with print disabilities in Canada have access to alternate format collections from specialized libraries like CELA, NNELS and Service Québécois du livre adapté (SQLA), these readers often enjoy the high-quality productions and timely availability of commercial audiobooks. The increasing availability of commercial audiobooks undoubtedly improves choice and access for readers with print disabilities.

However, these readers also note barriers in commercial audiobooks, such inadequate navigation in some books, and missing content such as images or back matter. The varied practices and lack of standards mean uneven and unpredictable reading experience for users. When content that is excluded from audio versions, such as notes or bibliography, readers who rely on audiobooks do not have equal access to information.

In contrast, the introduction and adoption of the EPUB3 format, which allows for greater accessibility than EPUB2, and the development of accompanying accessibility standards for ebooks have made ‘born accessible’ digital publishing possible (ACP, 2020, pp. 107-108). Furthermore, legislation such as the European Accessibility Act (EAA) and government programs such as the Accessible Digital Books initiative of the Canada Book Fund have pushed the adoption of these standards and built capacity for accessible publishing of ebooks.

There are efforts to develop open standards and increase accessibility for audiobooks such as the W3C Audiobooks recommendation, but they have not been widely adopted. Overall, commercial audiobooks are largely an afterthought in the conversation about accessible publishing, despite their importance for people with print disabilities and growing market share.

Recognizing these gaps between the importance of audiobooks and information about how to make them accessible, we proposed this research to provide a better understanding of how readers with and without print disabilities experience different kinds of audiobooks and features within audiobooks. By gathering a variety of stakeholders, and by placing the reader, including readers with print disabilities at the centre of this project, we are able to better understand the current situation of commercial audiobook accessibility and look for opportunities to make them more accessible and inclusive.

### Commercial audiobook production and consumption in Canada

Audiobooks made up 4% of overall book sales and 10% of books borrowed in Canada in 2023 (Booknet Canada, 2024a). According to a report from the Association of Canadian Publishers Symposium on Audiobooks held in January 2020, Canadian audiobook sales lag behind those in the US by about 4%, indicating room for growth (ACP, 2020b).

Although they represent a fraction of overall book sales audiobooks, are growing in popularity with more readers using them. In 2020, 37% of readers had listened to an audiobook (Booknet Canada, 2020), climbing to 45% of readers in 2021 and 51% of readers in 2022 (Booknet Canada, 2022). In 2023, the portion of readers who reported reading an audiobook in the past year rose again to 54% (Booknet Canada, 2024b).

Among Canadian publishers, only a small percentage of print titles published are available in audio format, between 1 and 5%, but the number of publishers who produce audiobooks is increasing. In 2021, 53% of Canadian publishers offered audiobooks compared with 16% in 2015. The most significant barrier to audiobook production was money (Booknet Canada, 2022).

The statistics available for the French-language market at the time of this writing were not as detailed as those for the English market, but according to an opinion piece published in La Presse on June 8, 2023, audiobooks are a smaller part of the Québec book market, representing only 1% of sales (Felteau, 2023).

### Audiobook Usage Amongst Users with Print Disabilities

While audio is a growing format choice in general, among readers with print disabilities, it is still more popular. Readers with print disabilities may use the same commercial audiobook platforms as other readers, depending on their needs and the accessibility of those platforms, but they also have access to specialized libraries for people with print disabilities such as CELA, NNELS and SQLA.

In 2020, NNELS conducted a *How do YOU Read?* Study (HDYR) with 595 people in Canada with print disabilities. This study is useful in clarifying the needs and preferences of readers with print disabilities and confirming the importance of audiobooks for this group. This study found that 81% of respondents read audiobooks and 61% prefer audiobooks over ebooks. More specifically, human-narrated audiobooks (as compared to audiobooks with synthetic speech) are preferred by 90% of the HDYR participants (Association of Canadian Publishers, 2020a).

In 2023, Statistics Canada published the results of a survey on print material accessibility in Canada which also sheds light on the reading needs of people with print disabilities. Overall, Statistics Canada estimates that that some 5.2 million Canadians have difficulty reading print due to a disability, and half of those require alternate formats. In these results, large print and ‘accessible file formats’ were the most used formats. Audio formats were the third most popular, selected by 28.2 of respondents, and the format ‘talking book or described video’ was selected by 12.7% of respondents. (McDiarmid, 2023).

The difference in reported use of audiobooks between the HDYR study and Statistics Canada study may be due to the broader reach of the Statistics Canada survey. The HYDR study respondents may be more dedicated readers and users of alternate formats; 90% of survey respondents like or love reading. 25% read 4–6 books per month (Association of Canadian Publishers, 2020a, p. 31)

Policy and Legislation

The context for this project includes accessibility policy and legislation which affects publishers, platform providers, libraries and readers, and has tended to encourage increased accessibility in digital publishing. The *European Accessibility Act* applies primarily to ebooks and requires the whole supply chain to become accessible by June 2025. It also applies to Canadian and other non-European publishers who sell ebooks in the European market. There are a number of exceptions to the accessibility requirements, but overall, European legislation has encouraged a shift toward a born accessible framework in publishing and the book supply chain (Mrva-Montoya, 2022).

Several Canadian provinces as well as the federal government have passed accessibility legislation that seek to address barriers in some sectors, including information and communications (Accessible Publishing Research Project, 21-22). *Accessible Canada Act* does not address published books specifically, but it does create the Canadian Accessibility Standards Development Organization (Accessibility Standards Canada) whose mandate includes the development and revision of accessibility standards (Accessible Canada Act, SC 2019, c 10).

Although there is no legislation in Canada requiring publishers to create accessible ebooks, the federal government has supported born accessible publishing. From 2019 to 2024, the Department of Canadian Heritage (DCH) ran the Accessible Digital Books initiative which provided $22.8 million in funding for publishers and other organizations to increase the availability of ‘born accessible’ Canadian-authored digital titles, both ebooks and audiobooks (Canadian Heritage, 2022). The impact of this funding on accessible publishing in Canada is a theme in the stakeholder consultation in section III.

Several resources related to the accessibility of commercial audiobooks were developed in the context of this funding. In February 2021, CNIB published a report entitled “Experimentation Project for Accessible Audiobook Production: Best Practices in Publisher Workflow”, commissioned by eBOUND. It provides accessibility guidance on key areas within the audiobook production process such as the best practices for image descriptions, bit rate and format, narrator selection and performance, and recommended processes for quality assurance testing of completed files. The report included a brief accessibility features checklist.

During the 5-year Accessible Digital Books initiative, DCH also began to invite funded projects to complete an Accessible Audiobooks Checklist indicating which accessibility features were incorporated in the funded audiobooks. This checklist provides a comprehensive list of accessibility features and served as a form of guidance for audiobook production in the context of this program.

The Accessible Publishing Learning Network, funded by eBOUND and the Government of Canada, is an accessibility resource for publishers working in Canada. It offers guides to several aspects of audiobook production, from formats to metadata (APLN, 2025).

This research project aims to build on work done under the Accessible Digital Books initiative and provide data from the reader experience to support accessibility guidelines for audiobook creators.

### Born accessible publishing

Books, including audiobooks, used by people with print disabilities can be created in two ways. The traditional way, particularly before the adoption of digital publishing, is to create alternate formats specifically for the use of people with a print disability, for example by transcribing a print book into braille or recording an audiobook.

In many countries, the creation of alternate format materials is the work of specialized libraries or agencies and is governed by exceptions in national copyright law which allow works to be created in alternate formats for the use of people with print disabilities without permission of copyright holders or paying royalties. In Canada, section 32 of the *Copyright Act* makes these provisions, and organizations like CELA, NNELS or SQLA use this exception in the Copyright Act to make alternate format books.

While specialized libraries continue to help fill gaps to meet the needs of readers with print disabilities, digital publishing, and the publishing standards that have developed, particularly EPUB3, provide publishers with the opportunity to create ‘born accessible’ materials which are compatible with assistive technology used by people with print disabilities. *Inclusive Publishing in Australia: An Introductory Guide* defines ‘born accessible’ in the following way, “[a]n inclusive product is ‘born accessible’ when it is designed to work for as many people as possible right from the start, without modification” (Alchin and Ganner).

The Accessible Publishing Research Project report highlights the opportunity that born accessible publishing offers:

“The international book publishing community is rapidly adopting a body of standards and best practices which will ensure that, from the very beginning of the development process for any literary work, digital files are created in a way that will result in ebook and audiobook formats that are fully accessible to people with a print disability. The goal is to make accessibility a given, rather than an add-on.” (Association of Canadian Publishers, 2020a, 107).

### Audiobook Accessibility Challenges

The principle of born accessible publishing has not yet been widely applied to commercial audiobooks and needs investigation. According to the National Network for Equitable Library Service’s “Audiobook Recommendations for Publishers”,

“It is common for people to think that an audiobook is, by definition, accessible to readers with print disabilities. Since the text is recorded and audible, it is understandable to expect that there is not much else to do. But there are more elements to consider than just recording the book: it needs to be easily discovered, opened, navigated, and listened to – with the tracks in the correct order.”

Audiobooks are not currently subject to the same standardization that ebooks enjoy. Again, from the NNELS Audiobook Recommendations for Publishers, “Unlike for ebooks, where EPUB is the standard format, audiobooks don’t have a single standard for production and distribution. Currently audiobooks are a simple compilation of audio files, like MP3, MP4, WAV, as well as the DAISY format and Enhanced EPUB.” In the section of this report entitled “Consultation with Individuals with Lived Experience of Print Disability” we detail the barriers that may be present in commercial audiobooks, including missing content and inadequate navigation as well as barriers that may appear in the reading systems used to acquire and read the book.

## Objectives

The project overall and this report specifically have several objectives, each of which relates to a phase of the project.

In the first phase of this project, the objective was to review and document the current landscape of commercial audiobook production practices and accessibility guidelines, and their impact on accessibility. In addition, we gathered information and documented the needs of publishers and producers with respect to accessibility and commercial audiobook production, including those publishing in French or English. These two objectives are achieved through the landscape review and consultation conducted early in the project and included in this report.

In the user testing phase of the project, the objective is to test and document the user experience of people with and without disabilities reading accessible commercial audiobooks that include all recommended features.

Specifically, during the testing phase, we assess the user experience of existing specific accessibility practices and guidelines for commercial audiobook production. We aim to co-create knowledge with readers about reader needs and preferences, particularly those with disabilities, to inform further standard development for audio publishing.

Finally, in publishing and disseminating our results, we meet the objective to provide information and actionable recommendations to publishers and audiobook producers in formats and venues that are meaningful and useful to them. In this way, we will advance support and advance the ‘born-accessible paradigm in audiobooks, the creation of audiobooks that are accessible to the widest possible audience.

## Scope

This study is centered on the audio format itself—how commercial audiobooks are created, structured, and presented to ensure accessibility for individuals with and without print disabilities. Unlike broader discussions on digital accessibility that include ebooks and multimodal reading experiences, this research specifically investigates what makes an audiobook accessible as an audio format. The primary goal is to identify concrete ways to improve the production, distribution, and playback of audiobooks so that users, particularly those with print disabilities, can engage with them fully and independently.

Focusing on the audio format means analyzing narration, metadata, navigation, track structuring, and supplementary content to determine what features enhance or hinder accessibility. This research looks at how audiobooks can be structured to allow users to navigate to specific points in the book efficiently, access additional content where necessary, and experience a reading journey that is as seamless and complete as possible. Whether through track naming conventions, bookmark functionality, or the integration of footnotes and image descriptions, the study seeks to establish guidelines for creating fully accessible audiobooks that do not rely on external tools or alternative formats for usability.

However, as the research progressed, it became clear that audiobook accessibility cannot be considered in isolation from reading technology and digital distribution platforms. While the focus remains on the audio experience itself, many of the barriers that users face are not just about the way an audiobook is produced but also how it is delivered and accessed through digital platforms. Issues such as inconsistent navigation features (such as a lack of chapter markers, difficulty bookmarking, and incomplete support for footnotes or supplementary content), minimal metadata, and a lack of synchronization between audio and text formats are often tied to audiobook platforms handle accessibility, rather than to the audio file itself.

Thus, while this study remains dedicated to understanding and improving the accessibility of the audio format, it inevitably engages with the technological ecosystem in which audiobooks exist. The study examines the role of digital platforms, e-readers, and mobile applications in audiobook accessibility—not to shift the focus away from the audio format, but to acknowledge that audiobook accessibility is not just a production issue but also a platform and technology issue. By analyzing how audiobook features are supported (or limited) by different playback technologies, the research provides a more complete picture of the accessibility challenges faced by users.

Another key aspect of this research is the engagement of users with and without print disabilities through user testing and direct feedback. By conducting structured listening sessions, interviews, and surveys, the study gathers real-world insights on audiobook usability. Rather than testing accessibility within existing commercial platforms, this study used a controlled testing environment to assess audiobook features in a standardized way. This approach ensures that recommendations are based on the actual experiences of audiobook users, focusing on the accessibility of the audiobook format itself rather than platform-specific limitations.

At the industry level, the study consults publishers, producers, and platform providers to understand workflow limitations, technical constraints, and economic considerations that impact audiobook accessibility. While the findings emphasize how to create accessible audio formats, they also consider what practical steps can be taken by publishers and industry stakeholders to ensure that accessibility is both achievable and sustainable. Existing standards such as DAISY, EPUB Accessibility Guidelines, and the W3C Audiobook Specification are examined to determine their applicability and potential for wider adoption in commercial audiobook production.

By maintaining a focus on the audio format itself, while also acknowledging the technological ecosystem in which audiobooks function, this research aims to bridge the gap between production and usability. The findings will serve as a resource for audiobook publishers, platform developers, and accessibility advocates, helping to shape a more inclusive and standardized approach to audiobook accessibility.

## Method Overview

### Introduction to the Methodological Approach

This section outlines the methodological framework guiding this study. Rather than adhering to conventional research models that separate literature reviews from empirical research, this study employs an integrated approach, fostering an ongoing dialogue between theoretical exploration and practical application.

A distinctive aspect of this study is its starting point: rather than beginning with the literature review, the research was initiated by engaging directly with individuals with print disabilities. This ensures that accessibility challenges are identified from the lived experiences of those most affected, making the research framework more responsive and grounded in real-world needs. The timeline detailing these methodological steps is outlined below.

Since this methodology incorporates active research elements, careful justification is necessary to uphold methodological rigor. To clarify the structure, we divide the research process into two key phases:

1. **Iterative Design, Literature Review, and Stakeholder Engagement:**
	* This phase combines traditional academic research with empirical stakeholder engagement. The literature informs discussions, while stakeholder feedback refines research questions in an iterative cycle.
2. **Reader Testing Through Surveys and Focus Groups:**
	* The second phase, employs structured research tools to validate and refine the study’s findings through controlled user testing.

This integrated approach ensures that findings are both theoretically robust and practically applicable, reinforcing the study’s commitment to accessibility and user-centered research.

### Academic Foundations of Participatory Action Research (PAR)

The integrated research approach used in this study is closely aligned with Participatory Action Research (PAR), which provides the theoretical foundation for our methodology. PAR offers a structured yet flexible framework for conducting research that is action-oriented, participatory, and responsive to real-world needs.

Participatory Action Research (PAR) is a subset of action research, defined as the "systematic collection and analysis of data for the purpose of taking action and making change" by generating practical knowledge (Gillis & Jackson, 2002, p.264). It encompasses various participatory approaches, including participatory research, community-based participatory research, and other forms of participative inquiry (Greenwood & Levin, 1998; Gibson, Gibson & MacAulay, 2001). The overarching goal of action research is to drive social change, with concrete actions as the intended outcome (Greenwood & Levin, 1998; Kach & Kralik, 2009; McNiff & Whitehead, 2006).

PAR is a collaborative, action-oriented research methodology that engages stakeholders as co-researchers rather than passive subjects. It is founded on the principle that those directly affected by an issue should actively participate in researching and addressing it (Reason and Bradbury 2001). This involvement spans all stages of the research process, including problem identification, design, data collection, analysis, and the application of findings.

A defining characteristic of PAR is its cyclical process of planning, acting, observing, and reflecting. This iterative structure ensures that research remains dynamic, continuously refined based on stakeholder feedback. Unlike conventional research methods that emphasize detached observation, PAR actively fosters social transformation and community-driven knowledge production. As Kemmis and McTaggart (2005) elaborate, PAR is not solely about gathering knowledge—it is about enacting change through inclusive participation, empowering those affected to play an active role in identifying and implementing solutions.

Furthermore, PAR emphasizes empowerment and agency, providing marginalized groups with a platform to voice their experiences and actively contribute to shaping solutions. It aligns with critical pedagogy and emancipatory research traditions, fostering an environment where knowledge is co-created rather than imposed. By embedding participation at all levels, PAR ensures that research outcomes are not only academically rigorous but also socially meaningful and practically applicable.

The social dimension of PAR is fundamental, fostering inclusivity, empowerment, and shared responsibility in the research process. By emphasizing collaboration and co-creation of knowledge, PAR challenges traditional hierarchies between researchers and participants, promoting equity in knowledge production. This approach aligns with social justice paradigms, advocating for research that is responsive to community needs and facilitates real-world impact. In the context of this study, ensuring diverse representation within both the participant pool and advisory committee is essential. People with print disabilities play a significant role in shaping the research design and writing process, reinforcing the commitment to accessibility and inclusion.

### Research Design

From the outset, this study has been shaped by extensive consultation with a diverse range of stakeholders within the accessible publishing ecosystem This ensures that research questions are grounded in real-world challenges while prioritizing the perspectives of individuals with print disabilities. By embedding stakeholder engagement at every stage, the research remains relevant, actionable, and responsive to accessibility needs.

A stakeholder is any individual, group, or organization with an interest in or directly affected by a project, decision, or research process. In this study, stakeholders include readers with print disabilities, audiobook producers, accessibility advocates, policymakers, researchers, technology providers, librarians, educators, funders, and advocacy organizations. The accessible publishing landscape functions as an interconnected ecosystem, where each stakeholder plays a vital role in ensuring that accessibility solutions are practical, inclusive, and sustainable. Recognizing the complexity of this ecosystem, this research seeks to promote collaboration among its diverse actors, driving meaningful and lasting change.

### Integrated Research Methodology

A critical aspect of this study is its integrated literature review, which moves beyond conventional models that treat literature as a static foundation preceding empirical inquiry. Instead, the research combines a traditional scholarly review of work on audiobook accessibility, disability studies, and digital publishing with empirical engagement through interviews and consultations with industry professionals and users. This approach ensures that findings are both theoretically grounded and pragmatically applicable, allowing for continuous feedback loops between existing research and lived experiences.

The study progresses through a series of interconnected phases, each informing the next:

* **Phase 1 (Spring 2024):** User consultations gathered feedback from individuals with print disabilities on audiobook accessibility barriers from CELA and NNELS. For instance, a key finding was widespread dissatisfaction over the lack of image descriptions, which led to discussions with other stakeholders—such as publishers and producers—regarding the feasibility of implementing this feature in phase 2. Additionally, this insight guided the development of test samples in phase 3 that incorporated image descriptions, ensuring that both user needs and industry constraints were considered in the iterative refinement process.
* **Phase 2 (Summer 2024):** Insights from Phase 1 informed discussions with industry stakeholders, leading to a landscape review through interviews and focus groups with audiobook producers, distributors, and accessibility experts. This phase assessed industry constraints and opportunities, culminating in a comprehensive landscape review report that shaped the accessibility features tested in the next phase.
* **Phase 3 (Fall 2024):** Findings from the landscape review guided the development of audiobook materials with enhanced accessibility features such as image descriptions—. User testing through structured surveys and focus groups assessed the usability and impact of these features, refining them based on direct user feedback.
* **Phase 4 (Winter 2025):** Data from user testing was systematically analyzed, integrating both quantitative trends and qualitative insights. A comparative analysis between users with and without print disabilities was conducted to assess the broader impact of accessibility features. The advisory committee played a role in refining recommendations based on industry feasibility and user needs. Final outputs, shaped by all previous phases, included actionable recommendations for audiobook producers, disseminated through academic publications and industry reports.

### Research Constraints and Considerations

Despite its rigorous methodology, this study acknowledges certain limitations.

First, the iterative integration of literature review and empirical insights, while fostering a dynamic and responsive research process, introduces the risk of selective inclusion of studies that align with stakeholder perspectives. Given that literature is continuously reviewed alongside stakeholder engagement, there is a possibility that existing research that challenges or complicates stakeholder priorities may receive less emphasis, potentially leading to confirmation bias in framing accessibility issues and solutions.

However, this study takes the stance that inclusion is a fundamental principle, ensuring that the voices of historically underrepresented communities in accessibility discourse are amplified. While this approach emphasizes accessibility advocates and affected communities, it also involves a thorough examination of industry constraints, technological feasibility, and economic considerations to ensure that accessibility solutions are both practical and sustainable.

The feasibility of proposed accessibility solutions depends on technological adoption by audiobook platforms, which may face barriers such as cost, technical limitations, or industry inertia. As our recommendations are shaped through stakeholder engagement, there is a potential bias toward prioritizing only solutions deemed feasible by current industry standards, potentially overlooking more innovative or long-term accessibility advancements. To counteract this limitation, we have intentionally included recommendations that are not currently feasible with existing technology but represent important future directions for accessibility. By doing so, we aim to push industry discussions beyond immediate constraints, encouraging technological investment, research, and collaboration to expand what is possible for accessible audiobooks in the future.

The project engages a specific set of stakeholders and focuses on accessible audiobooks, which may limit the scalability of findings. However, to ensure a broad and inclusive perspective, we deliberately incorporated both francophone and anglophone viewpoints, recognizing the distinct market dynamics and accessibility challenges within each linguistic community. By doing so, our findings reflect a more comprehensive and representative understanding of accessibility needs across diverse publishing and distribution landscapes.

# III Landscape Review

## Review of scholarly literature and publishing standards

Audiobooks were first developed and promoted in the 1930s format specifically for people with print disabilities, and since their beginning, people have raised questions about the relationship between audiobooks, books in general and the meaning of reading, the extent to which they meet the needs of people with print disabilities, their value as tools for learning, and their place in library collections (Rubery, 2016). Nearly one hundred years later, in the current scholarly literature on audiobooks, these same themes emerge. These questions are important to this research because in looking at audiobooks as a format that could be ‘born accessible’, we must clarify the relationship between audiobooks and their print equivalents and understand their value to diverse groups of readers.

In the scholarly literature on the needs of readers, particularly those with print disabilities, audiobooks, and accessible publishing, several themes emerge. On one hand, we know from research and experience that people with print disabilities face barriers in access to the information, entertainment and participation that reading affords, and that audiobooks are a popular and accessible format for many readers. At the same time, audiobooks are a medium related to but distinct from print books, and the unique affordances of the audiobook need to be understood and appreciated, both for readers in general and those with print disabilities.

While scholarly literature offers useful insights to this project, publishing standards and accessibility standards are the critical guidelines for publishers and producers creating books for the commercial market, and this literature review must also reference the written standards that determine how audiobooks are produced and guide discussions about digital accessibility.

### Audiobooks and the meaning of reading

For some scholars, and indeed many readers, audiobooks raise questions about the meaning of reading and the relationship between print books and audiobooks. Are audiobooks a completely new media or are they a derivation of the printed book, or something in between? And what are the characteristics of audiobooks compared to print books or ebooks?

According to the Cambridge Dictionary, reading is "the skill or activity of getting information from books" (Cambridge Dictionary). While this definition captures the essence of reading, it also leaves room to understand reading beyond traditional print-based methods. It is crucial to acknowledge the multiple sensory modalities through which people engage with written content. Experts emphasize that reading is not solely about visually decoding text—it is about accessing and comprehending written language, regardless of the medium used.

We can therefore consider at least three primary modes of reading – visual, tactile and auditory, or, as Ben Foss, in *The Dyslexia Empowerment Plan*, terms them, eye reading, ear reading, and finger reading. Foss’s more diverse view of reading challenges the traditional view of literacy. He argues that all three methods are equally valid and should be integrated into education to support diverse learners.

**Eye Reading** – The conventional method of reading printed or digital text using vision. This remains the most widely recognized form of literacy and continues to be the primary focus in traditional education systems.

**Finger Reading** – The process of reading through touch, such as Braille, allowing individuals with visual impairments to interpret written language using tactile symbols. The National Federation of the Blind (NFB) strongly advocates for the expansion of Braille education, emphasizing its critical role in literacy for blind individuals (Hoskin et al, 2022).

**Ear Reading** – The practice of listening to audiobooks, text-to-speech software, or other spoken-word recordings to access written content. This method is particularly beneficial for individuals with dyslexia, visual impairments, or other reading challenges, enabling them to engage with text through auditory processing rather than visual decoding.

The International Dyslexia Association (IDA) recognizes ear reading as an effective literacy tool for individuals with dyslexia, stating that listening to audiobooks enhances vocabulary, comprehension, and fluency (exemple : IDA, 2017).

A study published in Frontiers in Human Neuroscience found that the brain processes information similarly when reading visually or listening to spoken text. This reinforces the legitimacy of ear reading as a valid literacy method (Berninger et al., 2019).

Pedersen and Have (2021) take up the question of the relationship between audiobooks and print books and the question of whether consuming an audiobook constitutes reading. For them, the audiobook is connected to the print book, but the experience of reading an audiobook is fundamentally shaped by the technological affordances of digital audiobooks, particularly the ability to move around and perform tasks while listening. They write, “We define the audiobook as an audio recording of a printed book (the technical medium of display), which is read aloud, but do not see it as a by-product of the book; it is not only a remediation but also an independent medium, which offers other and expanded forms of reading literature.” Likewise, Tattersall Wallin (2021) explores the relationship between reading and audiobooks and whether audiobooks are in fact books. She concludes that the content is what defines a book, and therefore audiobooks are indeed books distinct from other audio media such as podcasts or radio.

Lundh (2022) posed the question of whether consuming audiobooks is reading directly to readers with print disabilities and found that “there is not one self-evident response to the question of whether the use of audio-based technologies for reading is regarded as reading by the study participants.” (p. 189). However, the study also highlights how,

“Maintaining that the use of audio-based reading technologies is not reading marginalises the experiences and positions of people that engage in these practices. Furthermore, such an argument contributes to the continuance of disabling practices, of, for example, libraries, publishers and educational institutions. Thus, to recognise, conceptualise and study the use of audio-based reading technologies as reading could be one small but important step towards non-disabling social and institutional practices, where reading by listening is constructed as a right, and not as an exception.” (p.189-190)

The discussion of the role of audiobooks for scholars with disabilities is important for Jensen and Veprinska (2022). Both are academics who have difficulties using print due to disabilities. They examine the ways their need for audio materials, or materials that can be read aloud by text to speech, has shaped and constrained their scholarship. They also consider gaps in audiobooks, for example they find images and notes included in the print but not in the audio. Representation of different viewpoints in audiobooks is also a concern with American and English-language materials in audio more readily available compared to other countries and languages. At the same time, they rely heavily on audio for their engagement in scholarly work, and urge acceptance of audio as a valid and valuable way of conveying information and writing, and a tool for greater equity in academia.

The relationship between audiobooks and books in general is therefore complex. Audiobooks are books, because their content is the audio recording of a printed book. However, they are also their own medium distinct from print or ebooks with their own affordances. Because audiobooks are books, consuming an audiobook does indeed constitute reading, but it is also listening. Based on the work of Lundh, Jensen and Veprinska, if we value the perspective of people with print disabilities who frequently rely on their hearing to read, then we need to take the close relationship between audiobooks and books seriously, and accept that reading audiobooks is reading. The accurate and robust representation of a book’s content in audio is critical for maintaining the relationship between print and audiobooks. Audiobooks that convey a book’s content fully and accurately also allow the readers who rely on them to participate independently and equitably in all that reading offers.

At the same time, we must acknowledge that audiobooks are their own format and navigating the relationship between print and audio is complex. The format requires flexibility and careful implementation in audio of the diverse elements present in books. The definition of reading must continue to evolve to reflect diverse learning needs and technological advancements. Recognizing and validating eye reading, finger reading, and ear reading ensures that education, accessibility, and literacy initiatives cater to all individuals, fostering inclusion and equal access to information in education, professional environments, and everyday life.

### Research on the needs of readers with print disabilities

Although they do not use the term print disability, Jensen and Veprinska point out many of the barriers that readers with print disabilities encounter when accessing books and other reading materials. Since a key goal of this project is to understand audiobook accessibility for readers with print disabilities, we reviewed the literature on the barriers people with print disabilities face.

In Canada, the Association of Canadian Publishers (ACP) and eBOUND partnered to produce the Accessible Publishing: Research Project (2020). The project conducted a landscape review of the production and distribution of accessible digital books in Canada, providing recommendations for standards and certification, and outlining a national strategy for awareness and training for accessible publishing in Canada. As a part of this project, ACP and eBOUND worked with the National Network for Equitable Library Service (NNELS) to conduct a study on the reading needs and preferences of people with print disabilities in Canada. The study, entitled “How Do YOU Read?”, recruited 600 participants with print disabilities from across Canada for interviews, online surveys and focus group sessions. Some of the user needs identified in the study included: increased selection and availability of accessible books, improved support and training on reading technologies, and more awareness of resources and services available. It also outlined a set of recommendations for improving the accessible publishing landscape in Canada (Association of Canadian Publishers, 2020a).

In 2023, Statistics Canada conducted the Survey on Print Material Accessibility. The survey aimed to provide “[a] better understanding of the characteristics of those with difficulties with print material and the barriers they face when accessing the formats they need...". The survey found that 5.2 million Canadians have difficulty reading ordinary print. 77.4% had difficulty seeing words in print, 25.0% had difficulty holding or turning pages of print material, and 42.2% had difficulty reading or understanding words in print. The majority of people who have difficulty reading print use some kind of assistive aid, device or technology, with the most popular aid being corrective lenses at 77.3% of respondents. Next in popularity, 17% use a magnifier and 16.1% reported using large print. Concerning formats used for reading, 35.8% of those with difficulties with print materials reported using one or more non-print format. The most used types of alternate formats were large print materials (63.1%), 36% used accessible file formats (defined by Statistics Canada as PDF or EPUB), and 28.2% read audio formats. The survey asked about barriers to accessing alternate format materials as well and found “Among those who require alternate formats, 69.5% indicated they encountered at least one barrier when accessing them.”. The most cited barrier was cost, followed closely by lack of availability in the format of choice (McDiarmid, 2023)

Internationally, research on the needs of readers with print disabilities confirms similar barriers, and the value of audiobooks. In 2012, Royal National Institute for the Blind, a UK organization, conducted a study that examined the reading needs and preferences of blind and partially sighted adults. Working with the Library and Information Statistics Unit at the Loughborough University and The Reading Agency, they recruited 294 participants for interviews, surveys and case studies. The purpose of the study was to explore how print disabilities can impact reading for pleasure, as well as to highlight the accessibility barriers encountered by participants when obtaining accessible reading materials (Spacey et al,. 2014, p.271). The study found that reading for pleasure was “very important” to most of the participants (82%) (p.274). It also found that participants predominantly preferred audiobooks when reading for pleasure (p.274). A key barrier to obtaining accessible books was the time delay between the release of a print publication and the production of an alternate format. Additionally, participants noted a lack of selection for non-fiction and foreign literature titles, and difficulty browsing and selecting titles in the physical space of the library (p.279). The study recommended better collaboration amongst producers of accessible formats, publishers, and specialist libraries to decrease the time delay in title availability of accessible formats and to increase the availability of a diverse selection of titles.

### Audiobooks as an educational tool

Researchers have considered the value of audiobooks as a tool in educational contexts. In a review on audiobooks and literacy published in 2020, Best notes that studies of reading comprehension that compare audiobooks with ebooks show that the two formats both address reading comprehension skills. Audiobooks also model reading for students, such as demonstrating pronunciation and tone. They also allow students to read a range of books that would otherwise be too demanding of their decoding skills. Some work has also shown that audiobooks increase emotional engagement compared to films. Research has also demonstrated that listening to an audiobook can also be a social activity and help parents who are busy or struggle themselves to read to share books with children. However, audiobook readers lack some of the control over the book that print readers have, for example, to read a specific section of the book easily. Studies of audiobook use in classrooms show they may increase engagement with reading.

For students with print disabilities specifically, audiobooks can be helpful or even necessary for access to the instructional materials. Milani, Lorusso and Molteni (2010) found pre-teens and teens with dyslexia who used audiobooks in their 5-month experiment showed reading accuracy and less discomfort with reading and school activities overall.

For Ry-Kottoh (2022), wider audiobook availability can make up for poor availability of other formats. This study compared the use of educational materials in braille with audiobooks and found that the serious challenges with timely braille production in Kenya as compared with audiobook production meant that audiobooks were a necessary mode of access for Kenyan students who are blind or partially sighted.

### Audiobooks in library collections

In her survey of both education and library literature on audiobooks and ebooks in public library collections, Moyer (2012) finds much that echoes Best’s assessment of the evidence for audiobooks value in literacy learning. At the time that she writes, e-audiobooks were not yet a mainstay of library collections, and Moyer urges libraries to embrace their growing popularity and support audiobook readers with collections and services.

Dali and Brochu (2020) go a step further and consider the robust inclusion of audiobooks in library collections as a way of practicing of ‘diversity by design’ because audiobooks meet the needs and preferences of multiple historically under-represented groups including people with a print disability, but also those with schedules too hectic for print or braille reading, and people with lower literacy skills.

### Audiobook standards and other relevant publishing standards

The scholarly literature on audiobooks offers some insights into user needs and how professionals such as educators and librarians may respond to users needs, the role of standards in digital publishing and accessible publishing is critical. Shared publishing standards permit books created by various publishers and producers to be distributed and read across platforms and devices and for readers to have baseline expectation about the reading experience. Because they are so critical to this work, we review the standards guiding audiobooks.

The Audiobook Creation Exchange (ACX) submission requirements form is an unofficial standard for commercial audiobook production and distribution. For an audiobook to become available through Audible, iTunes, or Amazon, it must meet the ACX submission requirements (O’Hare).

The purpose of the requirements is to ensure all audiobooks meet a standard level of quality. Some of the audiobook file requirements are: consistency in overall sound and formatting (consistent audio levels, tone); statement of opening and closing credits; inclusion of an audio sample; one chapter or section per file (except if that file is over 120 minutes, the producer is directed to find a good break in the narration to split the files); stating the section header if contained in the manuscript (i.e. “Chapter 1”), and various other requirements, like compression rate and loose file naming conventions (“use only standard US alphabetical/numeric characters”).

The ACX submission requirements do not address any notion of accessibility explicitly, however many of the checkpoints can and do have implications for creating and distributing an accessible audiobook. As such, revising this standard with accessibility in mind may be a helpful starting point for encouraging publishers to create born accessible audiobooks.

#### W3C Audiobooks standard

To address the need for open standards for audiobooks, W3C developed the Audiobook specification. The specification set out to create an open standard for audiobooks and address common user experience and accessibility problems identified within the commercial audiobook landscape. Some of the issues the specification addresses include the ability to navigate by clearly labelled section (chapter, for example) of an audiobook and access supplementary material. The specification was tailored to address these issues by outlining a way for audiobook publishers to provide a JSON manifest file that lists the tracks in the correct sequence, including all the supplemental materials, as well as the length of each chapter. The specification also includes an option to map the audio content to the text content (Tech Forum, 2020). The specification recommends the use of the Lightweight Packaging Format, which allows publishers to supply audiobook contents, supplementary or related files, and associated metadata in a single container (W3C, Lightweight Packaging Format). The goal of the specification was to reduce the need to produce and distribute two copies of an audiobook (a DAISY version with enhanced accessibility features in addition to a commercial version) while also solving some of the identified accessibility and user experience issues (Tech Forum, 2020). This standard has not yet been widely adopted, and the reasons for this will be discussed in the stakeholder consultation below.

## User Needs, Experiences and Barriers to Accessibility

As a part of the Landscape Review, we consulted with users of commercial audiobooks with lived experience of print disability and non-profit organizations that support individuals with disabilities. We were interested in learning about the needs and experiences of individuals with lived experience of print disability who use commercial audiobooks, and any barriers to accessibility they have faced when accessing commercial audiobooks.

The learnings from these consultation sessions helped to inform the Recommended Features List for Testing as well as the broader overall recommendations from this project.

## Consultation with Individuals with Lived Experience of Print Disability

To better understand the current state of accessibility of audiobooks, we conducted five 1-hour long sessions with five audiobook users with lived experience of print disabilities. These individuals had experience with a vision related disability and/or a learning disability. NNELS assisted us in connecting with these users for consultation.

Of the five users we interviewed, three were screen reader users and the other two used screen magnification tools. The two that used screen magnification tools were, in general, less familiar with the accessible audiobooks available in specialized libraries and the specialized players associated with them. They were mainly using mainstream sources for their audiobooks. This group did not include readers with lived experience with dyslexia or print disabilities caused by a physical disability.

Only one out of the five interviewees read audiobooks in both English and French, so we do not have enough data to reflect on any comparison between the English and French audiobook landscape.

To obtain quantifiable results, we also asked the users to perform a list of preset tasks on an audiobook of their choice, and to share their findings with us in writing before the interview.

The written questions and the structured discussion with each participant, helped us to gain insights in the following broad categories:

* General experiences with audiobooks, commercial and/or accessible
* Barriers encountered when using commercial audiobooks
* Desired features that would improve user experience with audiobooks
* Comparison between commercially produced audiobooks and those included in specialised libraries

### Limitations of This Phase of User Consultation

The users with print disabilities consulted at this stage of the project are working age individuals with good technology skills. They can access information in a variety of ways (audiobooks players and applications, text-to-speech, braille etc.) and often find ways around accessibility barriers.

In the experience of CELA staff, there are many readers with print disabilities who do not have either the access to technology or the technical skill, or both, required to be flexible about how they access information. For many readers, audiobooks are the only way they can access written material, and they rely on audiobooks heavily for information, entertainment and participation in recreational opportunities. Accessibility guidelines should take the range of user skills and access to technology into account and not require more technical skill and adaptability from people with disabilities than is required of those without a disability.

This initial consultation step highlighted important considerations from the perspective of readers with a print disability and informed the Recommended List of Features to be used in the testing phase of the project. Subsequent stages of the project engaged a broader range of user experiences.

### User experiences with audiobook platforms

The first clear realisation emerging from our user consultations is that any accessibility considerations of an audiobook cannot be examined without also taking into account the platform used to access the content. Therefore, although our focus is on the content accessibility itself, we will also mention conclusions that pertain to the platforms.

The most popular commercial platforms identified in the sessions were Libby and Audible. These were used predominantly by four out of the five interviewees. Libby and Audible are generally used on mobile devices, and less commonly, the PC, while the PC accessibility is less optimal. The fifth interviewee mainly uses Hoopla with screen magnification.

As for the reading systems used for accessible books borrowed from specialized libraries, the experiences vary among the three users who are familiar with them. One interviewee reads books from specialized libraries both on PC and mobile devices, another uses only mobile devices. The third interviewee uses Windows Media Player to borrow material from specialized libraries. Windows Media Player does not have a good way to navigate through chapters or remember the last playback position. In this user’s case, one might have expected the user to have an optimal experience because they were accessing a specially produced accessible book, but in fact, their experience was inferior compared to reading the audiobook on a commercial reading platform. This illustrates the important role that the technology used to read the content can play for an accessible experience.

### User experiences with audiobook content

All users mentioned that sometimes multiple chapters are included in the same audio track which prevents navigation by chapter, unless the reading system provides some other means of navigation. Users prefer that content is separated into meaningfully titled files, corresponding to those in the print book.

Frontmatter, epigraph and other types of content are often omitted in commercially produced books or, if they are included, they are not given a separate meaningfully titled section that can be easily found or skipped.

There can be a lack of meaningful titles for the various sections of an audiobook. The selected titles often do not correspond to the chapters or sections in the original content. The importance of having meaningful titles reflected in the table of contents and also in the file names of each section is mentioned by several users. This ensures that, regardless of the reading system used, there is a better chance of accessing this information.

Poor narration, either because of inflection or diction of narrator (less prevalent in commercially produced books) can decrease enjoyment of a book, leading some users to choose text format over audio.

Another audio related comment mentioned by some users is that, sometimes, audio quality may suffer occasionally due to changes introduced during compression, processing or re-packaging. This is more often encountered in specialized library content, and less often in current commercial productions.

### Features contributing to robust audiobook experience

For some users with a print disability, audio may be the only format in which they can access a book, so we assume that audio should provide access to the same information as text formats. The users consulted listed several features that if added to audiobooks would make them robust for more specialised goals such as study.

* Well-marked chapters, possibly incorporating page number of each chapter, might help to find the corresponding passage in a separate text version to be consulted for details.
* Inclusion of image descriptions if relevant for understanding content.
* Having easy access to the text, ideally synchronized with the audio for easy switching between the two, would offer the best of both worlds. This would allow users to search for specific details in the book and conduct focused reviewing of material using text while still accessing human narration for the rest of the time. Alternatively, having access to a separate well formatted text version of the book would be useful and, arguably, more achievable.
* Inclusion of footnotes, endnotes, and other reference material in a way that one can easily access them or skip them and return to main text.

Note that the content related features mentioned above would only be useful if they were supported by the reading platforms.

The users who reflected on these features noted that they don’t often need to use them in audiobooks, because they can choose a text format right away if they think this will be better suited for their needs. Microsoft Word was the option cited by one user as being the most useful for adding revisions and manipulating text. Other options from accessible libraries for text format were DAISY text and EPUB. Alternatively, some turn to commercially available ebooks such as Kindle and Apple Books.

### Value of choice in reading platform

Several users mention the inherent learning curve when starting to use a platform. A coherent interface with well labeled controls and good help documentation would help to mitigate this concern. As an example, two out of the three heavy users of audiobooks mention that, on some platforms, the table of contents button is buried in a menu or only accessible by selecting the name of the currently playing chapter. So, unless a user has good exploration skills, this can be missed.

Several users appreciated the fact that books from specialized libraries are not tied to a specific platform, and mention that it would be desirable to have a commercial audiobook which could also be played on multiple platforms, so users can have more flexibility in choosing their best suited player.

However, it was also noted that there are definite advantages in having a well-integrated experience for searching, acquiring, and playing an audiobook, all in one place. In this sense, some vendor platforms can offer the advantage of a well-integrated and overall accessible experience. To illustrate, some users noted that it was easier to obtain a commercial book than having to search for and download the accessible book from a library and then having to transfer it to their device of choice.

The following is a relevant quote from the pre-interview questionnaire, filled out by a user with extensive experience with both commercial audiobooks and accessible library produced audiobooks. The user compares the flexible user platform offered by accessible libraries to the experience of a single platform used for all stages, from content search to playback:

“…Commercial or library audiobooks generally need to be read in the app associated with the service it was obtained from. CELA and NNELS titles can be read in any app which supports the format. Ease of access - In library apps or Audible I can search for a title, obtain it, download it, and start listening, all in one app. Titles from CELA and NNELS generally need to be downloaded, then transferred to my app of choice. Voice Dream Reader can connect directly to CELA or NNELS [website] to download titles, but Voice Dream Reader is also far more expensive than other accessible reading apps.”

The user’s summary reflects the advantages of flexible platforms and the benefit of being able to accomplish all the tasks necessary to read an audiobook on one well integrated platform.

### Conclusions from user consultation

1. The single most mentioned desirable feature is good separation of well labeled sections. Having file names reflect the titles of sections is important to offer better navigation within a larger number of players.
2. Users that were more experienced with both commercial and accessible formats note that they appreciate having access to some of the sections often left out in commercial books such as front matter or appendix information, which are more often included in alternate format production books.
3. For more detailed interaction with an audiobook, having access to full text, ideally synchronising audio and text, and also to footnotes and relevant image descriptions is beneficial, provided one can easily navigate around them and return to the main text.
4. Offering content on multiple platforms is useful, but it is also necessary to have various platforms offer robust accessibility, be it on web interface, mobile app, or desktop app.
5. Accessibility features present in books need to be supported across reading platforms or vendors, for example by including section information in both metadata and file names of the sections.
6. Cooperation should be improved between content creators and reading platform developers to ensure that any new accessibility features added by content providers can be supported by multiple reading platforms and thus allow the end users to fully benefit from them.

## Consultation with Non-Profit Organizations Supporting Individuals with Print Disabilities

To complement the insights gained from the consultations with users living with print disabilities that use screen readers and magnification, we thought it was important to obtain information regarding the needs and experiences of individuals with other types of print disabilities, as well as the barriers they may face when reading commercial audiobooks. We reached out to five organizations that support individuals living with disabilities that could include print disabilities. Dyslexia Canada and Cerebral Palsy Alberta/Cerebral Palsy Canada Network participated in consultation. We did not receive responses from the other organizations. Given time constraints of our project, we provided the organizations with a short window during which consultation needed to be completed. As a result, the other organizations may not have had the time or resources to participate.

### Dyslexia Canada

The conversation with the Alicia Smith, Executive Director of Dyslexia Canada gave us a useful high-level overview of the important role played by audiobooks for users living with dyslexia, as well as insights about desirable accessibility related features for audiobooks and platforms. An advantage of using audiobooks for individuals with lived experience of dyslexia in the early formative years, is to bridge the gap between reading skills and comprehension ability. “Students with dyslexia take a longer time to become fluent readers... but their comprehension abilities are usually far beyond what they can read fluently…so giving them access to audiobooks helps them to continue to grow their vocabulary and their background knowledge” (Alicia Smith).

“Most individuals with dyslexia can read...it’s more of a reading rate issue” (Alicia Smith). It is not a visual disability; this is a common misconception (Alicia Smith). The use of audiobooks can help older students complete reading assignments when they have “higher reading demands” to avoid burnout (Alicia Smith). There is also a “higher retention rate” when students with dyslexia use audio (Alicia Smith).

For more complex material, accessing the content using audio rather than text can free up mental resources needed for decoding text, thus improving comprehension (Alicia Smith).

#### Platform related desirable features

All features mentioned here were also regarded as advantageous by the users with print disabilities that we consulted through NNELS.

* Remembering last playback position
* Clear labeling of controls
* Easy navigation
* Adding bookmarks
* Speed control

#### Content related desirable features

* Human, engaging narration for the main text
* Ability to have audio and text synchronized, or have good access to both text and audio versions of the same book

#### Comments on other audiobook content and features

* Alicia Smith did not think that using synthetic voice for end matter would pose a problem for individuals with dyslexia.
* Alicia Smith did not think that including all content from the print book in the same order as in the print book would pose a problem for individuals with dyslexia.
* Alicia Smith thought that having image descriptions in the main body of the text would be fine, but she also mentioned that it would be useful to have the ability to toggle certain accessibility features on and off in case some users find them distracting.

### Cerebral Palsy Alberta/Cerebral Palsy Canada Network

The representative we interviewed, Leah Ison, has over eleven years' experience working with various organizations related to cerebral palsy. She also works with a more general collaborative organization called the Alberta Ability Network.

#### Insights

Cerebral palsy can affect individuals in very different ways and can also impact individuals to varying levels of degree along a spectrum. Cerebral palsy can impact motor skills used to hold books or devices or touch buttons and interact with screens. Cerebral palsy and neurodivergence (such as ADHD, sensory concerns and autism) are closely linked together, but not all individuals with cerebral palsy experience neurodivergence (Leah Ison).

Digital content (text and audiobooks) is used by individuals with cerebral palsy to minimize need for motor interaction (Leah Ison).

Adaptive technologies used by individuals with cerebral palsy can include switches, mechanical devices (such as Guiding Hands), eye tracking technology and voice control (such as for tablets, PC or smart speakers) (Leah Ison).

#### Platform considerations

The Libby platform and smart speakers were identified as being used by individuals with cerebral palsy to access audiobooks.

#### Content related considerations

Many of the suggested features from our user consultations through NNELS might not be needed for all users with lived experience of cerebral palsy. For example, Leah Ison indicated that users with cerebral palsy might not always need accessibility features such as image descriptions. However, Leah Ison thought that individuals with cerebral palsy would be understanding of accessibility features in an audiobook like image descriptions and would not be deterred by them.

One notable exception is narration. Since people living with cerebral palsy can also experience neurodivergence, special consideration should be given to whether volume levels and audio quality might affect the listener in these cases. Artificial intelligence might offer a smoother delivery that could be beneficial compared to a voice that is raspy and could pose problems from a sensory perspective (Leah Ison). At the same time, emotional cues can be important to others such as those with lived experience of autism as they may be important for an individual to understand how the passage being read aloud is intended to make them feel (Leah Ison).

### Conclusions

The consultations with representatives of the organizations that support individuals living with disabilities allowed us to examine how various accessibility features might affect users living with different subsets of print disabilities.

* The reading platform plays a crucial role in rendering the audiobook experience accessible for all types of print disabilities.
* When implementing guidelines for good narration and audio quality, it is important to consider the needs of users with lived experience of neurodivergence.
* Many accessibility features can benefit users with varying types of print disabilities. However, it is also possible that, at times, the needs of certain users with print disabilities may be in direct opposition to the needs of other users with print disabilities.

## Consultation with Publishers, Producers and Other Industry Stakeholders

As a part of the Landscape Review, we consulted with organizations creating and distributing accessible audiobooks, and commercial audiobooks in Canada and abroad as well as other stakeholders. Consultation was conducted between April and July of 2024.

We were particularly interested in:

1. whether organizations were aware of any general or accessibility standards or guidelines for commercial audiobooks and whether they were using these standards or guidelines
2. current practices for specific content, features and format of commercial audiobooks
3. any differences in accessibility practices for French commercial audiobooks compared to English commercial audiobooks in Canada
4. challenges in implementing accessibility standards for commercial audiobooks
5. recommendations from those consulted regarding commercial audiobook accessibility standards and audiobook production practices

We consulted with:

* Wendy Reid (Accessibility and Publishing Standards Lead from Rakuten Kobo)
* Christen Thomas (Director, CNIB Beyond Print), David Stinson (Studio Supervisor for Audio Publishing) and Charles Huot (Studio Supervisor) from the Canadian National Institute for the Blind (CNIB)
* David Caron (Co-Publisher), Jessica Albert (Digital and Art Director) and Cassie Smyth (Audiobooks Manager) from ECW Press
* Kieran Leblanc (Executive Director) and Megan Bishop (Project Manager) from the Book Publishers Association of Alberta (BPAA) and Matt Bowes (General Manager) and Meredith Thompson (Production Coordinator) from NeWest Press
* Daniella Levy-Pinto (Manager) and Corey Wintemute (Audiobook Coordinator) from National Network for Equitable Library Service (NNELS)
* Julie Rainville (Project Manager and Editor of Collections Magazine) and Karine Vachon (Executive Director) from L’Association nationale des éditeurs de livres (ANEL) and Véronique Fontaine (Vice President of ANEL and President of éditions Fonfon)
* Emma Côté (Technology Specialist) from eBOUND Canada (eBOUND)
* Marjorie Théodore (Chief Executive Officer) and Jean-Sébastien Laliberté (Broadcast and Technical Manager) from Vues & Voix
* Michele Cobb (Executive Director) from the Audio Publishers Association (APA)/Small Audio Publisher
* Laura Brady, Independent
* Richard Orme (Chief Executive Officer) from the DAISY Consortium
* Gautier Chomel (Project Manager and Accessibility Expert) from EDRLab
* OverDrive

We invited two other organizations to participate in the consultation. We did not hear back from one organization and one organization expressed it did not have capacity to participate in the consultation at the current time.

Two interviews were also conducted with CELA Staff. The staff interviewed included Lindsay Tyler (Senior Manager), Ioana Gandrabur (Peer Mentor) and Megan Toye (Accessible Digital Asset and Metadata Coordinator). Ioana has "lived experience using CELA services and…help[s] test different delivery options”. She also “provide[s] training to patrons in using various technologies and reading CELA books.”

For most consultation sessions the interviewers used an interview guide to direct the consultation. Karine Vachon provided some answers in writing for her colleagues to read during the consultation session. For some consultation sessions, a new list of topics or questions was created, and its content depended on the specific expertise of the individuals consulted. OverDrive used our interview guide to provide written responses.

The themes that emerged from the consultation sessions and the specific recommendations made by those consulted were useful in informing both the Recommended Features List for Testing and the broader final recommendations of the Accessible Commercial Audiobooks Project. An extensive amount of information was obtained through consultation. Highlights and important takeaways are summarized below and listed in Appendix 1.

## Current Standards and Accessibility Standards for Commercial Audiobooks

### General Landscape

There is a lack of general standards and accessibility standards within the commercial audiobook industry. Gautier Chomel (EDRLab) describes the landscape as “…a vendor dominated ecosystem where every…vendor imposes a format for [its] own use…”

Laura Brady (Independent) referred to recent conversations she has had with others in the industry:

 “…about how there are no standards, that it's the Wild West when it comes to publishing an audiobook…every vendor is a little bit different and there's tons of inconsistency…[v]endors are just letting people throw a lot of spaghetti at the wall to see what sticks…it's chaos.”

Technical standards that do exist are generally set by retailers/vendors. This includes requirements for things like metadata fields, file deliveries, artwork, and whether to include a table of contents (Michele Cobb, APA). “…[E]ach publisher generally makes their own determinations on which things…they are going to include based on their relationship with the retailers…” (Michele Cobb, APA).

The ACX Audio Submission Requirements used by Audible are an example of technical standards used in the industry. Many of the organizations we consulted with referenced the ACX Audio Submission Requirements as a good set of submission requirements (Rakuten Kobo; NNELS; ECW Press).

Audiobooks are at best a secondary consideration in conversations and efforts to advance accessible and inclusive publishing (Laura Brady, Independent; Richard Orme, DAISY Consortium). There could be several reasons for this. Many people in the field consider audiobooks inherently accessible simply because they are in audio (Laura Brady, Independent).

Ebooks have been a higher priority in accessible publishing efforts than audiobooks because ebooks are crucial for equitable access to the content. However, as progress is achieved on ebook accessibility, it’s time for audiobooks to be considered too (Richard Orme, DAISY Consortium).

### W3C Audiobook Specification

The World Wide Web Consortium (the W3C) audiobook specification is a standard that addresses both technical and accessibility concerns. The audiobook specification was published on November 10, 2020 (Audiobooks, 2020). The W3C audiobook specification built on 2016 the Readium Foundation audiobook specification. The Readium Foundation specification “is used to ingest…and the render audiobooks in a Readium based reading system” and is still used currently. However, it has not been published and is not used by audiobook publishers or known to readers (Gautier Chomel, EDRLab).

Wendy Reid is the current Chair of the Publishing Maintenance Working Group at the W3C on behalf of Rakuten Kobo. The Publishing Maintenance Working Group is in charge of maintaining the audiobook standard and Wendy Reid is an editor of the audiobook standard. According to Wendy Reid, the audiobook specification tried to address problems with “the way audiobooks are currently sent through the supply chain and delivered to the end user” which result in a poor user experience. The goal was for the end user to have a “reliable table of contents”, “detailed metadata about the construction of the book” and “we were hoping…in the structure of the…manifest to also allow for some accessibility features that weren't already present in mainstream audiobooks today” (Wendy Reid, Rakuten Kobo). The W3C audiobook specification is a recommendation, and its use is not mandatory within the audiobook industry.

Rakuten Kobo uses “…an internal standard that's slightly different from the W3C [specification].” It was “…established…before the W3C one was…finalized…It's very similar though, and so the transition between the two is…negligible” (Wendy Reid, Rakuten Kobo).

The audiobook specification has “…had some take up, but…[i]t still hasn't proliferated fully through the supply chain” (Wendy Reid, Rakuten Kobo). It is used by Google in audiobook conversion and by Hindenburg (an audiobook production tool). CoreSource (a platform that can be used to deliver audiobooks to vendors) is also capable of using it (Wendy Reid, Rakuten Kobo).

There are several reasons that may explain why the audiobook specification has not been adopted broadly by the audiobook industry. When the Audio Publishers Association (APA) was approached about the specification years ago, it expressed concern about anti-trust (Wendy Reid, Rakuten Kobo). The APA would have been “…probably the number one place to get this into…the hands of the publishers and get...them thinking about structuring their content in this fashion” (Wendy Reid, Rakuten Kobo). Wendy Reid expressed uncertainty regarding how anti-trust issues would be of concern because the specification is about file formats and the structure of the content, not sales.

Michele Cobb from the APA mentioned anti-trust as a current concern with respect to standards for commercial audiobooks:

“We, as a trade association have to be careful of how we participate in these things because nothing can be crossing lines of antitrust. So, although there have been conversations … and the W3 has set some standardizations that they would like to see, it's up to the retailers to adopt and the publishers to…make their choices based on that.”

Michele Cobb (APA) also provided some elaboration on the concern from an antitrust perspective:

“So…for antitrust, anytime you have competitors in a room together that are talking about things that involve discounts, money, forcing another group to do something, we just have to be very careful. So we have an antitrust lawyer that attends our board meetings that would participate in anything and we would look to that lawyer for guidance on what conversations are okay to have and are not okay to have. The W3 workgroup worked on its own and I don't know that they've been particularly successful at getting the retailers to adopt. It's fine to have standards but unless the retailers have adopted a standard or make a requirement it doesn't change the way we're doing business currently. As a group we are cautious based on the…lawsuits that have happened more in the ebook world. It's not been an audiobook issue, but many of our members are retailers and publishers as well, so we have unique challenges…”

Another reason for lack of uptake of the W3C specification may be that the specification is highly technical and not easy for a layperson to understand. Cost and time pressures may also be a factor for smaller organizations within the book industry.

When Michele Cobb (APA) was asked about challenges in implementing accessibility standards, she discussed the importance of:

“…making sure that things are easy to understand, like I've certainly seen the W3 workgroup standards. I'm not a tech person, so I don't necessarily understand exactly what they're asking me for. Clear layman terms and simple documentation is important and then understanding, especially for the smaller publishers who have limited resources, limited staff, making it something that's easy to achieve. If it requires you to kind of reinvent the wheel it's very hard for a smaller publisher to implement. If there's…a large time or a large cost to it, it becomes…a hurdle.”

Other reasons that the audiobook specification has not been widely taken up include that using the audiobook specification requires tooling and that there is developer work that needs to happen on reading platforms so that features such as image descriptions and linking to and opening supplemental content can be supported (Wendy Reid, Rakuten Kobo).

### Guidance Resources, Checklists and Internal Standards

When it comes to accessibility standards, a number of the organizations consulted are using guidance from best practices guidance resources and checklists or internal standards.

Some of the resources included:

1. The Department of Canadian Heritage Checklist (DCH Checklist) which was required for projects that obtained funding to create audiobooks using the Canada Book Fund.
2. A best practice guide for accessible audiobook production published by eBOUND and CNIB in 2020: [Experimentation Project for Accessible Audiobook Production: Best Practices in Publisher Workflow.](https://www.eboundcanada.org/resources/experimentation-project-for-accessible-audiobook-production-best-practices-in-publisher-workflow/)
3. [Accessiblepublishing.ca](https://www.accessiblepublishing.ca/audiobook-recommendations-for-publishers/) audiobook guidance
4. [Accessible Publishing Learning Network](https://apln.ca/)
5. Web Content Accessibility Guidelines 2.2

CNIB uses the DCH Checklist when it makes commercial audiobooks. They also “…follow the best practices outlined in the report [they] did with the eBOUND and from [CNIB’s] decades of experience in this production space” when making DAISY audiobooks (David Stinson, CNIB).

BPAA has been guided by CNIB for all standards (Kieran Leblanc). Many BPAA publishers are also Benetech certified so they are also going through that level of accessibility scrutiny (Kieran Leblanc, BPAA).

Publishers at ANEL are using the DCH Checklist but it is not a clear standard and it does not necessarily work as well for all types of books (for example, short illustrated books without chapters compared to novels) (Véronique Fontaine, ANEL & éditions Fonfon).

Éditions Fonfon makes audiobooks from illustrated children’s books. They collaborate with the author to make a new version of the print book. They do not use traditional image descriptions but instead, they ensure that text is not missing any information and they adapt the text so it can be understood without the images. They use sound effects and music to convey emotion that would usually be communicated through the illustrations. Véronique Fontaine wants the experience of listening to the audio to be as rich as reading the print version so that the print book can live its life as an audiobook (Véronique Fontaine, ANEL & éditions Fonfon). This artistic interpretation of the print book through audio is Véronique Fontaine’s standard but this standard does not currently exist more broadly (Véronique Fontaine, ANEL & éditions Fonfon).

Marjorie Théodore from Vues & Voix points out that there is no established guideline/standard or leader in Canada or Québec when it comes to accessibility standards for commercial audiobooks. There are production standards to ensure good sound quality but not accessibility standards (Jean-Sébastien Laliberté, Vues & Voix). Vues & Voix uses the DAISY standard for accessible audiobooks and follows the standards of the National Library Service for the Blind and Physically Handicapped (Library of Congress).

At a conference in Kenya in 2023, Marjorie Théodore (Vues & Voix) observed a trend that others, including those from France and Switzerland are moving towards EPUBs with multiple functions.

NNELS does not create commercial audiobooks, but it does create audiobooks in both DAISY and MP3 formats. NNELS uses the ACX Audio Submission Requirements, AccessiblePublishing.ca guidelines, internal wikis and other in-house standards (Corey Wintemute, NNELS).

ECW Press has its own technical specifications and content guidelines. One of ECW’s roles is distributing directly to other partners. ECW Press uses Audible’s technical specifications because if they meet the specifications for Audible, this also satisfies all the technical specifications of all the other vendors.

ECW Press requires one chapter in each audio file as well as one audio file for each component of front matter such as title cards, dedications, etc. They also require an Excel file manifest for the table of contents (Jessica Albert, ECW Press). When it comes to content:

“We try to create everything that is in the book in an audio format…We've got our title file, we have front matter, dedication, epigraph…chapters etc., back matter. When it comes to the copyright page, we tend to just lump that information into the credits file at the end of the book. We don't generally have a description for the cover art… we don't generally include the table of contents for the print book in the audiobook just because it doesn't tend to translate…but most everything else we include...” (Cassie Smyth, ECW Press).

ECW Press also has internal best practices for specific things such as footnotes, endnotes, bibliography, alt-text, works cited, etc. (Cassie Smyth, ECW Press). The best practices used by ECW Press were developed with input from NNELS and accessibility testers at NNELS with lived experience of print disability (Jessica Albert, ECW Press).

Emma Côté, at eBOUND has compiled a document with technical standards for all vendors that she uses to send out as a checklist to publishers. Emma Côté is not aware of any accessibility standards from the vendor side. “I have asked a couple of times about accessible descriptions, audio descriptions for vendors, but I haven't gotten a clear answer about how they want that communicated” (Emma Côté, eBOUND). While not using a specific set of accessibility guidance, Emma Côté uses her knowledge from working in the field of accessibility to advocate for accessibility such as for “the creation of a table of contents that properly matches the print version or the ebook version…” (Emma Côté, eBOUND).

When asked about general audiobook standards or guidelines, OverDrive indicated it “has a template for publishers to submit required metadata fields for audiobook content”. When it comes to accessibility standards and guidelines, “OverDrive’s goal is to comply with the WCAG 2.2 Level AA success criteria across our websites and apps.” “WCAG contains a few guidelines for audiobooks and other audio content, but most of the guidelines are not specific to audiobooks” (OverDrive).

OverDrive also stated that “WCAG 2.1 Level AA are the industry standard guidelines. They are aimed at meeting the needs of people with a broad range of disabilities. Following these guidelines has improved the accessibility of our websites and apps.” Furthermore, OverDrive noted:

“…as part of our development work to make our websites and apps accessible in accordance with WCAG, we conduct experience testing and evaluation, and utilize the services of third parties, such as Fable and Level Access, to better learn, discover, test, and implement accessibility features for users with disabilities, including print disabilities” (OverDrive).

CELA is not a producer of audiobooks but does contract with producers to obtain audiobooks produced to the DAISY 2.02 standard. CELA also purchases commercial books and converts them to the DAISY 2.02 standard. In addition, CELA distributes DAISY 3 audiobooks through Bookshare, “one of [CELA’s] partners” (Lindsay Tyler). Megan Toye at CELA has observed that “[m]ostly it seems a lot of organizations are sticking with DAISY 2.02, but we are seeing some moving to DAISY 3.”

The audiobooks obtained through CELA can be “downloaded as…ZIP file[s] or…provide[d] [via]…Direct to Player integration which helps users] have [books] delivered straight seamlessly to their compatible players” (Ioana Gandrabur, CELA).

CELA also distributes audiobooks using Envoy Connect (a portable reading device) and on CDs. CELA is also working towards the distribution of audiobooks though a smart speaker. Envoy Connect “strips out the DAISY structure and…essentially once they're on…that device…they're basically MP3 files.” The smart speaker converts DAISY audiobooks for the service and utilizes a READIUM manifest (Lindsay Tyler, CELA).

When working with producers, CELA tries to “collaborate on accessibility considerations” for those titles regarding “what makes sense for users” (Lindsay Tyler).

“…for example, in the last year we've had a conversation with CNIB Beyond Print about cover image descriptions and sought feedback from users on coverage description…likewise with graphic novel production, [which is a relatively] new area... [there’s been] a bit of back and forth…about…how those can be done and…what users think about them.” (Lindsay Tyler, CELA).

The DAISY Consortium board has discussed the need for an audiobooks accessibility standard that would define accessible audiobooks, like the EPUB Accessibility 1.1 standard has done for ebooks, but the work has not been taken up or prioritized at this time. Such a specification would have a similar relationship to the Audiobook specification as the EPUB Accessibility 1.1 does to the EPUB 3 standard (Richard Orme, DAISY Consortium).

Our consultation sessions did not identify any clear differences between accessible audiobook practices for English commercial audiobooks and French commercial audiobooks.

### Commercial Audiobooks and the Needs of Users with Print Disabilities

There are more audiobooks available than ever before, and commercial costs of audiobooks are lower than before (Richard Orme, DAISY Consortium). There are also new choices in how to read audiobooks such as through a smart speaker or applications compared to a decade or two ago when people often had to manage multiple CDs (Richard Orme, DAISY Consortium).

When asked, many organizations generally did not know whether the commercial audiobooks they were producing were meeting the needs of individuals with print disabilities because they were not receiving direct feedback from individuals with lived experience (ECW Press; EBOUND; BPAA; NeWest Press). NeWest Press did identify that one user with lived experience of a visual print disability known to them did not have trouble using their commercial audiobooks (Meredith Thompson).

CNIB which creates DAISY audiobooks, was clear in articulating its view, “…that general audiobooks are not accessible by their inherent nature. They are a flat file and until that is changed…or [you] find another way, you can't have an accessible file” (David Stinson, CNIB). The current commercial audiobooks do not have full navigability like a DAISY audiobook which allows for navigation at a page and chapter level and searchability. Furthermore, DAISY audiobooks “…follow the text absolutely and that's really important obviously for accessibility” (David Stinson, CNIB).Lindsay Tyler from CELA highlights the importance of treating audiobooks as a “real” version of the book:

“[S]ometimes there's an assumption that…the reader would…[choose] to…have access to the EPUB or the print [version] if they want… “the real book” …with all the details and content…[However] for so many of our users, the audio is the only thing that they are reading. Realistically, that's the only thing…that they have access to…the DAISY player may be their only access…to books and literature and so on. [T]he audiobook is [a] real [version of the book] and is …the only or primary means of access for a lot of people… [It should be [made] as full and rich as possible…and easy to use too.” (Lindsay Tyler, CELA).

Current commercial audiobooks do not meet user needs if the audiobook is the only version they can depend on as there is a lack of things like supplemental content, bibliographies, etc. (Wendy Reid, Rakuten Kobo).

“The users are not being served by audiobooks when they need them in a non…pleasure kind of situation…I think the commercial audiobooks industry is focused so strongly on...casual consumption of audiobook content that they don't realize that there are people out there that would be using them for non casual use…” (Wendy Reid, Rakuten Kobo).

According to Ioana Gandrabur (CELA), “commercially produced books generally don't… tend to include all the reference material and…notes and…cover page material.” In addition, “[a]ppendices or…[other] quite extensive material…notes of the author at the end or [other material] …it's all often taken out. Not always, [but] most of the time” (Ioana Gandrabur, CELA).

When it comes to the accessibility of commercial audiobooks, Ioana Gandrabur from CELA has observed generally, “…there is a long way to go in some instances…but [in some examples] the quality of the navigation… [can be]…quite good as long as…the user [is] aware [of the features] and [is] able to…take advantage of them...” Navigation in commercial audiobooks is a particular feature that could be improved for all users. For example, you cannot easily find a chapter when going between an ebook and audio version to switch back and forth (Wendy Reid, Rakuten Kobo).

Annotations and other features are also missing (Wendy Reid, Rakuten Kobo). Generally, images are not captioned or described in commercial audiobooks (Ioana Gandrabur, CELA). “[T]here are some…exceptions” for example, “in a commercially produced book by an author who has a [child with lived experience of dyslexia] …every image was described properly [and] that was quite nice” (Ioana Gandrabur, CELA). Furthermore, even when the audiobooks themselves are made with accessibility in mind, accessibility features can be lost when the reading system is not compatible with the accessibility features. For example, no platform can currently support supplemental content (Wendy Reid, Rakuten Kobo).

The accessibility of the platforms used to read the audiobooks is hard to separate from the accessibility of the audiobooks themselves (Ioana Gandrabur, CELA). There can be issues such as with “invoking the menu” or “unlabelled buttons.” There can also be issues with screen reader compatibility such as in circumstances where “[buttons] are not read at all…by the screen reader [in the platform], and basically you cannot action them unless you turn off the…assistive technology...” (Ioana Gandrabur, CELA). Sometimes the issues of accessibility exist at the point of purchase of the audiobook and deter the user from purchasing the audiobook from that vendor (Ioana Gandrabur, CELA). “[A] platform can completely break the accessibility of a book, no matter how [it has been] produced” (Ioana Gandrabur, CELA).

## Challenges in Implementing Accessibility Standards or Practices

Those consulted identified many challenges to implementing accessibility standards or practices in the commercial audiobook industry. Some of the challenges in implementing accessibility standards have already been discussed with respect to the implementation of the W3 specification such as: potential concerns with anti-trust, ensuring that a standard is clear and accessible to a layperson as well as concerns about time and cost. In addition, standards need to be achievable by small publishers with limited staff. Reading platform compatibility was also raised as a concern.

Kieran Leblanc (BPAA) noted a big barrier that was flagged at that at this year’s Accessible Publishing Summit: “[R]eading platforms are not keeping up adequately with the actual formats and content that are being produced”. The distribution of audiobooks is problematic and is not as well developed as distribution for ebooks (Kieran Leblanc, BPAA).

### Copyright

A major issue with implementing accessibility standards is copyright. This is an issue for implementing the W3C audiobook specification because captions and transcripts required as a part of the specification cannot be generated because of copyright concerns (Wendy Reid, Rakuten Kobo). In the publishing industry, there is a splitting of rights between print, ebook and audio and “even when they’re sold together...they’re treated as discrete products...with no interplay...” (Wendy Reid, Rakuten Kobo). Copyright is a barrier to audiobook accessibility across the supply chain (Wendy Reid, Rakuten Kobo).

Many audio publishers do not have access to print rights.

“Certainly the Big 5 publishers who are doing the print have access to both [print and audio rights]. Many of the other audio publishers, probably the majority, only have the audio rights, so they don't have the print as well” (Michele Cobb, APA).

As a small audio publisher Michele Cobb only acquires audio rights and does not have access to text rights (Michele Cobb, APA). Michele Cobb also mentioned that there was a lawsuit involving a retailer that had “generat[ed] text from the audio”. It is different when it is for individuals who are blind or who have a vision related disability because there is a “right to do a separate recording”. (Michele Cobb, APA).

We were able to identify a relevant legal challenge involving audio rights. In 2019, several major book publishers brought a lawsuit against Audible when it introduced a captioning feature for audiobooks (*Chronicle Books, LLC v. Audible, Inc.,* 2020). The lawsuit settled in 2020 and the captions program was not introduced (Albanese, 2020).

Another real-world example of how copyright has posed an issue for accessibility in the publishing sector is with respect to the availability of text-to-speech (TTS) (Matt Bowes, NeWest Press; Richard Orme, DAISY Consortium). Amazon announced that TTS was going to be a feature on its Kindle 2 device (The Author’s Guild, 2009a). This upset audiobook producers (Matt Bowes, NeWest Press) and raised concerns for publishers and authors (The Author’s Guild, 2009a; The Author’s Guild, 2009b). In the end, Amazon ended up reversing its stance on TTS for the Kindle 2 device. Rather than having TTS enabled on all Kindle 2 devices, “it would allow publishers (and thereby many authors) to block [TTS] audio functionality on a title-by-title basis” (The Author’s Guild, 2009b).

Wendy Reid highlights that copyright issues have prevented publishers from creating more accessible audiobooks. A few publishers and readers have expressed interest in including a transcript of the text to allow users to search or to access annotations, but they have run into issues with copyright because it could infringe on the rights of the ebook or print book (Wendy Reid, Rakuten Kobo). Similarly, OverDrive noted: “A known limitation is audiobook content does not permit speech-to-text functionality due to licensing restrictions from some supplying publishers.”

### Market, Financial and Workflow Considerations

Many organizations identified that financial concerns and the audiobook market were barriers to implementing accessibility standards for audiobooks (EBOUND; BPAA; NeWest Press; ANEL; Vues & Voix; ECW Press).

Matt Bowes (NeWest Press) and Kieran Leblanc (BPAA) agreed that the main issue for them is not the issue of standards, “it’s the market.” And “…there hasn't been the uptake to make it economically viable” (Matt Bowes, NeWest Press). NeWest Press is not set up to create audiobooks in-house and it is expensive to do so. “…[W]e're not making anything in-house just because of the cost. And honestly, [with] the lack of sales so far, it doesn't seem like a super valuable place to put all of our cash at the moment” (Matt Bowes, NeWest Press).

NeWest Press has been focusing on trying to sell the audio rights to “other people who are more embedded into the market and that's their whole job” (Matt Bowes). Kieran Leblanc (BPAA) only knows of one BPAA publisher that does audiobooks in-house while the rest contract out.

An example of how an accessible commercial audiobook can be more costly is with respect to end matter. It takes approximately two to three times as long to record a works cited or bibliography compared to “normal…narrative voice” which adds to the time spent in the studio, in editing, and it requires more of the narrators’ time (Cassie Smyth, ECW Press). ANEL also identified finances and the market as key barriers. ANEL stated that the audiobook market is not yet strong enough for the commercial or accessible audiobook. Prior to the availability of the funding through the DCH Canada Book Fund program, it was rare that publishers were making audiobooks (Véronique Fontaine, ANEL & éditions Fonfon). Publishers that developed skills in audiobook production will not be able to continue to do it without financing (Véronique Fontaine, ANEL & éditions Fonfon).

Jessica Albert (ECW Press) also emphasized that in Canada: “...publishers aren't necessarily able to even make audiobooks, let alone think about making [audiobooks as accessible as possible]”. Oftentimes the audiobook is not produced at all or the audiobook rights are sold. Once someone else has the rights to the audiobook,

“…we have no control over the way that that audiobook is produced or we're producing it ourselves on a shoestring budget [or with] grant money ideally, and things like that…I think a lot of Canadian publishers have the best intentions when it comes to accessibility, but it's not something that's always actually realistic on the ground” (Jessica Albert, ECW Press).

The cost and the availability of resources “…dictates how many projects they take on and…to what scope they…tackle…each project” (David Caron, ECW Press). Time, staffing and workflow were also identified as considerations by eBOUND (Emma Coté, eBOUND).

The French-speaking audiobook market faces unique challenges as it is behind the English-speaking audiobook market and audiobook habits are more anchored in the English-speaking community (Véronique Fontaine, ANEL & éditions Fonfon). It is also harder to get financial backing for audiobooks with large casts and sound effects compared to the English-speaking audiobook market. This is because audiobooks that are recorded in Québec are not necessarily going to have the same popularity in France because of the differences in accents. The English-speaking audiobook market has a larger client base (Jean-Sébastien Laliberté, Vues & Voix).

### Inconsistency, Uncertainty, Risk Taking and Buy-In

Many of those consulted identified that there is a great deal of inconsistency for requirements across the audiobook industry (Michele Cobb, APA; Gautier Chomel, EDRLab; Laura Brady, Independent; Emma Côté, eBOUND). This includes inconsistency with respect items such as metadata, file delivery, table of contents, supplementary materials and accessibility features.

For example, only four of the partners ECW Press distributes to will accept supplementary PDFs and only two will accept their table of contents (Jessica Albert, ECW Press). In addition, there is inconsistency regarding whether a reader will be able to access certain accessibility features because it depends on the specific reading platform or distributor. For instance, your ability to access a supplementary PDF may vary based on the particular retailer or library (Jessica Albert, ECW Press).

“…[W]e lose control of how the audio is presented to our readers once it's out at the different retailers and library locations…we can have the…best intentions on our end, and it…amounts to nothing for someone who is looking for that content” (Jessica Albert, ECW Press).

These concerns about clarity are echoed by Emma Coté from eBOUND. eBOUND has worked with some publishers that have made audiobooks using a grant funding program which have accessible features such as image descriptions located in separate audio files. Emma describes that “…we don't always know what to do with them, and…I don't know if they would always be accepted with …those additional descriptions…” (Emma Coté, eBOUND). In the case of an audiobook with lots of image descriptions, Audible did not like that there were “so many mentions of images…essentially, mentioning images when it comes to audiobooks…will flag their system somehow” (Emma Coté, eBOUND). In another example, a table of contents was thrown off by the addition of an audio file which described the cover of the book. The resulting table of contents was longer and had extra sections that were not in the print book. There was concern that including the file could have resulted in the submission being rejected (Emma Coté, eBOUND).

The lack of clarity and inconsistency when it comes to accessibility features in the commercial audiobook sector has led at least some audiobook publishers to believe that including accessibility features in their audiobooks poses a risk.

Wendy Reid (Rakuten Kobo), thinks that it is “…the smaller and the medium sized publishers…that…have actually taken more risks and taken much keener interest in implementing accessibility features.” Rakuten Kobo tries to encourage these publishers, but they face “format constraints.” It becomes a “chicken and egg” issue with publishers. “They sometimes are willing to take risks and do stuff, but most of the time if there's not a way to do it, that's clear, they won't do it at all” (Wendy Reid, Rakuten Kobo).

CNIB and ECW Press have both experienced examples of clients or publishers not wanting to include certain accessibility features.

“Some don't want things like endnotes or footnotes included. Usually these are publishers that are not using [Canada Book Fund] funding. We still recommend it, but they, you know, they ultimately make the final decision. In terms of the audiobook retailing requirements…Some publishers balk…at…the...kind of things we do where we would say and then spell out an email address, email, web address…where they have asked us for the commercial version to take all that out because they find it annoying. And that's pretty common…” (David Stinson, CNIB).

“…we're making the commercial version and the accessible version because there's pushback from listeners or there's hesitation from publishers to…include all content because bibliographies and work cited and things like that are long and difficult…people aren't necessarily listening to them unless they need them…” (Jessica Albert, ECW Press)

Obtaining buy-in from key players across the audiobook industry is a certainly a key challenge to implementing accessibility practices for commercial audiobooks (Emma Coté, eBOUND).

Lastly, there is also a lack of clarity about what publishers should do once they have made a book accessible. ECW Press has its own process for how it distributes accessible books once they have been created. David Caron (ECW Press) does not think this is generally understood within the industry.

### Complex Audiobooks

Currently, the commercial audiobook market is very focused on fiction books and serious non-fiction is not typically made into audiobooks. Textbooks, cookbooks and anything with a lot of visual content are not made into commercial audiobooks (Wendy Reid, Rakuten Kobo).

However, it may not make sense for every print book to be made into a commercial audiobook (Wendy Reid, Rakuten Kobo; Emma Coté, eBOUND). Is there “a limitation to the format” for things like graphic novels, picture books and academic texts? (Emma Coté, eBOUND). Emma Coté (eBOUND) wonders whether an EPUB might be more appropriate in certain circumstances.

Some print books are very challenging to turn into both commercial audiobooks and DAISY audiobooks (David Stinson, CNIB). At Beyond Print, CNIB creates audiobooks “…that often would not get the audiobook treatment…that can't afford usually to be done that way” (David Stinson, CNIB). This includes materials such as cookbooks, magazines, children’s books, poetry and history books that include maps (David Stinson, CNIB). “…they're extremely rewarding, but they are very challenging and very, very, very, very tricky. You know, making them accessible, but even just rendering them as…audiobooks is…very challenging” (David Stinson, CNIB). An example of a genre difficult to turn into an audiobook is visual poetry:

“books…[with] poems written in a circle or, you know…half the script is struck out and you're only supposed to read the non struck out words…like how do you describe that literally? [I]t can sometimes take my team an entire day to figure out what is the best way to convey that. What was the author’s intent?” (David Stinson, CNIB).

The consultation sessions have identified that certain players in the audiobook industry, such as small independent publishers, face time and staffing constraints and financial impediments to implementing accessibility practices. If guidelines or standards are to be feasible, they should set out clear guidance for easy changes that small publishers and producers can make to their practices that do not require too much time or money. As a result, it may be that certain types of particularly complex audiobook materials are best left to organizations like CNIB and NNELS with specialized knowledge and expertise to create accessible versions. This may help to inform the focus and scope of project testing and the ultimate recommendations from the project.

## Recommendations for Standards or Best Practices

### Flexibility or Rigidity in Best Practices/Standards

When making any recommendations regarding best practices or guidelines, an important consideration is how flexible or rigid the standards should be.

A clear theme arising out of the consultation sessions is that maintaining flexibility where possible would be beneficial for publishers and producers who create audiobooks. A lot of decisions with respect to audiobook features are made on a case-by-case basis depending on what works best for the audiobook (Michele Cobb, APA; CNIB; Vues & Voix). This can include decisions about the flow of the audiobook and what “makes sense to the reader” for any particular audiobook (David Stinson, CNIB).

For example, with respect to footnotes and in-text citations:

“…[Y]ou have to evaluate the text and the importance of that citation or…what it means to disrupt the text to make that citation within…the flow of the audio. Those are case-by-case and I think it's hard to standardize because every text is different” (Michele Cobb, APA).

Daniella Levy-Pinto (NNELS) would like a standard so that “…things are not left for people to decide… the less ambiguity for especially those who are not working in the accessibility related space…the better. It has to be easy for them. If the standards are complicated, people won’t do them.” At the same time Daniella Levy-Pinto advocates for flexibility within that approach. For example, she would prefer a standard for image descriptions that tells you which images you need to do descriptions for but not necessarily how to do the image descriptions. Another theme that arose from the consultation sessions is that when it comes to accessibility standards for commercial audiobooks, it may be difficult to impose a one-size-fits-all approach. There may be diversity in terms of what users with and without print disabilities prefer or need.

“…[T]here's not really a one-size-fits-all solution for a lot of these things, like some people might prefer to have the image descriptions…really short and sort of integrated into the book in a way they can skip past them quickly. But other people might want the more detailed ones or things like footnotes…you could have…[a] very dense 500 footnote non-fiction book and…to some people that might actually be a bit detrimental to their reading experience, to have those notes sort of…scattered about the text…” (Corey Wintemute, NNELS).

It is a challenge to satisfy everyone “…precisely because of that diversity of needs…” (Daniella Levy-Pinto, NNELS). For example, preferences regarding which images may need to be described can be very personal (Daniella Levy-Pinto, NNELS). Daniella Levy-Pinto wonders to what extent it is our role to editorialize and make decisions that certain images do not need description.

CELA also discussed how it can be “…hard to straddle the needs of…[the] more tech savvy users and…those who are…not so tech savvy” (Lindsay Tyler).

“…[T]here is a big variety in the type of users that we at CELA are getting…some will use the latest technologies and take advantage of all the bookmarking and speed control, availability and some people are just interested in reading a book” (Ioana Gandrabur).

For those who “…really just want to be able to press play and listen…for all that DAISY does that's excellent…there is a level of complexity…that it permits and that can be a challenge for some people.” (Lindsay Tyler).

CELA’s magazines in DAISY audiobook format, for example, have “a lot of navigation in them and there's a lot of users who really don't understand [how to use them]” (Lindsay Tyler, CELA). Magazines are inherently “complex publications and you want to reflect that kind of structure” (Lindsay Tyler). Ioana Gandrabur maintains that “…it's better to have the features and [even if] some people…might not be able to take advantage of them, but…[to] not… have them…that would just reduce everybody to that level of experience.” With respect to magazines for example, “if somebody…cannot deal with those complex navigation issues…they will just be limited in the way they experience the magazine, but…can't imagine them…actually [being] counter productive” (Ioana Gandrabur, CELA).

Imposing requirements that are too strict may stifle creativity or not be appropriate based on the type of the book. According to Véronique Fontaine (ANEL & éditions Fonfon), publishers should apply the standards that they think will work best after consulting with others and what works best may vary based on the book genre. As previously described, in her work with éditions Fonfon, Véronique Fontaine applies her own standards for accessible audiobooks wherein she creates adaptations of the print book to give the user the same richness of experience with music, sound effects, etc.

Similarly, Julie Rainville (ANEL) maintains that an audiobook is an art form in itself. For certain types of books such as children’s books, sound effects, tone of voice, rhythm and music can provide a complete experience (Julie Rainville, ANEL).

At the same time, having stricter and more consistent standards in some aspects could be beneficial to organizations like CELA. When CELA imports commercial books, sometimes accessibility features can be lost such as “heading information that would allow you to know that the name of each chapter and…to fine tune navigation” (Ioana Gandrabur, CELA).

“…the more consistent and standardized the commercial audio is…and we know what to expect from that commercial audiobook, the easier it is to make that transition into a DAISY audiobook if we need [to convert it]…[T]he transfer of those accessibility features and…any sort of metadata or structure [would be] smoother…if…we kn[e]w that…every publisher [would be] basically sending us the book in the same way, then we could have a standardized way of transforming it into DAISY” (Megan Toye, CELA).

CELA wants “accessibility level and standards to remain as high as possible” when CELA uses commercial producers to obtain audiobooks for its collection (Ioana Gandrabur, CELA). More consistent standards could also make it “easier” for reading “player manufacturers” and “app developers” to implement accessibility features in the future (Ioana Gandrabur, CELA).

### The Use of Artificial Intelligence and Synthetic Voices

The use of artificial intelligence (AI) to narrate audiobooks is a “hot topic” Wendy Reid (Rakuten Kobo) and publishers have been concerned about the “blurring of the line” between text to speech (TTS), audio and AI narration which has started to occur (Wendy Reid, Rakuten Kobo).

CNIB and NNELS are using AI and synthetic voices in the creation of audiobooks. NNELS uses 11 Labs to do footnotes and image descriptions occasionally. “…[I]t's sort of like a quick, easy way…to have a distinct voice that stands out from the narrator's voice, just to sort of make it a little more obvious when…those elements are popping up in the book” (Corey Wintemute).

NNELS has also made some audiobooks that are entirely narrated using AI but when they do this, they provide a warning to their patrons the books do not use human narration. It is unclear yet how much interest there is from patrons. A couple of years ago there was some negative feedback about the voice sounding robotic for one audiobook, but the technology has advanced since that point in time (Corey Wintemute, NNELS). The process of using AI does still involve human supervision. The AI cannot be left alone, or it will “go off the rails” and you still need to do edits and quality checks (Corey Wintemute, NNELS).

“While AI can be a time saver, it may also take quite a bit of work to ensure quality. As NNELS has continued to work with AI to create audiobooks, we keep learning about the limitations of some of the tools…[For example] bibliographies can have lots of punctuation symbols that trip the speech and generate random odd sounds…names that can be difficult to pronounce can also be tricky for some AI tools to handle…[and] the amount of time required to revise pronunciation for a long bibliography can be significant” (Daniella Levy-Pinto, NNELS).

OverDrive indicated that “[w]here synthetic/AI narration is used, [it] request[s] that this information is included in the metadata.”

Véronique Fontaine (ANEL & Éditions Fonfon) thinks synthetic voice is acceptable for use in an EPUB 3 but does not think AI/synthetic voices have reached a point where they should be used in an audiobook. Hiring a voice actor is part of the artistic quality of the audiobook (Véronique Fontaine, ANEL & Éditions Fonfon).

CNIB uses AI in appropriate circumstances in the creation of DAISY audiobooks, but it does not currently use AI when making commercial audiobooks. When BPAA worked on scholarly titles with CNIB, synthetic voice was used for the list of references and citation list. These were placed at the end of the audiobook (Megan Bishop, BPAA).

There are examples of other publishers using AI to narrate commercial ebooks and audiobooks. Harper Collins uses AI internationally for audiobooks in other languages (Christen Thomas, CNIB) and Rakuten Kobo has starting using AI for ebooks. You can choose from 20 voices (David Stinson, CNIB). Apple is also providing AI versions of audiobooks (Emma Coté, eBOUND).

However, retail partners such as Audible have rules against use of AI and synthetic voices “…because they don't want a bunch of AI narrated books on their platform decreasing the content of their overall library quality” (Jessica Albert, ECW Press). Wendy Reid (Rakuten Kobo) also described this as a concern with “cannibalization of the audiobooks industry”. There is a desire to ensure that the craft of human audiobook narrators is preserved (Wendy Reid (Rakuten Kobo).

“…if every book is available in the audio format through a non-human voiced audio, what impact does that have on the people who are doing the narration jobs?... What impact does that have on the consumers… …what they're willing to pay? We feel very strongly that it is the human performance that makes a great listen and wanting to make sure that that is honored and maintained, I think is a concern for the many people in the industry” (Michele Cobb, APA).

There are also ethical concerns with using synthetic voices such as regarding whose voice will be used (Jean-Sébastien Laliberté, Vues & Voix; Daniella Levy-Pinto, NNELS).

At the same time, “…AI narration is a potentially powerful tool” to make audiobooks “that would never be made into an audiobook [otherwise]” Wendy Reid (Rakuten Kobo).

CNIB and ECW Press advocate for the use of synthetic voices/AI in end matter in commercial audiobooks.

“…[W]hen it comes to recording back matter like bibliographies…that's the home for that kind of technology because having a human sit and read that for hours and hours is…difficult on the narrator… They're actors. They're not trained to read works cited for six hours a session, and it's difficult for...the publisher…from a financial point of view” (Jessica Albert, ECW Press).

Wendy Reid (Rakuten Kobo) also supports the use of AI for materials such as the index and bibliography and other parts of the audiobook that are difficult for the human narrator to read aloud.

### Specific Recommendations for Solutions, Standards or Best Practices

Any recommended standard should be clear and be easy for small independent publishers to understand (Matt Bowes, NeWest Press; Michele Cobb, APA; Jessica Albert, ECW Press). It should also not be too costly or time consuming or require them to “re-invent the wheel” (Michele Cobb, APA). Some publishers are only doing a small amount of audio but the landscape is very difficult as it is (Matt Bowes, NeWest). Most Canadian publishers do not have in-house audio experts (Jessica Albert, ECW Press). ECW Press has three audio experts, but

“…almost no other Canadian publisher, independent Canadian publisher, has that level of technical knowledge in-house….for those people, it becomes nearly impossible for them to keep up with standards that aren't even being communicated necessarily clearly in one place” (Jessica Albert, ECW Press).

Emma Coté from eBOUND works “with over 80 publishers” and she is of the view that “a lot of them” would not know what an accessible audiobook is or what features it includes.” Simply understanding the “state of the nation” will be helpful as well as getting more details about who does what (Emma Coté, eBOUND).

Wendy Reid likewise thinks that defining the roles of publishers and others across the supply chain would be beneficial because there are a lot of options for potential solutions. “And as long as that remains undefined, I think people will not do much about it” (Wendy Reid, Rakuten Kobo).

Emma Coté would like “a set of best practices for accessible audiobooks.” It would also be helpful to have a standard for how an audiobook should start and whether an audiobook “should just follow the exact format of the print book” to ensure consistency (Emma Coté, eBOUND).

Corey Wintemute from NNELS would also like “…a general agreed upon standard…[focusing] less on the audio quality and stuff like that [set out in the ACX] and more on the elements and features of the book”. If you could get the guidance into the ACX audio submission requirements, “that would be huge”.

Christen Thomas from CNIB would also like a consistent standard for commercial audiobooks. She also points out that some publishers do not use the DCH checklist or are unaware that it exists. Some progress could be made by making publishers aware of the DCH checklist and having them use the checklist.

David Stinson from CNIB would like commercial audiobooks to be fully navigable rather and be a “flat file” and would like the DAISY format to be “more readily available”, and even used as a commercial format.For Wendy Reid (Rakuten Kobo), “chapter level navigation” would be a “massive improvement if we c[ould] get that...across the industry.” When there is deeper navigation in books like subsections, it should be a nested table of contents. The audiobook specification is one way to achieve this (Wendy Reid, Rakuten Kobo).

Jessica Albert at ECW Press emphasizes that if we used the audiobook specification:

“…a lot of these issues would not exist. So from both a technical and content perspective, that's the best solution that I have seen for all of these issues and these issues are constant and throughout…the supply chain and throughout the production process… but you know…we can't force any retailers hands on that...”

Jessica Albert would also like “clarity of best practices and standards when it comes to audiobooks” for accessible audiobooks.

Any new standards or guidelines need to be compatible with the great variety of technologies used by readers.

“…[w]e have people using all sorts of technologies to…read books including…in some cases…specialized DAISY players that might be quite old and…the books that we provide need to work on those...essentially [on] 10 year old devices…and also newer devices like apps…that are coming out…If you threw out the DAISY standard [for example,] CELA would need to know that older players would still be able to support the material (Lindsay Tyler, CELA).

There is a desire to see audiobooks evolve to the level of EPUBs (Wendy Reid, Rakuten Kobo; Emma Coté, eBOUND).

Other solutions include using automation or building accessibility standards into workflow. One option would be to have something for audiobooks equivalent to Benetech training for ebooks. “…[W]e [could] certify the publishers’ workflow” so the requirements for how to treat an audiobook are clear, including for metadata (Emma Coté, eBOUND). Along the same lines, it would be beneficial to improve awareness among publishers about how to properly package an audiobook (Emma Coté, eBOUND).

Regardless of what solutions end up being implemented, everyone in the supply chain needs to do more and work together (Wendy Reid, Rakuten Kobo).

## Landscape Review Conclusion and Research Approach

This landscape review has examined the historical evolution of audiobooks, the role of accessibility standards, and the challenges faced by diverse readers, particularly those with print disabilities. Originally designed as an alternative format for readers with visual impairments, audiobooks have since become mainstream, raising important questions about usability, accessibility, and industry feasibility.

Despite advancements in publishing standards and digital accessibility, significant gaps remain in how audiobooks serve diverse users. While standards such as DAISY, W3C Audiobook Specification, and EPUB3 offer accessibility solutions, their industry adoption remains inconsistent. Additionally, many commercial audiobook platforms lack customization features that could benefit users with blindness, low vision, dyslexia, neurodivergence, and other print disabilities. Barriers such as limited navigational control, absence of text-audio synchronization, and restricted licensing models for accessible audiobooks limit their full potential as an inclusive reading format.

Furthermore, accessibility needs vary among users—some require detailed navigation and metadata, while others benefit from simplified interfaces and intuitive playback controls. These sometimes contradictory requirements pose a challenge in designing a universal accessibility standard that serves all readers while remaining feasible for commercial publishers. One of the key questions that remains is whether the needs of readers with print disabilities differ so significantly from those of the general audience that it justifies maintaining separate formats, such as commercial audiobooks and DAISY versions. Our research will explore whether a unified approach to audiobook accessibility is feasible or if format production should continue to be organized separately for users with and without print disabilities.

These findings lead to our central research question:
How can commercial audiobooks be improved to better meet the needs of diverse readers, including those with print disabilities, while balancing industry feasibility and reader satisfaction?

To address this question, our research will:

* Investigate user needs across different print disability groups through a survey incorporating audiobook feature testing and a focus group to understand user preferences and challenges.
* Explore the effectiveness of current accessibility standards (DAISY, EPUB3, W3C) in meeting these needs by consulting with the advisory committee, Wendy Reid, and Joanie Tremblay.
* Investigate industry barriers to accessibility adoption, including cost, licensing, and market demand, through insights from the advisory committee and industry stakeholders.
* Explore solutions that balance accessibility with technological feasibility and commercial viability to ensure that inclusive audiobook formats are both practical and sustainable.
* Evaluate whether the accessibility needs of individuals with print disabilities are significantly different from those of the general public, assessing if maintaining separate production formats (e.g., commercial audiobooks vs. DAISY) remains necessary or if a more integrated approach is possible.
* How to bridge the gap between technology, accessibility, and industry adoption, providing practical recommendations to enhance the usability and inclusivity of commercial audiobooks.

# IV. Reader-centered Research Methodology

## Overview of the Research Approach

A mixed-methods approach was used, incorporating both quantitative and qualitative elements. Data collection methods included surveys, focus groups, and user testing to gather a broad range of perspectives on audiobook accessibility. All data collection was conducted online, ensuring national participation while maintaining accessibility. Participants engaged in the following activities:

* A participant recruitment survey to enroll in the research
* Structured primary survey for the study, which included:
	+ **General Question about Audiobook Usage and Preferences**
	+ **User Testing Feedback**
	+ **Post-Study Reflections**
* Two optional focus groups (one in English, one in French) to explore participant experiences in greater depth.

## Recruitment Strategy

We aimed to recruit 50 participants, ensuring balanced representation of people with and without print disabilities, so the feedback of each group feedback could directly inform the research process and recommendations. The study also sought proportional representation of Francophone participants based on their share of the Canadian population, as well as diversity in disability type, age, gender, and other factors.

The decision to recruit 50 participants was intentional, balancing diversity, depth of engagement, feasibility, and methodological rigor while remaining feasible within the study’s constraints. This sample size allowed for a mixed-method approach, integrating qualitative and quantitative research to provide a comprehensive understanding of audiobook accessibility. The qualitative component captured rich, user-centered narratives, while the quantitative data revealed measurable trends and patterns, enhancing the overall analysis. By striking this balance, the study adhered to best practices in mixed-method research, ensuring both meaningful insights and still allowing for some level of statistical examination.

To recruit a diverse group of participants, CELA used multiple outreach methods, including newsletters, social media, and a post on the organization’s website in both English and French. Additionally, members of the advisory committee were asked to share the invitation with their networks, and CELA staff reached out to organizations serving or representing people with disabilities—particularly Francophone organizations and those supporting underrepresented disability groups, such as individuals with learning or physical disabilities.

The recruitment communications outlined the purpose of the project, described the activities participants would be asked to complete, and stated that those who completed all activities and the survey would receive a $100 honorarium.

Interested participants volunteered by completing an online questionnaire, which included:

* Informed consent to collect their responses.
* Questions about audiobook use, technology familiarity, disability-related lived experience, and language preference.
* Optional demographic questions aligned with the intersectional identity criteria set by the project funder, including identification as an Indigenous person, visible minority, newcomer to Canada, 2SLGBTQI+, or a woman.

These responses were used to select a diverse group of participants while ensuring broad representation in the study.

## Sample Demographics

The selected sample aimed to capture a range of lived experiences relevant to audiobook accessibility. Data was gathered from two surveys: an initial **participant recruitment survey**, which informed participant selection, and the **primary survey for the study**, where participants engaged in audiobook testing.

### **Participant Selection and Retention**

A total of **52 participants** completed the primary survey. These individuals were selected from the **176 respondents** (128 Anglophones, 48 Francophones) who initially expressed interest in participating via the participant recruitment survey. From this pool, **55 participants** were carefully chosen to create a representative sample. However, due to withdrawals during the study, the final participant count was **52**.

One participant mistakenly entered an incorrect ID, preventing cross-identification with their initial survey responses. As a result, for demographic analysis, only **51 participants** were included to maintain data consistency and accuracy.

### Demographic Breakdown

**Language Preference :** The majority of respondents (75%) preferred English, while 25% preferred French, corresponding to 39 Anglophones and 13 Francophones.

**Disability Identification** : Among the 52 participants, 31 individuals (60%) identified as having a print disability. Within this group, 17 participants reported a visual disability, such as blindness or low vision. Six individuals had a learning disability, including dyslexia or ADHD. Five participants identified as having a physical disability, such as fibromyalgia, arthritis, or MPS Type 1.

**Technology Comfort Levels** : Most respondents (90.4%) reported feeling comfortable or very comfortable using technology. A small portion (5.8%) took a neutral stance, while 3.8% expressed discomfort, with two participants selecting either "Not comfortable" (1.9%) or "Somewhat uncomfortable" (1.9%). Methodological limitations from the high technological skill level will be discussion in the section about methodology limitations.

**Age Distribution :** The largest group of respondents, representing 31.37% of the sample, fell within the 29-39 age range, followed by 27.45% in the 40-49 age bracket. Respondents aged 50-59 comprised 17.65% of the dataset, while those 70 or older accounted for 9.8%. Individuals aged 60-69 made up 5.88% of respondents, and the smallest group, 18-28-year-olds, represented 7.84%. The data suggests that middle-aged adults, particularly those in the 29-49 age range, form the majority of respondents, while both younger adults (18-28) and older adults (60+) are underrepresented in this dataset. The lower representation of younger adults (18-28) can be explained by the selection process, where priority was given to ensuring representation of individuals with lower comfort levels in technology. These individuals were highly underrepresented and more difficult to recruit using online recruitment strategies.

#### ****Geographical Distribution**:** Participants came from a range of provinces, though Ontario had the highest representation:

* **Ontario** – **32.69%**
* **Québec** – **21.15%**
* **Saskatchewan** – **13.46%**
* **British Columbia & Alberta** – **7.69%** each
* **Newfoundland & Labrador** – **5.77%**
* **Nova Scotia** – **3.85%**
* **Manitoba, New Brunswick, & one participant from a treaty/ancestral land** – **1.92%** each

**Newcomer Status** : Among the 51 respondents, 7.84% identified as newcomers to Canada, indicating some representation of recent immigrants, though the majority were long-term resident

**Gender Identity** : The sample was heavily skewed towards women, with 78% identifying as female, 16% as non-female, 4% selecting "Other", and 1 participant opting not to disclose their gender.

**2SLGBTQI+ Representation** : Approximately 29% of respondents identified as part of the 2SLGBTQI+ community. 47% did not identify as 2SLGBTQI+, while 24% either did not answer or selected "Non", indicating possible non-disclosure. This suggests a strong representation of 2SLGBTQI+ participants, though a notable portion of respondents did not provide a clear response.

**Visible Minority Representation:** While 17.65% of participants identified as visible minorities, this falls below the 26.5% national average (Statistics Canada, 2023). This underrepresentation suggests that future studies may need targeted recruitment strategies to better reflect Canada’s diversity in audiobook accessibility research.

**Indigenous Identity:** Only 1 participant (1.96%) identified as Indigenous Métis, significantly lower than the national Indigenous population (~5%, according to the 2021 Canadian Census). This suggests underrepresentation of Indigenous perspectives within the study sample.

**Overall** : Given the complexity of balancing multiple criteria—including language, disability representation, geographic diversity, and demographic variation—achieving complete proportional representation within a sample of 50 participants was challenging. Despite some underrepresentation in specific groups, this dataset successfully captures a broad range of user experiences.

However, underrepresentation of **visible minorities, Indigenous respondents, younger adults** and people with lower technological skills and comfort suggests that **future research should explore alternative recruitment strategies**. Ensuring **better demographic balance** will provide a more **comprehensive understanding of audiobook accessibility needs**.

## Integrating Qualitative and Quantitative Approaches

The study combined structured questionnaires, usability testing, and focus groups to leverage the strengths of both qualitative and quantitative methodologies. **Quantitative data**, collected through structured survey responses, allowed us to analyze usage patterns, technology preferences, and demographic trends. This provided statistical context to the findings and ensured that emerging themes were not based solely on anecdotal evidence.

At the same time, **qualitative methods**—such as open-ended survey questions and focus group discussions—provided deeper insights into the lived experiences of participants. Creswell and Poth (2016) argue that qualitative research is most effective when it fosters deep engagement, allowing participants to articulate personal experiences that quantitative metrics alone cannot fully capture. The focus groups further enriched the study by enabling interactive discussions, where participants reflected on shared challenges and solutions.

The study prioritized qualitative insights over broad statistical generalizability, focusing on detailed user experiences rather than large-scale trends. This aligns with qualitative research principles, as outlined by Creswell and Poth (2016), which emphasize depth over breadth by prioritizing user narratives and contextual understanding.

## Balancing Sample Size, Feasibility, and Rigor

With a small research team and time constraints, selecting a **manageable yet representative sample** was essential. A **sample of 50 participants** ensured that both qualitative and quantitative data could be thoroughly analyzed without overwhelming available resources. **Quantitative data analysis** required a sufficient sample size to identify trends and patterns, while **qualitative thematic analysis** involved rigorous coding, iterative refinement, and interpretation of narratives (Creswell & Poth, 2016).

A controlled sample size ensured meaningful engagement, particularly for participants with potential limitations such as **disabilities, lower technological proficiency, or language barriers**. Providing appropriate accommodations and ensuring accessibility required a reasonable participant load. Time and financial constraints also played a role; with a fixed honorarium of $100 per participant, significantly increasing the sample size would have stretched available funding, potentially compromising the depth of engagement or ethical research standards.

Additionally, our **mixed-method approach** enhanced the validity of findings through **triangulation**. By using multiple data sources—including **quantitative surveys, usability testing, and qualitative focus groups**—we were able to cross-verify findings and provide a more **comprehensive and credible** assessment of audiobook accessibility.

Triangulation involves employing multiple data sources, methods, or perspectives to examine the same phenomenon, reducing bias and increasing the robustness of results. To further validate our findings, we **reexamined data from previous consultations with people with disabilities during the landscape review**. The trends observed in our study were largely consistent with those found in earlier consultations, reinforcing the reliability of our results. This external comparison strengthened the credibility of our analysis, confirming that the accessibility challenges identified were not isolated to our participant sample.

Additionally, during **focus group discussions**, we deliberately explored key **trends that emerged from the quantitative survey data**. This allowed us to verify whether our interpretation of the numerical findings aligned with participants’ lived experiences. The qualitative discussions provided valuable context, helping refine our understanding of the issues at hand.

Beyond our direct research, we conducted a landscape analysis and reviewed existing literature, including reports from advocacy organizations such as NNELS and other accessibility-focused groups. This combined approach allowed us to situate our findings within a broader context, ensuring that our study not only captured individual experiences but also aligned with systemic accessibility issues identified in prior research and advocacy efforts. By cross-referencing participant data with external reports and scholarly sources, we strengthened the validity of our analysis and highlighted recurring patterns and gaps in audiobook accessibility.

## Tools and Platforms for Data Collection

Because this project aimed to engage readers across Canada within a limited timeframe and without a travel budget, we prioritized online tools that could effectively support data gathering and testing.

To facilitate data collection, we used two online survey platforms throughout the project. Initially, we employed Survey Monkey, a tool already available to CELA, for participant recruitment. However, as we refined the user testing phase, we sought a more suitable platform—one that could better accommodate a bilingual survey and allow participants to save their progress and return later. Simple Survey met these requirements, and we used it to create and host the user testing survey.

Beyond data collection, participants needed a secure and accessible way to listen to the audiobook samples provided for testing. Since these samples contained copyrighted material made available through agreements with publishers, access had to be restricted to study participants. To meet this need, CELA partnered with Book Connect, a Canadian publishing software company with expertise in accessibility-focused projects, to develop a dedicated website. This platform allowed participants to log in and either stream the audiobooks directly or download the files for use with their preferred reading system. Offering flexibility in playback options was essential to ensuring accessibility, particularly for participants using assistive technology.

To ensure the platform’s accessibility, NNELS staff—who have lived experience with print disabilities—conducted iterative testing. They evaluated its compatibility with various assistive technologies, including screen readers and screen magnification tools, across multiple operating systems (PC, Mac, and mobile devices). Based on their feedback, Book Connect refined the audiobook playback function, addressing all significant accessibility concerns to deliver an inclusive user experience.

NNELS staff also assessed the Simple Survey platform for accessibility. While overall usability was strong, minor issues were identified, such as limitations that made skipping between questions less fluid. These insights informed adjustments to improve the survey experience for all participants.

## Survey Structure and Design

The survey was designed to integrate both quantitative metrics and qualitative insights through a bilingual format (English and French). It included a combination of closed-ended questions, which provided structured data on audiobook habits, preferences, and accessibility barriers, and open-ended questions, which allowed participants to share detailed feedback on audiobook usability and navigability.

The survey process consisted of two stages. The first stage involved an initial demographic and accessibility background survey, which collected data on participants’ technology use, disability status, and frequency of audiobook engagement. This preliminary survey was used to select the final participant group.

The survey process was conducted in three stages:

**Initial participant recruitment survey** – Participants completed a preliminary questionnaire collecting demographic information, technology usage, disability status, and frequency of audiobook engagement. This stage helped ensure a diverse and relevant participant pool for the study.

**Primary survey for the study** – Selected participants completed an in-depth survey consisting of three key sections:

1. **Audiobook Usage and Preferences** – Explored participants’ format preferences, opinions on front matter placement, and common accessibility challenges.
2. **User Testing Feedback** – Participants evaluated audiobook samples with various accessibility features (e.g., narrated tables of contents, customizable playback, and skippable sections).
3. **Post-Study Reflections** – Participants shared final feedback on their experience in the study and offered additional recommendations for improving audiobook accessibility.

**Follow-Up and Honorarium Processing** – After survey completion, participants were invited to provide feedback on the process and confirm their participation for honorarium disbursement through a separate, privacy-secured form.

To ensure accessibility for all participants, particularly those with print disabilities, the survey was designed to be screen reader-compatible and optimized for usability across different assistive technologies.

## Survey Completion Rate Analysis

Of the 55 participants initially recruited, 52 provided responses that met the study’s criteria for acceptable completion, defined as answering at least the first section of general questions. Among these, 45 participants (86.54%) completed the entire questionnaire, while 7 participants (13.46%) submitted partial.

The survey was demanding, requiring participants to engage with audiobook testing, read detailed instructions, and retain information for accurate responses. However, mitigation strategies, including pause-and-resume functionality, direct support via phone and email, and reminder emails from the CELA team, contributed to the high completion rate. Despite inevitable drop-off, these measures ensured that most participants successfully completed the survey.

Given the study’s objectives, responses that reached at least p**age 11**were retained for analysis, even if the survey was not fully completed. This decision was based on the fact that pages 1–11 contained critical demographic and usage data, including audiobook preferences, accessibility barriers, disability status, and technology comfort levels. Even incomplete responses provided valuable insights into participant backgrounds and usage trends. The primary abandonment points (Pages 21–25) largely contained feature-specific questions, meaning earlier responses still contributed meaningfully to the study’s key objectives.

Despite some incomplete responses, key trends regarding audiobook preferences and accessibility barriers remained statistically valid. The most essential insights—capturing disability representation, format preferences, and accessibility obstacles—were collected before major abandonment points. This approach aligns with best practices in accessibility research, where qualitative richness takes precedence over rigid completion metrics.

In the final analysis, distinctions were made between complete and incomplete responses to maintain data accuracy. All responses were weighted in proportion to the number of respondents, ensuring that drop-off at different stages did not distort the overall findings. This approach allowed us to preserve the integrity of the dataset and draw conclusions based on the most comprehensive and representative data available. More details on data interpretation follow in the next section.

## Ethics, Confidentiality and Consent

This study was conducted with a strong commitment to ethical research practices, ensuring that all participants provided informed consent before engaging in the surveys and focus group discussions. The consent process was designed to promote transparency, uphold participant autonomy, and maintain confidentiality.

### Survey Participants

Survey participants were fully informed about the study’s objectives, data collection methods, and the intended use of their responses at all stages. Prior to participation, they reviewed and agreed to the consent form within the Simple Survey platform. The platform, which securely stores data in a Canadian data center, was chosen to enhance data protection, and a link to its privacy policy was provided for further transparency.

Participants were made aware that their survey responses would contribute to recommendations for commercial audiobook producers and inform both the public research report and reports submitted to Accessibility Standards Canada, the project’s funder. Additionally, that the findings would be shared with the Advisory Committee overseeing the project.

To safeguard participant privacy, personally identifiable information was not included in reports or publications. While the study posed no significant risks to participants, privacy measures were implemented to protect their information. No names were collected at any stage of the research. The only personal information gathered was an email address, which was required during the participant recruitment survey.. In the second phase, participants were assigned a unique three-digit ID, which they used in the Simple Survey platform. This allowed us to cross-reference responses between the two surveys while ensuring that participant data in Simple Survey remained unlinkable to personal identifiers.

Additionally, data access was strictly controlled. The information was shared only among project team members and stored in a secure, password-protected system to prevent unauthorized access. To further ensure data security, all collected data will be archived in an encrypted format, providing an additional layer of protection. These precautions ensured that participant responses remained confidential and that any potential privacy concerns were effectively mitigated.

### Compensation and Honoraria

To acknowledge participants’ time and contributions, a fair and transparent honorarium process was implemented. Participants who completed the required activities and survey received a $100 honorarium. This compensation was clearly communicated during the recruitment phase and outlined in the consent forms. Honoraria were distributed in a timely manner to ensure equitable recognition of participants’ efforts.

To protect participants' privacy and security, the honorarium form was kept separate from the survey data. This form only requested the participant's ID and email address for the transfer, ensuring that financial transactions were not linked to survey responses.

## Focus Groups Design

Following the survey, participants had the option to enroll in a focus group session. Two focus groups were conducted: one in English and one in French, with participants both with and without print disabilities. These sessions provided an opportunity for in-depth discussions, offering additional insights beyond the survey responses.

The discussions covered key themes, including:

* Preferred audiobook features and accessibility challenges.
* Navigation preferences, such as structured front matter, skippable content, and ease of access.
* Barriers to audiobook engagement, including technological limitations, platform constraints, and the availability of accessible content.

Given the interactive nature of focus groups, additional measures were taken to protect participant privacy and confidentiality. Participants reviewed and signed an informed consent form outlining the study’s purpose as part of CELA’s Accessible Commercial Audiobooks Project, which aims to improve industry standards for audiobook accessibility.

Focus group sessions were recorded in audio format and transcribed using the Zoom platform to ensure accuracy. These recordings and transcripts were securely stored and used exclusively by CELA. The insights gathered were incorporated into the public research report, funder reports, and discussions with the Advisory Committee. Anonymized quotes from participants were included in the research report.

Participants were asked to provide pseudonym or a real name, according to their preferences for use during discussions, but these were not included in the final report. Identifying details, such as workplace or location, were omitted or anonymized. Additionally, participants agreed to maintain confidentiality and were reminded not to share information discussed in the group outside of the session.

All focus group data will be securely stored for at least six years after the funding agreement ends. Recognizing potential risks, including breaches of confidentiality, emotional discomfort, and social pressure, the study implemented precautions to foster a respectful and inclusive environment. Participants were reassured that they could take breaks, decline to answer any question, or withdraw at any time. Discussions encouraged open expression of diverse perspectives without pressure to conform to shared opinions.

### Ethical Considerations and Participant Safety

At the outset of each session, clear guidelines were established to foster a respectful and secure environment. Participants were assured of their confidentiality, the anonymity of their responses, and reminded the voluntary nature of their participation, including the right to withdraw at any time without consequence.

Facilitators emphasized creating a space where participants felt valued and heard by encouraging respectful interactions, including the voluntary sharing of pronouns. Disability was framed as an interaction between individuals and their environment rather than a personal limitation, recognizing diverse accessibility experiences. Discussions prioritized first-person narratives to validate individual perspectives and encouraged open curiosity to foster mutual understanding. Facilitators acknowledged varying accessibility needs, promoting constructive dialogue and exploration of different viewpoints with openness rather than judgment.

## Limitations

### Sample Size and Generalizability

While the rationale for selecting our sample was carefully structured to balance depth of engagement, accessibility considerations, and feasibility within the study’s scope, certain limitations must be acknowledged. The relatively small sample size, while sufficient for generating meaningful insights, affects the broader generalizability of the findings. As a result, this study does not claim to be statistically representative of all audiobook users with print disabilities, nor does it capture the full spectrum of user experiences across diverse demographic groups, technological proficiencies, or accessibility needs.

The results should not be overgeneralized but rather understood as an exploratory analysis that identifies patterns and themes within a specific user group. While these findings contribute to the accessibility discourse, they are best interpreted as indicative rather than definitive, providing a springboard for further empirical research and iterative enhancements in audiobook accessibility design.

### Use of Percentages and Respondent Totals

To ensure transparency and prevent misinterpretation, the report presents both percentages and absolute respondent totals. Given the study’s sample size, percentages are useful for illustrating trends and making comparisons across different response categories. However, providing the total number of respondents alongside percentages ensures proper context and accuracy in data representation. This dual approach enhances clarity in data interpretation.

Despite the potential for small sample sizes to exaggerate findings, percentages remain a valuable tool in data analysis for several reasons. First, percentages standardize responses, making it easier to compare trends across different segments of respondents (e.g., those with and without print disabilities) without being influenced by unequal group sizes. Second, they highlight proportions of preferences or behaviors, revealing patterns that might not be immediately evident through raw numbers alone.

While percentages offer valuable insights, they must always be presented with respondent totals to prevent misinterpretation. Some sections of the survey had lower response rates. Stating the number of responses per question ensures that findings are not mistakenly assumed to represent the entire participant pool.

By combining percentages with total respondent counts, the report maintains analytical rigor while preventing data distortion. This approach ensures that trends remain clear, meaningful, and appropriately contextualized, ultimately strengthening the reliability and usability of the findings.

It is important to note that data presented under the “General Reading and Audiobook Questions” and “Ideal Techological Advancements in Audiobooks ”section of the survey are not accompanied by percentages. This is because the structure and consistency of the survey across both anglophone and francophone participants—along with a stable overall sample size—render proportional comparisons unnecessary in that context.

### Selection bias related to digital literacy skills

The study's recruitment process, conducted primarily online and through accessibility-focused networks, introduced a selection bias favoring participants with higher digital literacy. A significant majority (90.4%) of respondents reported feeling comfortable or very comfortable using technology, while only a small fraction (3.8%) expressed discomfort. Another 5.8% remained neutral, possibly indicating occasional challenges or a lack of strong opinions on their digital skills. These results suggest that the study's sample comprises a disproportionately high number of digitally proficient users. For comparison, Statistics Canada (2021) data indicates that 44% of Canadians fall into the "non user", "basic" or "intermediate" digital user categories, meaning the general population has a much broader range of digital literacy levels. This discrepancy suggests that the study overrepresents individuals who are already adept at navigating digital platforms, making the findings less representative of those with lower technological skills.

This selection bias is particularly relevant in the context of audiobook accessibility, as digitally proficient users are likely to experience fewer barriers when discovering, accessing, and using audiobooks. In contrast, individuals with lower technological proficiency—such as older adults or those unfamiliar with assistive technologies—may face significant usability challenges that are not fully captured in this study.

The reliance on online recruitment likely excluded users who are less engaged with digital platforms, meaning the study may not fully reflect the accessibility challenges faced by less tech-savvy individuals. Older adults, individuals with limited access to digital tools, and those who struggle with technology are underrepresented in the data, potentially leading to an incomplete picture of audiobook accessibility. This limitation highlights the need for broader outreach strategies in future research to ensure a more representative sample.

#### Recommendations for future research

To address this gap, future studies should incorporate recruitment methods that reach a wider demographic, such as outreach through community centers, public libraries, disability advocacy organizations, and in-person surveys. A more inclusive approach would allow researchers to capture the experiences of individuals with lower digital proficiency, providing a more accurate reflection of audiobook accessibility challenges across different user groups. Understanding the experiences of these users is crucial for designing inclusive audiobook platforms that accommodate varying levels of technological proficiency. Future research should also explore how challenges such as difficulties with downloading apps, navigating interfaces, or using assistive features impact audiobook accessibility for less tech-savvy individuals.

By acknowledging and addressing this selection bias, future research can provide a more comprehensive understanding of audiobook accessibility, ensuring that solutions are designed to meet the needs of all users, not just those who are already comfortable with digital tools.

### Absence of Economic Data

This study did not collect data on participants' economic status, limiting its ability to assess financial barriers to audiobook access. Economic constraints can significantly impact audiobook accessibility, as lower-income individuals may struggle to afford commercial audiobook subscriptions, specialized reading devices, or assistive technologies. The absence of economic data prevents a full understanding of the affordability challenges faced by users with print disabilities. Future studies should incorporate income-related variables to examine the relationship between socioeconomic status and audiobook accessibility.

### Variability in Reading Habits and Preferences

While the study includes users with different reading habits and format preferences, it may not fully reflect the broader population of audiobook listeners. The sample consists of highly engaged readers, many of whom already rely on accessible reading formats. This focus on active users may overlook individuals who face greater barriers to audiobook adoption, such as those unfamiliar with available platforms or those who experience difficulties navigating digital content.

Half of the respondents (50%) reported reading 1-4 books per month, significantly exceeding the national average reported by BookNet Canada (2022), where 50% of Canadians read only 1-5 books per year. This suggests that the study’s sample consists of highly engaged readers, likely reflecting its focus on accessibility and users who are already active book consumers. While this provides valuable insights into audiobook accessibility for frequent readers, it does not fully account for occasional or potential readers who may experience different accessibility challenges.

## Final Considerations

While this study provides valuable insights into audiobook accessibility, its limitations should be taken into account when interpreting the findings. The results should be viewed as an initial exploration rather than a definitive assessment of audiobook accessibility for all users. Future research should expand its sample size, incorporate economic factors, and employ more diverse recruitment strategies to ensure a more representative and comprehensive understanding of audiobook accessibility across different user groups.

# V. Findings and Analysis

## Introduction to Findings and Analysis

This section presents a comprehensive analysis of user preferences and design considerations for enhancing audiobook experiences across diverse audiences. Through a systematic exploration of key design choices, it examines how specific elements—such as the placement of front and back matter, the narration of tables of contents (ToCs), the inclusion of footnotes, and the integration of supplemental content—affect the usability, accessibility, and overall satisfaction of audiobook listeners.

The research spans multiple genres, linguistic contexts (Anglophone and Francophone), and user demographics, including participants with and without print disabilities. For this section of the study, participants were exposed to various audiobook versions, each designed to test specific design variables, allowing them to share their preferences and real-time experiences.

Given the **bilingual nature of the study**, different audiobook samples were used for Anglophone and Francophone respondents. Although we made every effort to ensure comparability between the two groups, the differences in the content and structure of the samples may have influenced responses in subtle ways. We chose to **aggregate data from both language groups** to provide a comprehensive analysis. In instances where significant differences between the Anglophone and Francophone responses were identified, these distinctions are explicitly highlighted to ensure precise interpretation and contextually relevant recommendations. However, there are cases where the design of questions or content between the two groups diverged to the point where the data was not comparable. In such cases, the results are presented separately for anglophone and francophone groups to maintain accuracy and integrity. To address potential sample-specific influences, each subsection begins with a clear description of the tested sample, explaining any relevant differences that could affect user preferences. This contextual approach ensures that findings are accurately interpreted and that recommendations reflect the diverse needs of audiobook listeners.

We applied a combined methodology involving both qualitative and quantitative approaches. Quantitative data allowed us to capture proportions of participant preferences, while qualitative responses provided in-depth context and explanations for why certain options were favored. Participants often shared details about how specific audiobook features influenced their listening experience, giving us a richer understanding of their preferences.

## A) Front and Back Matter Placement

### Introduction

The placement of front and back matter in audiobooks, such as author introductions, publication details, tables of contents, and dedications, can significantly shape the listening experience. Traditionally, front matter is placed at the beginning of print books, while back matter—such as appendices or contributor information—appears at the end.

In current audiobook production, the placement of front and back matter is frequently altered from the traditional print order. Publishers in this study raised the question of whether audiobooks should adhere to the print order or adopt new conventions. This section examines how listeners respond to different placements of front and back matter, highlighting preferences and usability considerations.

Both the Anglophone and Francophone participant groups listened to two audiobook samples, each presenting different approaches to the placement of front matter. Version 1 followed the traditional print book order, with front matter placed at the beginning, while Version 2 presented the front matter at the end, allowing listeners to jump directly into the main content. Participants were asked to explain their choice in detail after testing both audio samples.

#### Key questions explored:

* Do readers prefer the samples with front matter in print order or at the end of the book?
* Should front matter be at the end, or stay in print order?
* How important is it to readers that an audiobook matches the print book’s order for front matter?
* How important is it to the reader that front matter, such as an epigraph or an "About the Author" section, is included in the audiobook?
* Does a preference for print order depend on the type of book?

### Methodology Considerations

When interpreting the findings, it is important to account for extraneous factors and differences in the structure of the front matter between the Anglophone and Francophone audiobook samples, as these may have influenced respondent preferences.

The Francophone sample featured shorter and more concise front matter, which made Version 1 (front matter in print order) less disruptive and, therefore, more appealing to Francophone respondents. In contrast, the Anglophone sample included longer and potentially less relevant front matter sections, leading more participants to favor Version 2, where they could begin the main content without delay. This discrepancy underscores the influence of content length and relevance to listener preferences, as longer front matter sections were perceived as obstacles to immediate engagement with the audiobook.

Despite these differences, Anglophone and Francophone responses displayed similar trends when comparing preferences across the two versions. The overall consistency in preferences—despite variations in content length and structure—suggests that the findings reflect general user inclinations rather than being entirely driven by sample-specific characteristics. However, when analyzing specific subgroups or drawing nuanced conclusions, these content-based differences should be considered.

### Preference for Sample with Front Matter in Print Order or at the End of the Book

Table 1 Participant Preferences for Front Matter Placement in Audiobooks

|  |  |  |  |
| --- | --- | --- | --- |
| **Version** | **Anglophone (% / Respondents)** | **Francophone (% / Respondents)** | **Total (% / Respondents)** |
| Prefer Version 1 (Front Matter in Print Order) | 35.1% (13/37) | 36.4% (4/11) | 35.4% (17/48) |
| Prefer Version 2 (Front Matter at the End) | 45.9% (17/37) | 36.4% (4/11) | 43.8% (21/48) |
| No Preference | 18.9% (7/37) | 27.3% (3/11) | 20.8% (10/48) |

#### Quantitative Insights

**Balanced Support for Version 1 (Traditional Print Order)**

* 35.4% (16/48) of participants preferred Version 1, indicating that a substantial portion of listeners still value the traditional print structure in audiobook formatting.

**Slight Overall Preference for Version 2 (Front Matter at the End)**

* 43.8% (21/48) of respondents favored Version 2, suggesting a slight preference for beginning the audiobook with the main content rather than introductory material.

**Notable Listener Flexibility**

* 20.8% (10/48) of participants expressed no preference, highlighting significant adaptability among listeners. This suggests potential benefits in offering customizable options, such as skippable or repositionable front matter, to accommodate varying user preferences.

#### Qualitative Insights

**Reasons for Preferring Front Matter at the End**

* Desire for immediate access to content: Respondents in both Francophone and Anglophone noted frustration when lengthy introductory sections delayed their access to the book’s core.

“Listening to the contents portion just felt like it dragged on. I was bored and didn’t want to hear it.”(Anglophone Survey Answer)

“I prefer to go straight to the point when I read.” (Francophone Survey Answer, translated)

Navigational flexibility**:** Many participants emphasized the importance of being able to skip non-essential sections, especially when audiobooks have built-in playlists or navigation tools.

**Reasons for Preferring Front Matter in Print Order**

* **Context setting and information:** Several respondents valued front matter in its traditional order, particularly for non-fiction, as it helped frame their understanding of the book.

“Hearing about the editors at the beginning gives a lens through which you can understand the book.”​ (Anglophone Survey Answer)

"I think that, in a book such as this one, this type of information helps to better understand the work.) (Francophone Survey Answer, translated)

* **Consistency with print versions:** Some participants preferred the familiar structure of print books, where front matter comes first, as it helped them follow along seamlessly.

“I prefer being in step with the original formats, like print version layouts.” (Anglophone Survey Answer)

#### Comparative Analysis between Users with and Without Print Disabilities about Front Matter Placement

Table 2 Comparative Analysis between Users with and Without Print Disabilities about Front Matter Placement

|  |  |  |
| --- | --- | --- |
| **Version**  | **With Print Disabilities (% / Respondents)** | **Without Print Disabilities (% / Respondents)** |
| Version 1 (front matter in print order) | 39.3% (11/28) | 30.0% (6/20) |
| Version 2 (front matter at the end of book) | 39.3% (11/28) | 50.0% (10/20) |
| No Preference | 21.4% (6/28) | 20.0% (4/20) |

* **Balance preferences**: People with print disabilities is evenly split between Version 1 and Version 2, both at 39.3% (11/28), showing no strong preference.
* **Preference shift among respondents without print disabilities:** Those without print disabilities show a stronger preference for Version 2, 50% preferred front matter at the end (10/20), suggesting they are more inclined to start the main content directly.
* **Similar spread of preferences:** Both groups—those with and without print disabilities—showed overall **similar proportions for all three options,** with**Version 2 (front matter at the end)** slightly more favored among participants without print disabilities.

The lack of significant differences between suggests that **preferences for front matter placement are not heavily influenced by disability status**. Since both groups exhibited a similar distribution of responses, this finding supports the recommendation for **user-centered, adaptable audiobook formats.** Providing listeners with the ability to choosefront matter placement would cater to diverse preferences and ensure inclusive listening experiences for all users.

#### Discussion of Preference for Sample with Front Matter in Print Order or at End of Book

The quantitative data highlights a balanced response in listener preferences regarding the placement of front matter in audiobooks. 43.8% (21/48) of respondents preferred placing the front matter at the end of the audiobook, while 35.4% (16/48) favored following the traditional print order. The relatively small gap between these two groups highlights a divergence in preferences, rather than a strong majority consensus. Furthermore, 20.8% (10/48) of respondents expressed no preference, suggesting that a significant portion of listeners is flexible when it comes to front matter placement.

Qualitative data provides further depth to this observation, revealing the contextual reasons behind user preferences. Even among those who preferred the front matter at the end (Version 2), many stated that they would not mind front matter at the beginning if it were skippable. On the other hand, users who showed a strong preference for Version 1 emphasized the importance of preserving the traditional print structure, indicating that for them, maintaining the original layout enhances their overall audiobook experience.

This finding has significant implications for audiobook design. While there is a slight preference for placing front matter at the end, the fact that many respondents are flexible as long as efficient navigation is available indicates that the core issue lies not in the placement itself, but in the ability to navigate front matter easily.

Many participants, particularly those who preferred Version 2 (having a preference for front matter at the end), suggested that having skippable sections would resolve their concerns about front matter disrupting the flow of the content. Participants who prefer Version 1 (in print order at the beginning of the book) often also mention wishing for skippable sections:

"It just feels like contents etc. should be at the front of a book. That's where I would look for them. As long as you can navigate past them if not needed, having to listen to them when you don't need it would be frustrating." (Anglophone Survey Answer)

Hence, designing a skippable and navigable front matter structure will cater to most users, regardless of their initial placement preference.

### How important is it to you that an audiobook matches the print book’s order for front matter?

Investigating further preference, we asked participant to rate the level of importance of the audiobook matching **print order for front matter**

Table 3 Importance of Matching Print Order for Front Matter

|  |  |  |  |
| --- | --- | --- | --- |
| **Level of Importance** | **Responses (EN)** | **Responses (FR)**  | **Total** |
| Not important | 54% (20/37) | 36% (4/11) | 50.0% (24/48) |
| Slightly important | 19% (7/37) | 0% (0/11) | 14.6% (7/48) |
| Moderately important | 8% (3/37) | 18% (2/11) | 10.4% (5/48) |
| Important | 5% (2/37) | 9% (1/11) | 6.3% (3/48) |
| Very important | 14% (5/37) | 36% (4/11) | 18.8% (9/48) |

#### Quantitative Insights

**Half of Respondents Consider Matching Print Order Not Important**

* **50% (24/48)** of the participants rated matching the print order of front matter as not important. This suggests that a significant portion of listeners do not require audiobooks to mirror the structure of the print version exactly.

**Slight Importance for Some Respondents**

* **14.6% (7/48)** indicated that matching print order was only slightly important.

**Moderate to High Importance Among a Smaller Group**

* **35.4% (17/48) of respondents** fall into the “moderately important,” “important,” or “very important” categories:
	+ 10.4% moderately important
	+ 6.3% important
	+ 18.8% very important

**Francophone vs. Anglophone Responses**

**Francophone participants were more likely to consider matching print order very important (36.4%),** reflecting stronger ties to print conventions compared to Anglophone participants, who had a broader spread across lower levels of importance.

#### Comparative Analysis between Users with and Without Print Disabilities about Front Matter In Print Order

Table 4 Comparative Analysis between Users with and Without Print Disabilities about Front Matter In Print Order

|  |  |  |
| --- | --- | --- |
| **Level of Importance** | **With Print Disabilities (Proportion / %)** | **Without Print Disabilities (Proportion / %)** |
| Not important | 12/28 (42.9%) | 12/20 (60.0%) |
| Slightly important | 0/28 (0%) | 0/20 (0%) |
| Moderately important | 3/28 (10.7%) | 2/20 (10.0%) |
| Important | 2/28 (7.1%) | 1/20 (5.0%) |
| Very important | 9/28 (32.1%) | 5/20 (25.0%) |

* **No major differences between the two groups** in their preferences for maintaining front matter in print order.
* **People with print disabilities show a slightly stronger preference** for print order (**32.1% (9/28) rate it as “Very Important” compared to 25.0% (5/20) of those without print disabilities**), but this is **not a drastic difference**.
* **"Not Important" remains the most common response across both groups**—suggesting that, for the majority of users, strict adherence to print order is **not a critical factor**.
* **Both groups highlight the need for flexibility**—indicating that **skippable or customizable front matter placement** would be the most user-friendly approach.

### How important is it to the reader that front matter, such as an epigraph or an "About the Author" section, is included in the audiobook?

Table 5 Importance of Including Front Matter in Audiobooks

|  |  |  |  |
| --- | --- | --- | --- |
| **Importance Level** | **Responses (FR)**  | **Response (EN)** | **Total %**  |
| Not important | 36.4% (4/11) | 13.5% (5/37) | 18.8% (9/48) |
| Slightly important | 9.1% (1/11) | 21.6% (8/37) | 18.8% (9/48) |
| Moderately important | 18.2% (2/11) | 21.6% (8/37) | 20.8% (10/48) |
| Important | 9.1% (1/11) | 29.7% (11/37) | 25.0% (12/48) |
| Very important | 27.3% (3/11) | 13.5% (5/37) | 16.7% (8/48) |

#### Quantitative Insights

**Balanced Opinions with Moderate Preference**

The combined data shows that 25.0% (12/48) of respondents found the inclusion of front matter important, while 16.7% (8/48)considered it very important. At the same time, 18.8% (9/48) of participants thought it was not important. This distribution suggests a diverse range of opinions, where some users highly value front matter while others view it as less essential.

**Flexibility in Preferences**

Although a notable percentage of participants rated front matter as important, the 18.8% (9/48) who rated it as not important and another 18.8% (9/48) who considered it slightly important highlight the need for a flexible approach to meet varied user needs.

**Varied Distribution Across Languages**

Francophone respondents leaned more toward higher importance, with 27.3% (3/11) rating it as very important. Francophone participants may place greater value on maintaining traditional print structures and contextual information in audiobooks.

#### Comparative Analysis of People with vs. Without Print Disabilities on the Importance of the inclusion of Front Matter

Table 6 Importance of Front Matter by Disability Status

|  |  |  |
| --- | --- | --- |
| **Level of Importance** | **With Print Disabilities % (Proportion)** | **Without Print Disabilities % (Proportion)** |
| Not important | 17.9% (5/28) | 20.0% (4/20) |
| Slightly important | 17.9% (5/28) | 20.0% (4/20) |
| Moderately important | 14.3% (4/28) | 15.0% (3/20) |
| Important | 28.6% (8/28) | 30.0% (6/20) |
| Very important | 21.4% (6/28) | 15.0% (3/20) |

Both groups exhibit a similar distribution of responses, with no drastic differences in proportions. This suggests that the overall attitudes toward the importance of front matter are comparable between those with and without print disabilities.

### Is the preference for an audiobook to match the print order **contextual to the type of book?**

Participants highlighted that the decision to match front matter in audiobooks to the print order largely depends on the type of book. Non-fiction, educational, and technical books were seen as benefiting from front matter at the beginning to provide essential context and background, while fiction readers generally preferred minimal interruptions to the narrative:

"Epigraphs are more useful at the start of the book. If the author's credentials are relevant (e.g., for scholarly work), then I would prefer to see the front matter earlier on." (Anglophone Survey Answer)

“I think it depends on the content of the book. For example, for a technical book or a work where the author’s story is essential for understanding it , this information should be presented at the beginning.” (Francophone survey Answer, translated)

This perspective aligns with typical publisher decisions for print formats, suggesting that maintaining consistency between print and audio formats would be beneficial.

“I prefer to read the dedication or the author’s notes in order, but I also want to be able to skip sections if I don’t need them.” (Francophone survey Answer, translated)

Participants who frequently switched between print and audiobooks strongly preferred maintaining print order. For this group, consistency between formats was key to enhancing their overall experience:

"I prefer being in-step with original formats, i.e., print version layouts." (Anglophone Survey Answer)

 “I prefer everything to be in the same order as the printed book. That way, we have access to the same book and the same experience as the print readers.” (Francophone survey Answer)

### Discussion of Results

Our findings highlight the importance of balancing print order consistency with navigational flexibility.

When asked "How important is it to you that an audiobook matches the print book’s order for front matter?", responses revealed nuanced user preferences. While 50% (24/48) of respondents stated that print order was "not important," this should not be interpreted as a complete rejection of print structure. Instead, qualitative data suggests that most listeners prioritize usability over strict adherence to print layouts.

Many respondents who did not prioritize print order expressed that their primary concern was quick access to content and the ability to skip non-essential sections. These users did not object to front matter being included, but they wanted control over whether they listened to it.

At the same time, a significant minority valued print order consistency, particularly those who frequently switch between print and audio formats. These users relied on a structured experience that mirrors the print edition, especially for non-fiction, academic, and technical books where front matter often provides critical context.

As one respondent explained:

“I prefer everything to be in the same order as the printed book. That way, we have access to the same book and the same experience as the print readers.” (Francophone Survey answer, translated)

 This feedback underscores that front matter should be retained for those who rely on it, but it should also be skippable and well-navigated to accommodate different listening preferences.

#### Potential Challenges and Considerations

One challenge with this recommendation is that while front and back matter should be skippable and navigable, some users—particularly those less familiar with audiobook navigation tools—may struggle to use these features effectively. Although participants appreciated the option to skip or navigate front matter, many noted that not all listeners know how to efficiently use chapter markers, playlists, or interactive tables of contents. Without clear guidance, some users may feel forced to listen to front matter even when they would prefer to skip it.

To mitigate this, publishers and platforms should ensure that front and back matter sections are well-marked using chapter markers, playlists, or interactive ToCs. These features should allow users to easily bypass non-essential content—such as publisher information or lengthy tables of contents—while keeping important sections, like dedications and author notes, accessible.

Additionally, incorporating short audio instructions or prompts at the start of the audiobook could help users navigate more effectively. For example, a simple message like:

"To skip directly to the main content, press the skip button or select Chapter 1 in the audiobook’s table of contents."

Such instructions would empower listeners by ensuring they fully understand and can control their audiobook experience.

By prioritizing navigational flexibility while preserving key structural elements, publishers can effectively serve both types of audiences—those who want seamless, uninterrupted listening and those who value the consistency of traditional print layouts.

### Summary: Front and Back Matter Placement in Audiobooks

No single placement suits all listeners. Skippable, flexible, and well-navigated front matter best accommodates diverse user needs.

* **Mixed Preferences for Front Matter Placement:** 43.8% preferred front matter at the end, 35.4% favored traditional print order, and 20.8% had no preference, highlighting flexibility.
* **Skippability Matters More Than Placement:** Many listeners, especially fiction readers, preferred immediate access to content and valued the ability to skip non-essential sections.
* **Genre-Based Differences:** Non-fiction listeners favored print-order front matter for context, while fiction listeners preferred minimal interruptions.
* **Minimal Impact of Print Disabilities on Preferences:** Preferences were consistent across users with and without print disabilities, reinforcing the need for flexible navigation.
* **Low Priority for Strict Print Order Matching:** 50% of respondents deemed it unimportant, though some Francophone and print-format users preferred consistency.
* **Diverse Views on Front Matter Inclusion:** 41.7% found it important, while 37.6% did not, emphasizing the need for customization.

## B) Narration of the Table of Contents

### Introduction

The narration of a table of contents (ToC) plays a significant role in shaping a user’s experience of navigating audiobooks. Traditionally, a ToC is a structured list at the beginning or at the end of a book that provides an overview of chapters or sections and helps readers locate content efficiently. For audiobooks, the usability of a narrated ToC presents unique challenges, given the nature of the medium and its accessibility and navigational demands. Its role could be even more critical in audiobooks than print books due to the absence of visual markers, and it is often an important feature for users with print disabilities who rely on audio navigation.

To evaluate user preferences, participants were asked to listen to two audiobook versions: one with a narrated ToC and one without. By comparing preferences across different groups of users and examining their qualitative feedback, this section explores whether narrated ToCs enhance navigation and comprehension and highlights user preferences for narrated versus non-narrated ToCs.
Key questions explored:

* Preference for the sample with or without a narrated ToC
* Usefulness of a narrated ToC or non-narrated ToC
* Preferences for navigation in audiobooks

### Methodology Considerations

Both Francophone and Anglophone participants were tasked with locating and navigating specific sections in each audiobook version. This comparative assessment measured their preferences and evaluated the practical impact of the narrated ToC on the listening experience. The test was conducted in two phases:

1. In the first phase, participants navigated the audiobook without listening to the narrated ToC.
2. In the second phase, they repeated the task after listening to the narrated ToC, enabling an evaluation of whether the narration improved their navigation or comprehension.

Despite the similar task structure for both language groups, slight differences in audiobook content and ToC design were notable and may have influenced participant preferences:

* The **Francophone version** featured a shorter, more descriptive ToC, including contextual information about sections. This additional content made the ToC more useful for participants who valued detailed overviews.
* The **Anglophone version** primarily listed chapter numbers and page references, which some participants found less beneficial. Page numbers, in particular, were seen as irrelevant in an audio format.

**Key Difference:** The Francophone ToC’s additional context and details were often cited as factors contributing to its perceived usefulness, highlighting the importance of descriptive content in enhancing user satisfaction.

Participants interacted with audiobook platforms that offered built-in navigable track lists, chapter menus, and other platform-specific features, which influenced their perception of the narrated ToC’s usefulness:

* **Users with print disabilities** often relied on built-in navigation tools, such as DAISY players or screen-reader-compatible chapter menus, which reduced their reliance on a narrated ToC.
* **Other users** could find the narrated ToC particularly valuable in contexts where platform navigation alone did not provide sufficient information—such as in multi-author collections or reference books where detailed overviews were essential.

This context highlights how platform design plays a crucial role in shaping user preferences. Improvements to navigable track lists and digital chapter menus could potentially complement or even reduce the need for narrated ToCs in certain audiobook formats. For example, integrating contextual descriptions directly into digital ToCs could offer users the flexibility they need without over-relying on narrated ToCs.

### **Preference for Sample With or Without a Narrated Table of Contents**

Table 7 Preference for Audiobook Sample (With or Without a Narrated ToC

|  |  |  |  |
| --- | --- | --- | --- |
| **Preference** | **Respondant (FR) % (Proportion)** | **Respondant (EN) % (Proportion)** | **Total**  |
| Without a narrated ToC | 27.3% (3/11) | 61.1% (22/36) | 53.2% (25/47) |
| With a narrated ToC | 45.5% (5/11) | 16.7% (6/36) | 23.4% (11/47) |
| No preference / I don’t know | 27.3% (3/11) | 22.2% (8/36) | 23.4% (11/47) |

#### ****Quantitative Insights****

**Majority preference for non-narrated ToCs:**
Over half of the respondents 53.2% (25/47) preferred the version of the audiobook without a narrated ToC, suggesting that many listeners find the feature unnecessary when platforms provide effective built-in navigation options.

**Limited preference for narrated ToCs:**
Only 23.4% (11/47) of respondents preferred the version with a narrated ToC, indicating that its utility is highly dependent on specific contexts, such as **non-fiction or reference materials** that benefit from detailed navigation aids.

**Notable indifference among some users:**
The 23.4% (11/47) who expressed no strong preference demonstrate flexibility in their navigation needs and are likely comfortable using platform-based tools like chapter lists.

**Language-based differences:**
While the level of indifference was consistent across groups, **45.5% (5/11) of Francophone participants**preferred the narrated ToC compared to only**16.7% (6/36) of Anglophone participants.**

###### **Note on language-based differences :**

This is a significant difference that calls for further consideration. To interpret this disparity, it is crucial to address how differences in the content and structure of the ToC samples may have influenced user preferences and impacted the overall results.

The differences in preferences between Anglophone and Francophone participants can be attributed not only to user needs but also to methodological and content-specific factors that influenced their perceptions. Although both groups performed the same tasks—navigating audiobooks with and without a narrated ToC—differences in the design of the ToC content likely shaped the outcomes.

The Francophone ToC included shorter, more descriptive entries, often providing additional contextual information about sections. This made it more valuable to participants who prioritized understanding the structure of the book. As a result, 45.5% (5/11) of Francophone respondents preferred the version with a narrated ToC, as the extra detail likely improved their navigation and comprehension.

The Anglophone ToC primarily consisted of chapter numbers and page references. Many participants found these less beneficial, especially since page numbers have been highlighted as irrelevant in an audio format due to the lack of print-audio synchronization or page-based navigation. This limitation likely contributed to 61.1% (22/36) of Anglophone respondents favoring the version without a narrated ToC, relying instead on digital navigation tools, such as track lists and menus.

#### Qualitative Insights

Many respondents felt that audiobook platforms already provide sufficient navigation tools, such as track lists and chapter menus, making a narrated ToC redundant. Comments like, “If the audiobook has the navigation to go to different chapters or sections, I don’t think they need to be narrated,” and “I don’t need the table of contents; I can see the track list and I don’t care what print pages correspond to the start of a chapter,” reflect a general preference for platform-based navigation. These insights align with the quantitative results, where 53.2% (25/47) of respondents preferred the version without a narrated ToC.

Several participants expressed a preference for descriptive track lists over narrated ToCs, further reinforcing this sentiment. One respondent remarked, “I prefer without the narrated table of contents. The table of contents is already listed as the track list,” while another noted, “If the ToC provided timestamps or something applicable to an audiobook format, it might be useful. But the current way with page numbers doesn’t help.” This feedback highlights the desire for navigational tools tailored specifically to audio formats and is consistent with the quantitative findings, where participants favored descriptive and navigable track lists as a more user-friendly alternative.

The importance of a narrated ToC also varied depending on the genre of the audiobook. Fiction listeners generally dismissed its relevance, explaining that a ToC does little to enhance their experience: “For fiction specifically, the table of contents doesn’t matter much. I’d listen to the whole thing in the order the author wrote it anyway,” and “When listening to a fiction story, a table of contents or page numbers don’t add anything to the story.”

In contrast, non-fiction listeners recognized the value of a ToC for navigating specific sections of interest. One participant shared, “For non-fiction, I enjoy having the table of contents because usually there are certain sections that I need to bookmark to come back to.” These differences highlight how genre-specific preferences can influence the perceived usefulness of narrated ToCs, with non-fiction listeners placing a higher value on this feature for functional navigation.

#### Comparative Analysis: Preferences for Narrated vs. Non-Narrated ToCs by Disability Status

Table 8 Comparative Analysis: Preferences for Narrated vs. Non-Narrated ToCs by Disability Status

|  |  |  |
| --- | --- | --- |
| **Preference** | **With Print Disabilities % (Proportion)** | **Without Print Disabilities % (Proportion)** |
| Without a narrated ToC | 44.4% (12/27) | 65.0% (13/20) |
| With a narrated ToC | 25.9% (7/27) | 20.0% (4/20) |
| No strong preference | 29.6% (8/27) | 15.0% (3/20) |

The data, again, does not indicate a strong correlation between disability status and preference for narrated or non-narrated ToCs. Users without print disabilities 65% (13/20) showed a higher preference for non-narrated ToCs compared to users with print disabilities 44.4% 12/27. However, this difference is not substantial enough to suggest fundamentally different navigation behaviors.

Importantly, this should not be interpreted as users with print disabilities relying more on narrated ToCs. Users with print disabilities 25.9% (7/27) had a slightly higher preference for narrated ToCs compared to users without print disabilities 20% (4/20). This minimal difference suggests that while auditory guidance is more valuable to some users with print disabilities, it is not essential for the majority of them. Many users with print disabilities are comfortable relying on alternative navigational aids provided by audiobook platforms.

29.6% (8/27) of users with print disabilities expressed no strong preference, compared to 15% (3/20) of users without print disabilities. This indicates that users with print disabilities demonstrate more flexibility and adaptability in their navigation habits. However, this flexibility does not strongly correlate with a greater need for narrated ToCs. Instead, it highlights the importance of offering multiple navigation options—narrated ToCs, descriptive track lists, and interactive chapter markers—to cater to diverse preferences and user needs. It might also indicate that people with PD value content over presentation possibly since choice of content is more limited than for those without PD.

Narrated ToCs should be offered as an **optional, complementary feature** for users who find auditory guidance helpful. Therefore, audiobook designs should prioritize **customizable navigation settings**that can be adapted to individual preferences, rather than rigidly tailoring the experience based solely on disability status.

### User perception of Usefulness of Narrated Tables of Contents

Table 9 User perception of Importance of Narrated Tables of Contents

|  |  |  |  |
| --- | --- | --- | --- |
|  **Level of Importance** | **Respondent (EN) % (Proportion)** | **Respondent (FR) % (Proportion)** | **Total % (Proportion)** |
| Not important  | 58.3% (21/36) | 27.3% (3/11) | 51.1 % (24/47) |
| Slightly important  | 13.9% (5/36) | 18.2% (2/11) | 14.9 % (7/47) |
| Moderately important | 5.6% (2/36) | 36.4% (4/11) | 12.8 % (6/47) |
| Important  | 8.3% (3/36) | 0.0% (0/11) | 6.4 % (3/47) |
| Very important  | 11.1% (4/36) | 18.2% (2/11) | 12.8 % (6/47) |
| I don’t know  | 2.8% (1/36) | 0.0% (0/11) | 2.1 % (1/47) |

Table 10 The Helpfulness of the narrated table of contents to better understand the structure and contents of the book

|  |  |  |  |
| --- | --- | --- | --- |
| **Helpfulness Level** | **Respondent (EN) % (Proportion)** | **Respondent (FR) % (Proportion)** | **Total % (Proportion)** |
| Yes it helped  | 22.2% (8/36) | 63.6% (7/11) | 31.9% (15/47) |
| No, it didn’t help  | 69.4% (25/36) | 27.3% (3/11) | 59.6% (28/47) |
| I don’t know  | 8.3% (3/36) | 9.1% (1/11) | 8.5% (4/47) |

Table 11 : User Preferences for Navigation Tools in Audiobooks

|  |  |  |  |
| --- | --- | --- | --- |
| **Preference** | **Respondent (EN) % (Proportion)** | **Respondent (FR) % (Proportion)** | **Total % (Proportion)** |
| Descriptive and navigable track list | 55.6% (20/36) | 36.4% (4/11) | 51.1% (24/47) |
| Narrated table of contents | 8.3% (3/36) | 18.2% (2/11) | 10.6% (5/47) |
| Both | 13.9% (5/36) | 27.3% (3/11) | 17.0% (8/47) |
| I have no preference | 22.2% (8/36) | 0.0% (0/11) | 17.0% (8/47) |
| Other | 0.0% (0/36) | 18.2% (2/11) | 4.3% (2/47) |

#### Quantitative Insights

**Limited Perceived Importance of Narrated ToCs (Table 9)**

* Nearly half of the respondents 48.15% (24/47) considered narrated ToCs to be “not important.” Anglophone respondents were particularly dismissive, with 58.33% (21/36) rating them as such, compared to 27.27% (3/11) of Francophone respondents.
* The slight difference between Anglophone and Francophone preferences highlights individual variations in navigational needs, potentially influenced by the design differences of the ToCs in the test.
**Takeaway**: Most users find narrated ToCs unnecessary, especially when efficient platform-based navigational tools like track lists are available.

**Low Helpfulness of Narrated ToCs in Locating Sections (Table 10)**

* Only **31.9% (15/47)** of participants found the narrated ToC helpful for locating specific sections, with higher helpfulness reported by Francophone respondents **63.6% (7/11)** compared to Anglophone respondents **22.2% (8/36)**.
* A significant majority 59.6% (28/47) found the narrated ToC ineffective, indicating that it is not a reliable tool for precise navigation.
**Takeaway**: Narrated ToCs are generally viewed as ineffective, particularly when compared to more accessible and streamlined alternatives such as track lists and interactive chapter menus.

**Strong Preference for Descriptive and Navigable Track Lists (Table 11)**

* Nearly half of all respondents 51.1% (24/47) preferred descriptive track lists as their primary navigation tool, with a higher proportion of Anglophone respondents 55.6% (20/36) favoring this option compared to Francophone respondents 36.4% (4/11).
* In contrast, only 10.6% (5/47) of respondents chose standalone narrated ToCs, indicating limited demand. Additionally, 17.0% (8/47) expressed interest in a hybrid option (combining both track lists and narrated ToCs).

**Takeaway:** The strong preference for track lists suggests that these tools should be prioritized, while narrated ToCs could be offered as an optional support feature for users seeking additional auditory navigation aids.

### Discussion of Results

Results from this section of the study show that while most users prefer audiobooks without narrated Tables of Contents (ToCs), the usefulness of narrated ToCs varies significantly based on context, genre, and user needs. Non-fiction listeners and Francophone-language participants showed a stronger preference for narrated ToCs, valuing them for providing context and enabling non-linear navigation. However, fiction listeners largely found them unnecessary, favoring streamlined navigation through platform-based tools like descriptive track lists and chapter menus. Users with print disabilities expressed mixed preferences, highlighting the importance of flexible navigational options that cater to diverse needs. These findings align with the Landscape Review’s emphasis on accessible design and born-accessible production, underscoring the need for hybrid solutions where narrated ToCs are optional and platform-based navigation remains the core focus for efficient user experiences.

### Summary: Narration of the Table of Contents in Audiobooks

Most listeners prefer built-in navigation over narrated ToCs. However, providing optional, well-designed narrated ToCs can accommodate the needs of non-fiction and Francophone users, ensuring an accessible and flexible experience.

#### ****Key Findings****

* **Preference for Non-Narrated ToCs:** Our study reveals that the majority of audiobook users prefer not to have a narrated table of contents (ToC); 51.1% (24/47) rated it as “not important,” with a notably higher dismissal among Anglophones 58.3% (21/36) compared to Francophones 27.3% (3/11).
* **Limited Usefulness:** Only 31.9% (15/47) found the narrated ToC helpful, and descriptive track lists emerged as the favored navigation tool preferred by 51.1% overall (24/47).
* **Genre and Language Differences:** Although Francophone users showed a greater interest in narrated or hybrid options—likely due to a more detailed and contextual ToC design—the small sample size means these differences should be interpreted cautiously.
* **Minimal Impact of Print Disabilities:** Preferences are similar regardless of print disability status.

## C) Inclusion and Placement of Footnotes

### Introduction

Footnotes and endnotes have long played an important role in books by offering supplemental information, clarifying references, and providing additional context. By footnotes, in this section we don’t talk about footnote that are reference, but rather additional content. In print, readers can engage with this material at their own pace, but audiobooks present a different set of challenges. How can footnotes be integrated into the listening experience in a way that is informative without disrupting the flow of the narration?

### Methodology Considerations

To explore user preferences for footnote placement in audiobooks, we conducted comparative tests with two audiobook versions available to both Anglophone and Francophone-speaking participants:

1. **Integrated Footnotes:** Footnotes were seamlessly embedded within the main narration.
2. **Separate Track Footnotes:** Footnotes were provided in a dedicated, separate track that listeners could access optionally.

Participants navigated through specific chapters, reflecting on their experiences with each version. Key factors influencing responses included:

* **Platform Limitations:** The test platform did not allow for bookmarks or easy navigation to footnotes, which may have affected preferences.
* **Cultural/Language Differences:** The Francophone and Anglophone versions differed slightly in narration style and content, potentially impacting preferences.
* **Genre Impact:** Since the samples included both fiction and non-fiction excerpts, participant feedback varied based on perceived importance of the footnotes.

### Preference for Sample with Integrated or Separated Footnote Placement

Table 12 Preference for Footnote Placement (embedded vs in separate track)

|  |  |  |  |
| --- | --- | --- | --- |
| **Version Preferred** | **Respondents (EN) % (Proportion)** | **Respondents (FR) % (Proportion)** | **Total Respondents % (Proportion)** |
| Integrated within the main text | 67.6% (23/34) | 54.5% (6/11) | 64.4% (29/45) |
| In a separate track | 17.6% (6/34) | 27.3% (3/11) | 20.0% (9/45) |
| No preference | 14.7% (5/34) | 9.1% (1/11) | 13.3% (6/45) |
| Unsure | 0.0% (0/34) | 9.1% (1/11) | 2.2% (1/45) |

#### Quantitative Insights

**Strong Overall Preference for Integrated Footnotes:**

* 64.4% (29/45) of respondents preferred footnotes to be integrated within the main narration, suggesting that immediate access to contextual information is highly valued across users.

**Limited Preference for Separate Tracks:**

* Only 20.0% (9/45) of respondents preferred footnotes in a separate track, indicating that most users do not favor switching away from the main narration to access additional information.

**Minimal Indifference or Uncertainty:**

* 13.3% (6/45) of respondents expressed no preference, indicating flexibility among this group regarding footnote placement.

#### Qualitative Insights

As part of this process, participants were asked to give more details why they choose their answer. The goal was to gain further insights into how different footnote placement strategies affect listener comprehension and satisfaction. The analysis highlights key themes and considerations, categorized into **three main dimensions**: comprehension, usability, and content relevance.

**Comprehension and Cognitive Flow**

Many participants emphasized the importance of maintaining continuity and clarity while listening. Footnotes embedded in the main narration were often preferred when they provided essential context or clarified immediate points of the main text.

**Key Theme: Immediate Context Enhances Understanding**

“Hearing the footnotes within the text gives it continuity, which is missing if they are in a separate file. I find it difficult to remember what is being referenced if it is not within the text.” (Anglophone Survey Answer)

“I think if I skip them, I don’t have the full context. If I refer to them at the end of the book/chapter, I might have forgotten the context.” (Anglophone Survey Answer)

**Usability and Navigation Preferences**

Several respondents stressed the need for flexible navigation options, highlighting a tension between keeping footnotes integrated and ensuring they are skippable when desired.

**Key Theme: Flexibility Is Critical for Usability**

“I like the ability to skip the footnotes, but if I cannot easily skip them using the next button, I can use a time jump.” (Anglophone Survey Answer)

**Challenge: Memory Load with Separate Footnotes**

Participants noted that footnotes placed at the end of chapters or in separate tracks created difficulties in recalling the context:

“If the chapter is long, with many details, it can be hard to remember all of the pieces if the footnote is at the end.” (Anglophone Survey Answer)

**Content Relevance and Genre-Specific Preferences**

The nature of the book and the type of information contained within the footnote were key factors in determining placement preferences.

It depends on the book! If it’s an academic book and I’m seeking sources, footnotes are VERY important. In a non-academic book that I am reading solely for pleasure footnotes are not crucial. (Anglophone Survey Answer)

**Key Theme: Footnote Relevance Influences Preferred Placement**

**For fiction:** Respondents often preferred minimal interruptions unless the footnotes contributed directly to the story.

“In fiction, lengthy footnotes can disrupt the flow. For stories, I’d prefer them at the end.” (Anglophone Survey Answer)

**For non-fiction:** Integrated footnotes were more acceptable, especially when they provided essential background or clarified key points.

**Mixed preferences:** Some participants expressed a need for differentiated handling based on content type.

“It depends on the footnote. If it’s a reference to a source, it should be separate. But if it’s informative and expands on the text, it should flow with the main content.” (Anglophone Survey Answer)

#### Comparative Analysis: Footnote Placement Preferences by Disability Status

Table 13 Footnote Placement Preferences by Disability Status

|  |  |  |
| --- | --- | --- |
| **Preference** | **With Print Disabilities (% and Count)** | **Without Print Disabilities (% and Count)** |
| Preferred notes integrated within main text | 64.0% (16/25) | 72.2% (13/18) |
| Preferred notes in a separate track | 16.0% (4/25) | 22.2% (4/18) |
| No preference | 16.0% (4/25) | 5.6% (1/18) |
| I’m not sure | 4.0% (1/25) | 0.0% (0/18) |

The minimal differences between the two groups (e.g., 64.0% vs. 72.3% for integrated footnotes) show that disability status does not play a meaningful role in determining footnote placement preferences. Both groups overwhelmingly prefer footnotes integrated into the main text, and any differences in secondary preferences are small enough to be considered negligible for practical purposes.

### Importance of Including Footnotes in Audiobooks

Table 14 Importance of Including Footnotes in Audiobooks

|  |  |  |  |
| --- | --- | --- | --- |
| **Importance Level** | **Anglophone Respondents % (Proportion)** | **Francophone Respondents % (Proportion)** | **Total Respondents % (Proportion)** |
| Not important | 2.9% (1/34) | 9.1% (1/11) | 4.4% (2/45) |
| Slightly important | 11.8% (4/34) | 0.0% (0/11) | 8.9% (4/45) |
| Moderately important | 5.9% (2/34) | 9.1% (1/11) | 6.7% (3/45) |
| Important | 29.4% (10/34) | 45.5% (5/11) | 33.3% (15/45) |
| Very important | 47.1% (16/34) | 27.3% (3/11) | 42.2% (19/45) |
| I don’t know | 2.9% (1/34) | 9.1% (1/11) | 4.4% (2/45) |

#### Quantitative Insights

**Overwhelming support for inclusion of footnotes**

75.5% (34/45) of respondents rated footnotes as either important or very important, underscoring their perceived value in enhancing comprehension and providing context.

**Minimal opposition to inclusion of footnotes**

Only 13.3% (9/45) of respondents considered footnotes minimally important (not important, slightly important, or moderately important), suggesting that most users appreciate the benefits of footnotes even if their placement preferences vary.

### Most Important Consideration When Including Footnote

Table 15 Most Important Consideration for Footnotes in Audiobooks

|  |  |
| --- | --- |
| **Consideration** | **Total Respondents (FR/EN) (% and Count)** |
| The ability to skip them if desired | 17.8% (8/45) |
| Hearing the notes within the context of the main text | 53.3% (24/45) |
| Staying in the flow of the main text (not hearing the footnotes) | 20.0% (9/45) |
| I don’t know | 8.9% (4/45) |

#### Quantitative Insights

**Context is the top priority**

* 53.3% (24/45) of respondents emphasized the importance of hearing footnotes within the context of the main text, particularly for non-fiction or academic content where immediate access to additional information is necessary for understanding.

**Flexibility remains important**

* 17.8% (8/45) of respondents highlighted the need to skip footnotes when they aren’t essential. This group values flexibility, especially for content like fiction, where interruptions can disrupt the narrative flow.

**Maintaining uninterrupted flow**

* 20.0% (9/45)of respondents preferred staying in the flow of the main text, without being interrupted by footnotes. This suggests that for certain types of books—such as fiction—designs that minimize disruptions may be more desirable.

**Minimal uncertainty**

* Only 8.9% (4/45) of respondents were uncertain, indicating that most participants have a clear understanding of their preferences when it comes to footnote placement.

### Indicating the Presence of Footnotes

Table 16 Preferred Method for Indicating Footnotes

|  |  |  |  |
| --- | --- | --- | --- |
| **Indication Method** | **Respondents (EN) (% and Count)** | **Respondents (FR) (% and Count)** | **Total (% and Count)** |
| Designated by saying “footnote” and “end of footnote” | 73.5% (25/34) | 63.6% (7/11) | 71.1% (32/45) |
| Audible signal | 8.8% (3/34) | 0.0% (0/11) | 6.7% (3/45) |
| Different voice | 14.7% (5/34) | 9.1% (1/11) | 13.3% (6/45) |
| I don’t know | 0.0% (0/34) | 9.1% (1/11) | 2.2% (1/45) |
| I would like something else | 2.9% (1/34) | 18.2% (2/11) | 6.7% (3/45) |

#### Quantitative Insights

**Majority prefer clear verbal indicators**

* A strong majority—71.1% (32/45) of total respondents preferred footnotes to be indicated verbally by saying “footnote” and “end of footnote,” showing strong support for simple and explicit indicators.

**Limited support for alternative methods**

* Only 13.3% (6/45) of total respondents favored using a different voice to indicate footnotes, while 6.7% (3/45) suggested an audible signal.

**Minimal uncertainty**

* Very few participants were uncertain about their preferences, with only 2.2% (1/45) of total respondents selecting “I don’t know.” This highlights the clarity of preferences regarding how footnotes should be indicated.
* The majority of respondents across both language groups prefer verbal indicators (“footnote” and “end of footnote”)for simplicity and clarity. However, a minority expressed interest in alternative methods such as audible signals or a different voice, particularly for shorter or less critical footnotes.

### Discussion of Results

Strong overall support for integrated footnotes

The majority of participants 64.4% (29/45) across Anglophone and Francophone samples preferred footnotes integrated within the main text, particularly when they provide essential context or explanations. This preference was consistent across participants with and without print disabilities, indicating that disability status does not significantly impact footnote placement preferences. Immediate access to footnotes enhances comprehension, especially for non-fiction and academic content. However, this support for integration is tempered by concerns over interruptions in narrative flow, especially in fiction.

Importance of flexibility and customization

A significant number of participants emphasized the need to hear footnotes within the context of the main text, while others stressed the importance of being able to skip or bypass footnotes that are less relevant or too lengthy. This dual preference underscores the importance of flexibility—allowing listeners to choose whether to engage with or skip footnotes based on their needs. The recommendation for customization was reinforced by feedback from both Anglophone and Francophone participants who advocated for easy-to-navigate audiobook platforms with options for toggling footnote settings.

Genre-specific differences in footnote handling

Preferences for footnote placement and presentation varied depending on the type of content. For fiction and narrative-driven audiobooks, participants generally preferred minimal interruptions, with footnotes placed at the end of chapters or as separate, skippable tracks. Conversely, non-fiction and academic content required more integrated footnotes to provide immediate context and improve comprehension.

 Although participants expressed preferences for different footnote treatments based on genre, adopting aconsistent design with skippable or toggleable footnotes resolves the need to differentiate treatments. This approach allows listeners to customize their experience while ensuring that essential footnotes are always included within the narration.

Indicating footnotes clearly and intuitively

A large majority of respondents 71.1% (32/45) preferred using verbal indicators such as “footnote” and “end of footnote” to signal the presence of footnotes during narration. However, a minority expressed interest in alternative methods, such as audible signals or different voices, particularly for shorter or less critical footnotes.

If the industry adopts audible signals as an alternative to verbal indicators, they would need to be standardized across publishers and platforms to ensures a consistent listening experience across audiobooks from different publishers. This would reduce confusion for listeners by familiarizing them with consistent cues, enhances accessibility for listeners with disabilities by providing predictable signals.

**Challenges of Footnotes in Audiobooks**

A significant challenge in implementing footnotes in audiobooks is the technological constraints of current audiobook platforms. While users express a clear preference for optional or skippable footnotes, there is no standardized method for handling footnotes across audiobook production and playback systems.

Industry Feedback from Kobo (Wendy Reid, Rakuten Kobo) highlights that the gap between user expectations and what publishers and audiobook platforms can currently provide is particularly wide when it comes to footnote implementation. Unlike eBooks, which allow for hyperlinked references or pop-up annotations, audiobook platforms do not yet have a universal system for marking, skipping, or navigating footnotes.

Currently, the only viable solutions for integrating footnotes into audiobooks involve:

* Highly detailed Tables of Contents (ToCs) with manually indexed footnotes, allowing users to navigate through them as separate tracks.
* Precise content segmentation by publishers to structure footnotes as discrete audio clips that could potentially be accessed separately.
* Audio cues or naming conventions to signal footnotes, though this method lacks programmatic functionality for playback customization.

However, these methods are workarounds rather than true solutions. According to Wendy Reid (Rakuten Kobo), the best long-term approach would be the development of a standardized tagging system that allows audiobook players to recognize and handle footnotes programmatically. If publishers could tag footnotes within audiobook files in a way that audiobook players could ingest, platforms could then offer global or per-book settings to:

* Enable or disable footnote playback based on user preferences.
* Allow granular skipping of individual footnotes within the player interface.

Without such a standardized metadata system, the ability to integrate footnote skippability and navigation features remains extremely limited. This highlights the need for cross-industry collaboration between publishers, audiobook distributors, and platform developers to establish a technical framework that enables footnotes to be dynamically controlled within audiobooks.

From a production perspective, Joanie Tremblay notes that essential footnotes are generally integrated directly into the main text, with a mention at the beginning of the book indicating this approach. She emphasizes that any standardization should be developed in collaboration with publishers, who are the true custodians of the content.

### Summary: Inclusion and Placement of Footnotes in Audiobooks

Most listeners prefer integrated footnotes. However, flexibility is key—fiction listeners favor minimal interruptions. Customizable options, such as toggleable footnotes and standardized indicators, enhance accessibility and user experience.

#### ****Key Findings****

* **Preference for Integrated Footnotes:** 64.4% (29/45) favored embedding footnotes within narration for immediate context.
* **Low Demand for Separate Tracks:** Only 20.0% (9/45) preferred footnotes in a separate track, finding it disruptive.
* **Minimal Impact of Print Disabilities:** Preferences were nearly identical across users with and without print disabilities.
* **Genre-Based Differences:** Fiction listeners preferred skippable footnotes, while non-fiction listeners valued integration.
* **Strong Support for Footnotes:** 75.5% (34/45) found them important, particularly in academic and non-fiction works.

## D) Bibliography Narration

### Introduction

Bibliographies are essential components of both academic and non-academic works, offering readers the resources needed to verify and explore referenced materials. In audiobooks, the presentation of this content introduces unique challenges and opportunities. Whether narrated by human voices or synthetic alternatives, bibliographic sections influence user comprehension, engagement, and accessibility. This section delves into user perceptions of different narration styles, comparing human and AI voices, and evaluates their impact on clarity and satisfaction. Additionally, it investigates user preferences for future enhancements, including text-based bibliographies, hybrid formats, and navigation aids that improve the listening experience.

### Methodology Considerations

Anglophoneparticipants were asked to compare two audiobook samples featuring a narrated bibliography section: one narrated by a human voice (*Abolitionist Intimacies*) and the other by a synthetic voice (*Monster and the Mirror*). Although the search results on the platform indicated which version used human narration and which used synthetic narration, this information was intentionally withheld from the survey questions to minimize bias during the evaluation process.

Participants were instructed to listen to several minutes of the bibliography in both samples and evaluate how each narration style affected their ability to comprehend, engage with, and retain the referenced information. Specific areas of evaluation included the ease of identifying where one reference ended and another began, the clarity and accuracy of web address narration, and their overall preferences between human and synthetic delivery.

Several factors may have influenced participants’ preferences. For example, the pacing of the human narrator, the clarity and separation of bibliographic entries, and differences in the pronunciation and rhythm of the synthetic voice were frequently mentioned as key variables. Some respondents noted that human narration provided a more engaging and natural listening experience, while others appreciated the precision and consistency of synthetic narration for URLs and technical details. These variables highlight the context-sensitive nature of user preferences and emphasize the importance of nuanced interpretation.

### Preference for Sample Bibliography with Human or Synthetic Narration

Table 17 User Preference for Human vs. Synthetic Narration (Anglophones only)

|  |  |
| --- | --- |
| **Version** | **Total % (Proportion)** |
| Human narration (Abolitionist Intimacies) | 44.12% (15/34) |
| Synthetic narration (Monster and the Mirror) | 29.41% (10/34) |
| No preference | 26.47% (9/34) |
| I don’t know | 0.00% (0/34) |

#### Quantitative Insights

**Higher preference for human narration**

* 44.12% (15/34) of respondents favored human narration, highlighting a general tendency toward preferring a natural voice.

**Moderate support for synthetic narration**

* 29.41% (10/34) of respondents preferred synthetic narration, indicating that a significant portion found it acceptable, particularly for certain types of content.

**Neutral stance from a quarter of respondents**

* 26.47% (9/34) of participants expressed no preference, suggesting that for some, narration type does not significantly impact their listening experience.

#### Qualitative Insights

**Reasons for Preferring Human Narration**

Respondents who preferred human narration frequently mentioned its natural tone, emotional engagement, and clarity. Many found human voices more pleasant and easier to follow, as they conveyed nuance and expressiveness that enhanced comprehension.

“Human narrated is so much more informative than AI” (Anglophone Survey Answer)

“It sounded less robotic and was more engaging to listen to” (Anglophone Survey Answer)

“I find it easier to listen to and understand the human narrated voice” (Anglophone Survey Answer)

However, some participants pointed out challenges with human narration, such as variability in narrator quality and slower pacing, which sometimes made listening less efficient.

**Reasons for Preferring Synthetic Narration**

Respondents who favored synthetic narration often cited its consistency, efficiency, and ability to handle structured content effectively. Some felt it was particularly useful for technical elements like URLs, bibliographies, and references, as it maintained steady pronunciation and rhythm.

“The synthetic voice smartly handles common tropes like ‘double-slash’ and ‘triple-W’ in URLs” (Anglophone Survey Answer)

“It was less arduous to listen to the sped-up synthetic voice reading web addresses” (Anglophone Survey Answer)

**Responses from Those Without a Preference**

More than a quarter of respondents indicated that they did not strongly favor one type of narration over the other. These participants generally viewed both narration types as clear and functional, prioritizing content over delivery style.

“I found them both easy and clear to listen to” (Anglophone Survey Answer)

“The content presented doesn’t affect my reading in either human or AI” (Anglophone Survey Answer)

**Context-Specific Preferences and Potential for Hybrid Use**

Some participants indicated that their preference depended on the type of content. Human narration was viewed as better suited for narrative-driven or emotional material, while synthetic narration was seen as more practical for structured, technical, or reference-heavy content.

“I would not like a digital voice for an audiobook that I was reading for enjoyment” (Anglophone Survey Answer)

“While human is still my first preference, I am open to AI” (Anglophone Survey Answer)

### Importance of a Narrated Bibliography

Table 18 Importance of a Narrated Bibliography (Anglophone Group)

|  |  |
| --- | --- |
| **Response** | **Total % (proportion)** |
| Not important | 35.3% (12/34) |
| Slightly important | 32.4% (11/34) |
| Moderately important | 14.7% (5/34) |
| Important | 11.8% (4/34) |
| Very important | 5.9% (2/34) |

#### Quantitative Insights

**Low perceived importance**

* 67.7% (23/34) of respondents rated narrated bibliographies as either “not important” or “slightly important”.

**Minimal strong support**

* Only 17.7% (6/34) of participants rated narrated bibliographies as “important” or “very important,” suggesting limited general demand.

**Implication:** Given the low perceived importance, audiobook producers should prioritize offering accessible text-based bibliographies while keeping narrated audio versions as optional.

### Clarity in Understanding Bibliographic References

Table 19 Clarity in Understanding Where References Start and End

|  |  |
| --- | --- |
| **Sample Version** | **Total % (proportion)** |
| Abolitionist Intimacies (Human) | 29.41% (10/34) |
| Monster and the Mirror (Synthetic) | 20.59% (7/34) |
| No preference | 47.06% (16/34) |
| I don’t know | 2.94% (1/34) |

#### Quantitative Insights

**High flexibility among users**

Nearly half of the respondents 47.06% (16/34) indicated no strong preference for synthetic versus human narrated references with respect to the clarity of where references began and ended, suggesting variability in how individuals perceived the effectiveness of the two narration styles.

**Slight favor toward human narration**

Among those who expressed a preference, 29.41% (10/34) favored human narration (*Abolitionist Intimacies*), compared to 20.59% (7/34) for synthetic narration (*Monster and the Mirror*).

While human narration provided slightly clearer transitions for some users, the significant proportion of neutral responses highlights the potential to improve both formats through navigation aids, such as verbal cues or structured markers for reference transitions.

### Preferred Bibliographic Delivery Options

Table 20 Preferred Format for Accessing Bibliographic Information

|  |  |
| --- | --- |
| **Preferred Option** | **Respondents (% / Count)** |
| Narrated bibliography | 8.8 % (3/34) |
| Text version provided alongside the audiobook | 58.8 % (20/34) |
| Both | 23.5 % (8/34) |
| None of these options interest me | 8.8 % (3/34) |

#### Quantitative Insights

**Strong preference for text-based delivery**

* 58.8% (20/34) of respondents preferred having a text version delivered alongside the audiobook, and 23.5% (8/34) preferred both formats, suggesting broad support for multi-format options.

**Limited preference for narrated-only delivery**

Only 8.8% (3/34) of respondents wanted solely narrated bibliographies, highlighting low demand for this standalone format.

### Perceptions of AI-Narrated Bibliographies

Table 21 Perceptions of artificial Intelligence AI-Narrated Bibliographies

|  |  |
| --- | --- |
| **Response** | **Percentage % (Proportion)** |
| I strongly prefer human narration only | 14.7% (5/34) |
| I prefer human narration, but I’m open to AI if it increases access | 47.1% (16/34) |
| I’m comfortable with either human or AI narration | 23.5% (8/34) |
| I prefer AI narration over human narration | 11.8% (4/34) |
| I have no preference | 2.9% (1/34) |
| I don’t know | 0.0% (0/34) |

#### Quantitative Insights

**Openness to AI narration:** Nearly half of respondents 47.1% (16/34) preferred human narration but were open to AI narration if it increased audiobook accessibility.

**Minor support for AI preference:** Only 11.8% (4/34)of respondents preferred AI over human narration, indicating that AI is acceptable but not widely preferred.

**Comparative analysis between people with and without print disabilities:** Respondents with print disabilities were slightly more open to AI narration as long as it improved access and exhibited higher adaptability with no preference for a specific narration style.

###  Discussion of results

The findings from this section highlight several key trends in user preferences for audiobook bibliographies, emphasizing the context-specific nature of their needs and the overall low demand for standalone narrated bibliographies. Although a slight preference for human narration was observed 44.1% (15/34) , a significant portion of respondents expressed flexibility, with 26.5% (9/34) indicating no strong preference. This highlights the importance of designing flexible audiobook solutions that cater to different contexts, such as academic and casual listening.

Human narration was generally favored for its natural flow and engagement, making it more suitable for pleasure reading or complex content requiring nuanced interpretation. However, synthetic voices excelled in technical contexts, where their precision in pronouncing URLs and symbols was appreciated. User feedback consistently highlighted that the effectiveness of a narration style depends on the type of content being presented.

The perceived importance of narrated bibliographies was low overall, with 67.7% (23/34) of respondents rating them as “not important” or “slightly important.” Instead, users strongly preferred having an accessible text version alongside the audiobook, suggesting that multi-format options are critical to improving usability and engagement. Similarly, while respondents were generally open to AI narration, most saw it as a complement to human narration rather than a replacement.

Given the consistency in preferences across respondents with and without print disabilities, the combined results offer actionable insights into the general design of bibliographic sections. Minor differences, such as slightly greater flexibility and openness to AI among those with print disabilities, reinforce the need for adaptable and customizable features.

#### Narration of Bibliographies and the Challenges of Text-Heavy Content in Audiobooks

Bibliographies, references, and other text-heavy appendices present a significant challenge in audiobook production and playback. While such content is essential in academic, research-based, and non-fiction works, its oral rendering in audiobooks can be cumbersome, leading to listener fatigue and reduced usability. Unlike eBooks, where bibliographies can be visually scanned, or navigated efficiently (by assisistive technology), audiobooks rely on linear narration, making it difficult for users to access, reference, or revisit sources effectively.

One of the main gaps in audiobook technology, as highlighted by industry stakeholders, is the inability of most audiobook players to display text content alongside audio controls. According Wendy Reid (Rakuten Kobo), while there is a clear opportunity for improvement, current platforms do not support simultaneous text and audio presentation in a way that would make bibliographies easily accessible to listeners. Without a designated way to differentiate bibliographies from core content, listeners are forced to either sit through lengthy lists of citations or miss out on this important supplementary information altogether.

To address this, stakeholders emphasize the need for standardized tagging and formatting that would allow audiobook players to recognize text-based content separately from the main narration. With proper metadata integration, future audiobook platforms could offer features such as:

* Optional on-screen text display for bibliographic entries, allowing users to follow along or reference sources without disrupting the audio playback.
* Segmented bibliographies, enabling users to skip, bookmark, or navigate citations without affecting the listening experience.
* Hybrid text-audio delivery, where users could switch between listening to or reading bibliography sections, similar to features found in eBook-audiobook synchronization technologies.

Currently, these solutions remain theoretical, as audiobook platforms do not yet provide the necessary infrastructure for dynamic text-audio integration. However, stakeholders agree that developing a standardized method for delivering and tagging text-heavy content in audiobooks could drive innovation in audiobook accessibility and usability. As the industry moves toward more interactive and customizable audiobook experiences, improving the way bibliographies are handled could significantly enhance the functionality of audiobooks for researchers, students, and general readers alike.

**Summary: Bibliography Narration in Audiobooks**

Narrated bibliographies are generally considered low priority, with most users preferring text-based versions. Human narration is favored over AI, though many are open to AI if it enhances accessibility. Providing flexible delivery options, clear structuring, and hybrid formats ensures usability for all listeners.

**Key Findings**

* **Preference for Human Narration:** 44.1% (15/34) preferred human narration, citing clarity and engagement, while 29.4% (10/34) favored synthetic narration for its consistency and efficiency.
* **Low Perceived Importance of Narrated Bibliographies:** 67.7% (23/34) rated them as “not important” or “slightly important,” indicating limited demand.
* **Text-Based Delivery Preferred:** 58.8% (20/34) preferred receiving bibliographies in text form alongside the audiobook, while only 8.8% (3/34) wanted them narrated alone.
* **Openness to AI Narration:** 47.1% (16/34) preferred human narration but were open to AI if it improved accessibility, while only 11.8% (4/34) strongly preferred AI over human narration.
* **Clarity in Reference Structure:** 47.1% (16/34) had no preference between human or synthetic narration in terms of bibliographic clarity, highlighting the need for better structuring aids.

## E) Cover image descriptions

### Introduction

Cover image descriptions in audiobooks serve as an additional layer of accessibility and context, allowing listeners—particularly those with print disabilities—to engage with the visual identity of a book. These descriptions offer insight into a book’s themes, mood, and artistic presentation, ensuring that all listeners have equal access to information that is otherwise conveyed visually. However, opinions on their usefulness vary depending on a listener’s access to the book cover, the complexity of the cover design, and personal preference.

This section examines participants’ perspectives on whether cover descriptions enhance their audiobook experience, the factors influencing their acceptance, and recommendations for improving their integration in audiobook production.

### Methodology Considerations

Participants evaluated two audiobook samples in both Anglophone and Francophone to assess the impact of cover descriptions.

For the **Anglophone test**, participants listened to two versions of each audiobook—one with a cover description and one without. This allowed them to compare experiences and determine whether including a description enhanced or detracted from their listening experience.

* Our Lady of Mile End (Sarah Gilbert): Participants listened to both versions until reaching the **"About the Author"** section.
* Back in the Land of the Living (Eva Crocker): Participants listened to both versions until reaching the **"Land Acknowledgements"** section.

For the **Francophone test**, a similar structure was followed for Circé des hirondelles, where participants tested both versions of the audiobook. However, for Jules et Jim, only the version with a cover description was included, limiting direct comparisons for this sample.

* Circé des hirondelles (Gilles Lacombe): Participants listened to both the **version with a cover description** and the **version without**, stopping at the **"À propos de l’auteur"** section.
* Jules et Jim (Jacques Goldstyn): Only the **version with a cover description** was tested, with participants listening up to the **"Pages des crédits"** section.

The complexity and style of the cover descriptions varied between audiobooks, influencing participant responses. Circé des hirondelles featured a graphically detailed cover, making its description potentially more relevant for accessibility. In contrast, Jules et Jim included a long and poetic cover description, approximately twice the length of the Anglophone equivalent, making the difference between concise and extended descriptions more pronounced in the Francophone test.

Despite differences in test structure, some comparisons between Anglophone and Francophone responses remain valid, particularly regarding **general preferences for cover descriptions, perceived usefulness, and the impact of description length on listener experience.** However, the absence of a no-description version for Jules et Jim limits direct comparisons in some areas. Findings are therefore analyzed separately where necessary while drawing relevant parallels across language groups when appropriate.

### Preference for Sample with or without Cover Image Description

Table 22 Preferences for Audiobook Versions With or Without Cover Descriptions

|  |  |  |  |
| --- | --- | --- | --- |
| **Response** | **Respondent (FR) % (Proportion)** | **Respondent (EN) % (Proportion)** | **Total % (Proportion)** |
| Prefer With Cover Description | 36.4% (4/11) | 64.9% (24/37) | 58.3% (28/48) |
| Prefer Without Cover Description | 36.4% (4/11) | 24.3% (9/37) | 27.1% (13/48) |
| No Preference | 27.3% (3/11) | 10.8% (4/37) | 14.6% (7/48) |

#### Quantitative Insights

**Majority preference for descriptions:** More than half of participants 58.3% (28/48) preferred audiobooks with cover descriptions, suggesting that listeners generally found value in having cover visuals described.

**A quarter of participants preferred no descriptions:** 27.1% (13/48) of respondents opted for the version without descriptions, indicating that for some, cover descriptions may not add significant value or could be seen as unnecessary.

**A segment with no strong preference:** 14.6% (7/48) of participants expressed no clear preference, suggesting that their stance on cover descriptions might depend on the specific book, its cover complexity, or their listening habits.

#### Qualitative Insights

Participants who supported cover descriptions emphasized their role in **enhancing immersion, providing additional context, and improving accessibility for visually impaired listeners**. Others, however, found them unnecessary or distracting, particularly when they could already see the cover or felt that the description **disrupted the audiobook’s flow**. The feedback highlights a spectrum of opinions, suggesting that while cover descriptions add value for many users, their effectiveness depends on factors such as **content, length, and placement**.

##### **Enhancing the Listening Experience**

For many listeners, the inclusion of a **cover description enriched their understanding of the book** by offering visual cues they would otherwise miss in an audio-only format. Participants felt that **hearing about the cover helped set the tone and expectations for the book**, similar to how a reader would absorb visual details before diving into the content.

The cover description immediately gave me insight into the book, such as indicating that it was a collection of poetry." (Francophone Survey Answer, translated)

"The cover description allows all users to 'judge the book by the cover' and imagine what the story will be about." (Anglophone Survey Answer)

"The cover can give you information about the theme or concepts of the book." (Anglophone Survey Answer)

##### **Supporting Accessibility**

Participants with print disabilities overwhelmingly valued cover descriptions, noting that **they provide an equal opportunity to engage with the book’s visual elements**. Some users, particularly those who had previously had sight, expressed appreciation for the ability to **form a mental image of the cover**, while others felt that **additional details—such as color, lighting, and artistic style—could further enhance the experience**.

"I am completely blind, but I had sight until I was 18. I know what colors and objects look like. Having the same opportunity to know what the cover of a book looks like as my sighted friends is nice. For example, the description said: 'There are clotheslines hanging between the two buildings, with clothes hanging off them.' But I would’ve liked to know if it was a red shirt, blue jeans, lingerie, etc. What color was the sky? Was it during sunset? Was it bright blue? I like a lot of details, but I know other people don’t. Either way, having the cover described is very interesting and useful!" (Anglophone Survey Answer)

"I appreciate having a description of the cover. I am not visually impaired but often listen to audiobooks while walking and can’t look at my phone. I like having the visual with the audio. It’s even more important for someone who is visually impaired to have access to the cover art." (Anglophone Survey Answer)

##### **Foreshadowing and Thematic Depth**

Beyond accessibility, some participants saw **cover descriptions as a storytelling tool** that can subtly **foreshadow themes, emotions, or narrative elements**.

"A cover can give you a hint about the mood or deeper themes of a book." (Anglophone Survey Answer)

**Concerns About Cover Descriptions**

While many participants valued cover descriptions, **a significant minority found them unnecessary or distracting**, particularly when they could already see the cover or when the description **disrupted the natural flow of the audiobook**.

#### ****No Added Value for Sighted Readers****

For some **sighted** cover descriptions were perceived as redundant.

"I could already see the cover, so it didn’t add anything for me." (Anglophone Survey Answer)

"I choose audiobooks based on the synopsis, not the cover." (Anglophone Survey Answer)

##### **Disruption to the Listening Experience**

Some users **found the narration of cover descriptions distracting**, particularly if the **tone of voice changed** or if the descriptions were **lengthy and overly detailed**.

##### **Minimal Visual Content on Certain Covers**

Not all book covers are visually complex, and some participants questioned the necessity of describing **simple or text-heavy covers**.

"The description seemed unnecessary when the cover was just simple text." (Anglophone Survey Answer)

### Preferences for Cover Descriptions Based on Cover Type

Table 23 Preferences for Cover Descriptions Based on Cover Type

|  |  |  |  |
| --- | --- | --- | --- |
| **Preference for Descriptions** | **Respondent (FR) % (Proportion)** | **Respondent (EN) % (Proportion)** | **Total % (Proportion)** |
| All book covers should be described | 27.3% (3/11) | 52.8% (19/36) | 46.8 % (22/47) |
| Only book covers with extensive artwork should be described | 72.7% (8/11) | 25.0% (9/36) | 36.2 % (17/47) |
| I don’t want cover image descriptions | 0.0% (0/11) | 11.1% (4/36) | 8.5% (4/47) |
| I don’t know / No preference | 0.0% (0/11) | 11.1% (4/36) | 8.5% (4/47) |

#### Quantitative Insights

**General preference for comprehensive descriptions:**

46.8 % (22/47) of participants preferred that **all book covers** be described, regardless of whether they primarily contained text or illustrations. This highlights a significant demand for comprehensive descriptions, emphasizing inclusivity and accessibility.

**Support for selective descriptions:**

36.2 % (17/47) of participants favored descriptions only for covers with extensive artwork, suggesting that for some, descriptions of simple or text-based covers may be considered unnecessary or redundant.

**Minor opposition:**

Only 8.5% (4/47) of participants stated that they did not want cover descriptions at all, and another 8.5% (4/47) expressed no preference. This shows that outright rejection of cover descriptions is relatively rare.

### Perceptions of Cover Image Description from Participants With and Without Print Disabilities

Table 24 Cover Image Description from Participants With and Without Print Disabilities

|  |  |  |
| --- | --- | --- |
| **Response** | **With Print Disabilities (EN/FR) % (Proportion)** | **Without Print Disabilities (EN/FR) % (Proportion)** |
| Very useful | 46.4% (13/28) | 38.9% (7/18) |
| Somewhat useful | 14.3% (4/28) | 22.2% (4/18) |
| Not useful at all | 14.3% (4/28) | 5.6% (1/18) |
| I didn’t think it was needed | 25.0% (7/28) | 16.7% (3/18) |
| I don't know | 0.0% (0/28) | 16.7% (3/18) |

#### Quantitative insight

**Participants with print disabilities**: For this group, approximately 60.7% (13/28 + 4/28) of respondents rate cover image descriptions positively. However, a substantial 39.3% (4/28+ + 7/28 consider the descriptions either not useful or unnecessary. Notably, none of these respondents expressed uncertainty.

**Participants without print disabilities**: In this group, a combined 61.1% (7/18 + 4/18%) rate the descriptions positively, but the distribution is more moderate—with a notable 16.7% expressing uncertainty and a total of 22.3% (3/18 + 3/18%) giving negative responses.

I appreciate having a description of the cover. I am not visually impaired but am often walking when listening to audiobooks and not able to look at my phone/screen, I like having the visual with the audio. (Anglophone Survey Answer, people without print disability).

Respondents with print disabilities are more likely to consider cover image descriptions as "very useful" (46.4% vs. 38.9%), underscoring their importance as an accessibility feature. The lack of any "I don't know" responses in this group also suggests that these users have a clear stance on the matter.

Participants with print disabilities emphasized consistent accessibility, requesting key visual details such as color, typography, and composition.Participants without print disabilities focused on brevity and seamless integration, particularly when they could already see the cover.

Both groups suggest that cover descriptions can be valuable but should be offered as an optional feature. For users with print disabilities, detailed descriptions (highlighting elements such as color, typography, and composition) are crucial for accessing visual content. For others, the option to skip or customize the level of detail may better accommodate diverse listening preferences.

### Discussion of Results: Cover Image Descriptions in Audiobooks

The findings on cover image descriptions in audiobooks reveal a divergence in user preferences, with a clear accessibility benefit for individuals with print disabilities but no universal demand across all listener groups. The data suggests that while a slight majority (58.3%, 28/48) of participants preferred audiobooks with cover descriptions.

#### Accessibility and the Role of Cover Descriptions

For listeners who are blind or have low vision, cover descriptions serve a crucial function in providing equitable access to the visual aspects of a book. Several participants emphasized that knowing what a book cover looks like helps them engage with the book on the same level as sighted readers. The responses align with broader accessibility principles, which emphasize the importance of descriptive content in making media fully inclusive. This parallels other accessibility features, such as image descriptions in digital content and alternative text in web design, which allow users to interpret visual elements non-visually.

Additionally, some sighted participants reported that cover descriptions were beneficial in situations where they were unable to look at their device screen—such as when walking, driving, or engaging in other activities while listening to an audiobook. This suggests that the value of cover descriptions extends beyond accessibility needs, potentially enriching the audiobook experience for all users.

#### Variability in User Preferences

Despite the accessibility advantages, a significant portion of participants did not perceive cover descriptions as essential. About 27.1% (13/48) of respondents preferred audiobooks without cover. A further 14.6% (7/48) expressed no strong preference, indicating that for many users, the presence or absence of a cover description is not a decisive factor in audiobook enjoyment. This suggests that the relevance of cover descriptions may vary based on factors such as genre, cover complexity, and listener habits.

### **Summary: Cover Image Descriptions in Audiobooks**

The findings demonstrate that cover descriptions provide clear accessibility benefits for readers with print disabilities, but also for those without print disabilities. However, they are not universally necessary for all users. While their inclusion is valuable for listeners with print disabilities, a portion of the general audience either does not require them or prefers the option to skip them.

#### Key Findings

* **Majority Preference for Cover Descriptions:** 58.3% (28/48) preferred audiobooks with cover descriptions, citing accessibility and added context.
* **Accessibility Advantage**: 60.7% (17/28) of respondents with print disabilities found cover descriptions useful, emphasizing their role in equitable access.
* **Situational Usefulness:** 46.8% (22/47) supported descriptions only for covers with extensive artwork, while 36.2% (17/47) preferred descriptions for all covers.
* **Potential Barriers:** Some listeners found descriptions redundant when the cover was visible, disruptive to audiobook flow, or unnecessary for text-based covers.

## F) Image Descriptions

### Introduction

Image descriptions in audiobooks are essential for enhancing accessibility, particularly for listeners with print disabilities. These descriptions provide vital details about visual elements—such as tables, charts, and images—that might otherwise be missed by listeners. This section of the study aimed to assess the impact of different formats for delivering image descriptions on user comprehension, satisfaction, and overall listening experience. The study explored which approach better supports user preferences and comprehension, with insights informing future design recommendations for accessible audiobooks.

### Methodology Considerations

Anglophone participants listened to two versions of an audiobook sample to assess preferences for image description placement:

* **Audiobook Sample:** *Rule of 30* by Frederick Vettese, a financial guide featuring tables, graphs, and data essential for understanding financial concepts.
* **Version 1:** Image descriptions embedded directly within the text (in-place).
* **Version 2:** Image descriptions located in a separate section of the audiobook, referenced during the narration.

This comparison was designed to evaluate whether participants preferred having descriptions integrated seamlessly within the narrative or accessed separately, allowing for better comprehension and navigational control.
Francophone participants listened to one audiobook sample to evaluate the level of detail, usefulness, and accessibility of the embedded image descriptions:

* **Audiobook Sample:** *Jamais Trop Tôt Pour Arnaud* by Liliane Boucher, a children’s book with story-enhancing illustrations integrated into the narration.
* **Special Consideration:** Unlike the typical objective and concise descriptions found in informational or academic content, this sample used creative, descriptive language tailored for children to convey the visual experience more fully. Produced by Fonfon, a publisher with expertise in accessible children’s audiobooks, the descriptions aimed to engage young audiences while maintaining accessibility.

Due to the significant differences between the Anglophone and Francophone samples—both in terms of content and target audience—many survey questions were analyzed separately by language group. Where appropriate, responses from the two groups were aggregated to identify common trends. When findings diverged significantly due to the nature of the audiobook content, these differences were highlighted and carefully considered in the recommendations.

### Preference for Sample with Integrated or Embedded Image Description Placement

Table 25 : Preference for Image Description Placement (In-Place vs. Separate File)

|  |  |
| --- | --- |
| Audiobook Sample Preference (Anglophone Participants) | **Respondants % (Proportion)** |
| Option 1: Prefer "Rule of 30" with images described in place | 91.4% (32/35) |
| Option 2: Prefer "Rule of 30" with images in a separate file | 5.7% (2/35) |
| No preference | 2.9% (1/35) |
| I don’t know | 0.0% (0/35) |

#### Quantitative Insights

**Overwhelming Preference for Embedded Descriptions**

* The vast majority 91.4% (32/35) preferred image descriptions integrated directly within the audiobook's narration, citing a smoother and more intuitive listening experience.

**Limited Support for Separate Files**

* Only 5.7% (2/35) preferred descriptions in a separate file, primarily because they valued having them as an optional reference rather than an integral part of the listening experience.

**Minimal Indifference**

* A very small portion 2.9% (1/35) had no preference, while no respondents expressed uncertainty.

#### Qualitative Insights

Analysis of the qualitative data revealed four key themes regarding the placement of image descriptions in audiobooks: narrative continuity, multitasking constraints, comprehension, and navigation challenges. Participants overwhelmingly emphasized the need for a seamless listening experience, expressing frustration with solutions that required manual navigation between sections.

**Narrative continuity**

Listeners emphasized the importance of maintaining a natural storytelling flow. Switching to a separate section was perceived as disruptive and frustrating.

“I don’t like having to go to a different section to get information. […] It makes it not flow as well.” (Anglophone Survey Answer)
“Too disruptive to move between the two.” (Anglophone Survey Answer)

**Multitasking Constraints**

Many audiobook users engage in multitasking activities such as driving, exercising, or household chores while listening. For these users, requiring manual navigation between sections was impractical—if not impossible—as it interrupted their primary task and broke engagement with the book.

“I am often doing something else while listening to an audiobook and would be unable to stop and navigate back and forth to image descriptions. In fact the thought of this frustrates me and I would be unlikely to read a book with separate image descriptions, or would not navigate back and forth, which would lead to a diminished understanding of the content. (Anglophone Survey Answer)

**Comprehension**

Participants reported that navigating between sections increased cognitive effort and reduced understanding. Embedded descriptions provided real-time clarity.

 “It is much easier to comprehend when you aren’t moving back and forth through audio sections.” (Anglophone Survey Answer)

**Navigation Challenges**

Listeners using screen readers or other assistive technologies found it difficult to switch sections without losing track of their place in the book.

“Trying to navigate the audio back-and-forth between chapters is too complicated with a screen reader.” (Anglophone Survey Answer)
“I don’t like having to flip between sections, and when I do, it doesn’t save where I was in the previous section.” (Anglophone Survey Answer)

it's a hassle to go back and forth. I'd rather just skip if I don't want to listen to the information. (Anglophone Survey Answer)

### Impact of Image Descriptions on Enjoyment and Understanding

Anglophone Participants were asked whether the inclusion of image descriptions added to their enjoyment or understanding of the audiobook. Out of 35 respondents, the majority 74.3%(26/35) agreed that the image descriptions significantly enhanced their experience. Only 5.7% (2/35) reported that the descriptions detracted from their enjoyment or comprehension.

Francophone participants were asked whether the inclusion of image descriptions helped them better appreciate or understand the audiobook content. Out of 11 respondents, 81.8% (9/11) indicated that the descriptions had a positive impact, while 18.2% (2/11) noted that they detracted from their comprehension or enjoyment.

### **Ability to Distinguish Main Text from Image Descriptions**

* Most participants -- 56.5% (26/46) found embedded descriptions easily distinguishable, indicating that integrating image descriptions within the audiobook generally worked well.
* However, 43.5% (20/46) of respondents experienced some difficulty, highlighting the need for clearer cues to differentiate descriptions from the main text.
* No respondents reported being completely unable to distinguish between the two.

#### Qualitative Insights

**Need for clear cues**

Lack of **explicit signals** (e.g., tone changes, pauses) made transitions difficult to follow.

“Without clear breaks or cues, I occasionally got confused about whether I was still listening to the main content or a description.” (Anglophone Survey Answer)
“At the beginning of the chapter, the word « description » was not mentioned, which made understanding difficult.” (Francophone Survey Answer, Translated)

**Suggested Improvements**

Participants recommended using **distinct narrator tones, voice changes, or short cues** to improve clarity.

“A change in voice or a short cue would make it much easier to follow the transition between descriptions and text.” (Anglophone Survey Answer)
“Using a different voice or sound cues would be ideal to better distinguish the descriptions and the main text.” (Francophone Survey Answer, translated)

### Importance of Image Descriptions

Table 26 Table Importance of Image Descriptions

|  |  |  |  |
| --- | --- | --- | --- |
| **Importance Level** | **Respondent (FR) % (Proportion)** | **Respondent (EN) % (Proportion)** | **Total % (Proportion)** |
| Not important | 9.1% (1/11) | 0.0% (0/35) | 2.2% (1/46) |
| Slightly important | 9.1% (1/11) | 14.3% (5/35) | 13.0% (6/46) |
| Moderately important | 9.1% (1/11) | 20.0% (7/35) | 17.4% (8/46) |
| Important | 36.4% (4/11) | 34.3% (12/35) | 34.8% (16/46) |
| Very important | 36.4% (4/11) | 31.4% (11/35) | 32.6% (15/46) |

Both Francophone and Anglophone participants strongly rated image descriptions as **important**or **very important** 72.7% (8/11) of Francophones, 65.7 % (23/35) of Anglophones), showing broad agreement across language groups.

 “Images speak as much as text, if not more. Their purpose should not be neglected.” (Francophone Survey Answer, translated)

“Image descriptions tie in things that are happening and add to the story. They are a necessary piece, even if it’s just a quick description.” (Anglophone Survey Answer)

**Flexibility and context related**

Participants suggested that image descriptions should be embedded within the text in most cases, but long or complex visuals (e.g., spreadsheets, large tables) could be placed separately with user-controlled options for navigation.

* + “If the description is too long, there could be a brief version in the text and a more detailed one available separately.” (Anglophone Survey Answer)

**User navigation**

“Il serait utile de pouvoir sauter les descriptions si elles ne sont pas nécessaires à ce moment-là.” (It would be useful to be able to skip the descriptions if they are not necessary at that moment.) (Francophone Survey Answer)

**“I love the idea. This is a reason I've not listened to some specific nonfiction books and have had to read them in print instead, so I could know what the images said.”** (Anglophone Survey Answer)

### Discussion of Results

The study revealed a strong preference for embedded image descriptions, with the vast majority of participants, 91.4% (32/35) in the Anglophone test, favoring descriptions integrated directly within the narration. Participants cited ease of listening, improved comprehension, and uninterrupted engagement as key benefits of this approach. This preference was echoed in qualitative feedback from Francophone participants, reinforcing the idea that integrating descriptions seamlessly into the narrative enhances the overall user experience.

Beyond preference, image descriptions were found to significantly improve understanding. Most participants, 74.3% (26/35) in the Anglophone test and 81.8% (9/11) in the Francophone test) reported that having descriptions included in the audiobook enhanced their appreciation and comprehension of the content. These findings highlight the importance of well-structured and clearly delivered descriptions in making audiobooks more accessible and informative.

However, the study also identified challenges in distinguishing image descriptions from the main text. While 56.5% (6/11) of participants were able to differentiate descriptions with ease, 43.5% (14/35) reported some level of difficulty, underscoring the need for clearer cues or narration strategies to mark transitions between descriptive content and the primary text.

Thematic analysis further highlighted that placing descriptions in a separate file or section introduced significant accessibility barriers. Participants found that this approach disrupted the narrative flow, created navigation difficulties, and increased cognitive load, particularly for those who multitask while listening or use assistive technologies. These findings reinforce the necessity of keeping descriptions within the main audiobook structure while ensuring that they are clearly distinguishable for optimal comprehension and accessibility.

#### Challenges in the Current Audiobook Industry

Despite the clear benefits for accessibility, **image descriptions are rarely included in commercial audiobook production**. As industry stakeholders noted, **there is currently no standardized practice for describing images in audiobooks**, meaning most productions either **omit descriptions entirely or handle them inconsistently**.

"In general, images are rarely or not at all described in commercial audiobook production. This would be a manageable addition in production, but there is a great need for clear guidelines and oversight to ensure it is done correctly." (Joanie Tremblay, translated)

This feedback highlights a **key industry challenge**—while it is **technically feasible** to integrate image descriptions into audiobooks, the **absence of clear guidelines and standardized frameworks** makes implementation **inconsistent** across publishers and production teams.

Furthermore, industry feedback from Wendy Reid (Rakuten Kobo) suggests that audiobook players currently lack the functionality to handle image descriptions dynamically, similar to the challenges faced with footnotes and endnotes. This technological gap means that listeners currently do not have the ability to skip, toggle, or interact with image descriptions in a flexible way.

Given that user preferences strongly favor **embedded descriptions**, and that image descriptions are **technically feasible in production**, the **next step for the industry is to develop structured guidelines for their implementation**. Without such guidance, descriptions risk being **inconsistent, overly detailed, or omitted altogether**.

#### ****Building on Existing eBook Image Descriptions****

A potential solution for audiobook production is to **leverage existing image descriptions from eBooks**. Publishers already create **alternative text (alt-text) and extended descriptions**for eBooks to comply with **accessibility standards (such as WCAG and EPUB3 guidelines)**. These descriptions could serve as a **foundation for audiobook image descriptions**, reducing the need to create them from scratch.

However, **it is necessary to evaluate whether eBook image descriptions require adaptation** before being used in audiobooks.

### Summary: Image Descriptions in Audiobooks

Integrated image descriptions significantly improve accessibility and comprehension, particularly for listeners with and without print disabilities. However, clear verbal cues and flexible navigation options are essential to optimize the experience for all users.

**Key Findings**

* **Strong Preference for Embedded Descriptions:** 91.4% (32/35) of Anglophone participants preferred image descriptions integrated into the main text for smoother comprehension and ease of access.
* **Image Descriptions Enhance Understanding:** 74.3% (26/35) of Anglophones and 81.8% (9/11) of Francophones reported that descriptions improved their enjoyment and comprehension.
* **Importance of Image Descriptions:** 72.7% (8/11) of Francophones and 65.7% (23/35) of Anglophones rated them as important or very important for accessibility.
* **Challenges in Differentiation:** 43.5% (20/46) of users had difficulty distinguishing image descriptions from the main text, emphasizing the need for clearer transitions.
* **Need for Context-Dependent Placement:** While embedded descriptions were favored, long or complex visuals (e.g., spreadsheets) may be better suited for separate sections.

## G) Music and sound effects

### Introduction

The integration of music and sound effects in commercial audiobooks is an emerging trend aimed at enhancing the listening experience. While music is traditionally used at the beginning, end, or at key moments to establish mood and signal transitions, sound effects such as ambient noises and action-based sounds are designed to create a more immersive narrative. These auditory elements can add emotional depth, enrich storytelling, and simulate real-world environments, making the listening experience more engaging. However, their impact on listener comprehension and overall enjoyment varies, depending on factors such as the intensity, frequency, and placement of these effects. This section examines how music and sound effects influence user engagement, cognitive load, and listener preferences.

### Methodology Considerations

The study tested two audiobook samples, each featuring a different approach to sound design:

* **Anglophone Sample: The Mighty River** – This audiobook incorporated continuous background music and frequent sound effects, including animal and environmental sounds, to create a highly immersive auditory experience.
* **Francophone Sample: Jules et Jim** – In contrast, this audiobook used a minimalist approach, featuring only short introductory music and sparse sound effects, resulting in a more traditional and uninterrupted narration.

These distinct sound design choices influenced participant responses, with separate insights provided for each language group where necessary.

The **Anglophone audiobook’s frequent and layered sound effects** appeared to enhance engagement for many listeners but also led to reports of cognitive overload for some, particularly in complex scenes where multiple audio elements were layered together. The **Francophone audiobook’s minimal use of sound enhancements** allowed the narration to remain central, offering a smoother listening experience with fewer reported distractions.

Given these fundamental differences in design, **direct comparisons between the two groups are limited**. Instead, findings are analyzed within each language group to provide nuanced insights into how music and sound effects shape the audiobook experience.

### Francophone-Specific Analysis: Preference for Sample with or without Music

Participants in the Francophone-language test were asked about their preferences regarding the inclusion of music in audiobooks.

Table 27 Preference for Audiobooks With or Without Music (Francophones)

|  |  |
| --- | --- |
| **Response** | **Respondent (FR) % (Proportion)** |
| Preferred the version with music | 63.6% (7/11) |
| Preferred the version without music | 18.2% (2/11) |
| No preference / Don’t know | 18.2% (2/11) |

#### Quantitative Insights

A majority of respondents 63.6% (7/11) favored the inclusion of music in audiobooks in the sample, while a smaller portion 18.2% (2/11) found it unnecessary or distracting.

Table 28 Did the Music Enhance Your Experience? (Francophone)

|  |  |
| --- | --- |
| **Response** | **Respondent (FR) % (Proportion)** |
| Yes, the music helped me better appreciate or understand the book. | 45.5% (5/11) |
| Neutral – the music neither improved nor diminished my experience. | 18.2% (2/11) |
| No, the music prevented me from enjoying or understanding the book. | 27.3% (3/11) |
| I did not notice the music or did not form an opinion about it. | 9.1% (1/11) |

While nearly half of the participants found that music improved their experience, 27.3% (3/11) found it distracting. This highlights the **subjectivity of music in audiobooks**—for some, it enhances the mood and engagement, while for others, it disrupts the flow of narration.

#### Qualitative Insights -- Francophone Participants

* “Music draws attention to the work.” (Francophone survey answer, translated)
* “I find that some musical segments are too long.” (Francophone survey answer, translated)
* “ Music and sound effects add to the reading experience.” (Francophone survey answer, translated)

### Anglophone-Specific Analysis: Preference for Sample with or without Sound Effects

The Anglophone-language test focused on the impact of **sound effects** on listener enjoyment and comprehension.

Table 29 Did Sound Effects, in the Mighty River, Enhance Your Enjoyment or Understanding?

|  |  |
| --- | --- |
| **Response** | **Respondent (EN) % (proportion)** |
| Yes, sound effects enhanced my experience | **80.0% (28/35)** |
| Neutral | **11.4% (4/35)** |
| No, sound effects were distracting | **8.6% (3/35)** |

A large majority -- 80.0% (28/35) -- reported that sound effects positively contributed to their experience, particularly when tied to the narrative, such as animal sounds in The Mighty River. However, a small number -- 8.6% (3/35) - found them distracting.

When asked about the combination of **image descriptions and sound effects,** responses were mixed. While some participants found the combination immersive, others reported that**layering multiple audio elements together created cognitive overload.**

#### Qualitative insights

* “I found the combination of sound effects and multiple narrators confusing.”
* “Overlaying sounds were distracting—the animal sound effects and the narrators speaking together made it difficult to understand.”
* “The sound effects helped me visualize the scenes and understand the mood better.”
* “I really enjoyed the sound effects and found they helped me begin to envision what was happening in the book.”

### Discussion of results

The findings reinforce that music and sound effects can enhance immersion, comprehension, and engagement in audiobooks, but their effectiveness depends on their integration, listener preferences, and cognitive load considerations. While many listeners appreciate these auditory enhancements, others may find them distracting or disruptive, particularly when sound elements are layered with narration.

### Additionally, some participants who use higher playback speeds found that sound effects did not always scale well, creating a jarring listening experience. This highlights the need for carefully balanced audio design, ensuring that enhancements remain effective at different listening speeds.Industry and Technological Considerations: The Role of Personalization

Industry feedback from Wendy Reid (Rakuten Kobo) suggests that personalization features within audiobook players could address these varied preferences. By providing user-controlled settings, platforms could allow listeners to:

* Toggle sound effects and background music on or off, ensuring that users who prefer uninterrupted narration can disable additional audio elements.
* Adjust volume levels for background audio to reduce distractions while maintaining immersive elements.
* Select different audio tracks for versions with or without sound effects, giving users greater flexibility.

However, as Wendy Reid (Rakuten Kobo) highlights, these features depend on publishers providing properly structured content. If music and sound effects were included as separate, secondary audio tracks, users could customize their experience without compromising the integrity of the narration. This approach would require standardization in audiobook production to ensure that players can support these personalization features seamlessly.

### Enhancing Content Discovery and User Choice

Since most current audiobook platforms do not provide customizable sound settings, clear metadata and catalog descriptions become essential. Participants emphasized that knowing in advance whether a book includes music and sound effects would help them make an informed listening choice. Some listeners preferred not to start a book with sound effects at all, while others appreciated knowing in advance whether the sound design matched their preferences.

### Summary: Music and Sound Effects in Audiobooks

Music and sound effects can enhance engagement when used strategically, but preferences vary. Moving forward, personalization features within audiobook players—such as sound effect toggles, volume control, and alternative tracks—could help bridge these differences. However, implementing such features depends on publishers providing structured content that allows for dynamic user control. Until then, clear metadata and catalog descriptions remain essential, ensuring that listeners can make informed choices about the auditory enhancements in their audiobooks.

#### Key Findings

* **Francophone Listeners Favor Music:** 63.6% (7/11) preferred audiobooks with music, but 18.2% (2/11) found it distracting, showing subjective reception.
* **Anglophone Listeners Appreciate Sound Effects:** 80% **% (28/35)** found sound effects enhanced their experience, though 8.6% found them distracting.
* **Cognitive Load Concerns:** Some listeners struggled with layered audio elements, particularly when combined with narration. Some listeners talk about compatibility issue with higher speed mode of listening.
* **Immersion vs. Distraction:** While many found music and sound effects enriching, others preferred uninterrupted narration.

## General Reading and Audiobook Questions

This section presents general questions about audiobook preferences. The results are based on survey data, which includes both qualitative responses (open-ended details provided by respondents) and quantitative data(numerical results). The findings have been cross-referenced with focus group discussions, incorporating direct quotes from participants that align with the survey results.

### Additional Information Desired in Audiobook Catalogs

Participants were asked what extra details they would like in audiobook catalogs beyond the usual author, narrator, and summary. The responses highlight a strong interest in more comprehensive metadata.

* **62%** wanted to know if the audiobook included sound effects.
* **53%** wanted image descriptions within the text.
* **49%** were interested in cover image descriptions.
* **40%** found footnotes or endnotes relevant.
* **33%** wanted information about front and back matter, such as a preface or bibliography.
* **24%** wanted a narrated table of contents.
* **27%** were interested in knowing whether the audiobook’s content differed from the print version.
* Only **2%** said they did not want any of these features included.

These findings suggest that many listeners value greater transparency about an audiobook’s structure and content. Features like sound effects and image descriptions are particularly important, likely for accessibility reasons or personal listening preferences. A small but notable percentage also expressed interest in understanding content variations between the print and audio versions.

### Perceptions of AI-Narrated Audiobooks

When asked whether they had ever listened to an audiobook narrated by artificial intelligence (AI), respondents showed a mixed level of awareness and experience. Among the 50 participants, 26% confirmed they had listened to an AI-narrated audiobook, while 40% stated they had not. A significant portion—34%—were unsure, suggesting that many audiobook listeners may not always recognize when a book is narrated by AI unless explicitly informed. Among respondents with experience listening to AI-narrated audiobooks, opinions varied.

Many acknowledged the technology's limitations, though some noted its gradual improvement. Some listeners felt that AI narration still lacks emotional depth and expressiveness. Several respondents described AI-generated speech as monotone, robotic, or lacking the dynamic range that makes human narration more engaging. One participant stated that the synthetic voice made it difficult to connect with the story, while another found the absence of emotional variation made it harder to immerse in the audiobook.

Others considered AI narration an improvement over traditional text-to-speech systems but still far from a viable alternative to human narration. One respondent described AI-generated voices as “a more sophisticated robot,” while another noted that although AI narration is “better than nothing,” it still lacks the natural inflections and intonations that enhance storytelling.

I've been kind of forced once or twice to have to listen to AI with audiobooks, especially if I was doing a series of books and, for me it kind of just took away the enjoyment of the book. (Anglophone Focus Group)

 Some listeners recognized that AI voices have improved significantly, particularly with newer applications. One respondent, who had used an AI-based reading tool, noted that while the voices were functional, they were still prone to glitches and lacked the emotional nuance of a human narrator.

An issue raised was the lack of clear labeling for AI-generated audiobooks. Some listeners reported that they were unaware they were listening to AI narration until encountering external sources mentioning it. This suggests that greater transparency in labeling is needed to manage listener expectations, as some may assume an audiobook is human-narrated and feel disappointed upon discovering otherwise.

“If one added AI integration, it might cause problems with the ethic that states that normally a book should be narrated by a human. But, at the same time, so many books could be produced quickly…” (Francophone Focus Group, translated)

“In the last few months, Radio Canada has added reader functionality based on AI that is not perfect for article’ but that I really like very much. If one could have access to that level of quality and customisation, if one could have access to the text and have a tool that would generate automatic (narration of this quality, I’d be on board with that.” (Francophone Focus Group, translated)

"I think that in some cases, I prefer having access to a synthetic voice rather than being forced to listen to a narrator that I cannot bear.” (Francophone Focus Group, translated)

#### The Importance of Audio Quality in Audiobooks

The overwhelming majority of audiobook listeners place a high value on audio quality, with 94% of respondents stating that it is either “important” or “very important.” Among them, 66% rated it as “very important,” while 28% considered it “important.” Only a small percentage (4%) found audio quality to be “moderately important,” and just 2% said it was “not important.” with 94% of respondents stating that it is either “important” or “very important

These findings highlight the significant role that high-quality audio plays in the audiobook experience. Listeners expect a polished, professional production that allows them to fully engage with the content without distractions.

#### What Defines Good Audio Quality?

For most audiobook listeners, high-quality production means:

* **Clear narration** with proper pronunciation and pacing.
* **No background noise** to avoid distractions.
* **Professional production** to ensure a smooth listening experience.

Listeners often favor audiobooks that meet these criteria, as poor-quality recordings can make it difficult to focus on the content and diminish overall enjoyment.

#### Impact of Poor Audio Quality

Given that almost all respondents prioritize good sound production, audiobooks with low-quality narration—such as robotic voices, background noise, or uneven volume—are likely to discourage listeners. Many audiobook readers may stop listening to or avoid purchasing titles that do not meet high production standards.

I had bad experiences with old audiobooks that have been converted from tape, and so the quality of the audio is not necessarily the best—like a hiss in the background. (Anglophone, Focus Group)

Sometimes CELA books sound a bit muffled… like they’ve been compressed too much." (Anglophone Focus Group)

Audio quality is a fundamental aspect of the audiobook experience, with the vast majority of listeners expecting professional production. As the audiobook industry continues to expand, maintaining high-quality recording and narration standards remains essential to ensuring listener satisfaction and engagement. Some participants in the focus group expressed that, while synthetic voices are not their preference, they sometimes prefer them over a poorly narrated or low-quality audiobook.

###  How People Engage with Audiobooks

#### Listening Habits and Multitasking

Audiobooks offer flexibility in how they are consumed, and most listeners incorporate them into their daily routines rather than dedicating uninterrupted time to listening. The survey results show that 70% of respondents listen to audiobooks while completing other tasks, such as housework, cooking, or engaging in hobbies. This suggests that for many, audiobooks serve as a way to make mundane or repetitive activities more enjoyable.

"I listen to it all the time I can—when I’m walking the dogs three times a day, when I’m preparing supper alone in the kitchen. If I know something good is coming next, I just pop my earbuds in. I even bought a second set of cheap earbuds so there’s always a charged pair ready. I’m probably going through three books a week—and loving it." (Anglophone Focus Group)

Similarly, 66% of respondents listen to audiobooks while commuting, whether walking, driving, or using public transportation. This highlights the convenience of audiobooks for people who want to read while commuting.

“Books like The Da Vinci Code and that kind of stories really grab me. I remember that after reading my first book by this author, I was captivated. At that time, I was taking long car trips, and there were times when I arrived at my destination… without getting out of the vehicle, just to finish the CD.” (Francophone Focus Group, translated)

#### Focused vs. Multitasking Listening

While most respondents listen while multitasking, **54% stated that they sometimes listen to audiobooks intently, without any other distractions or tasks.** This suggests that while many people enjoy incorporating audiobooks into other activities, there are times when they prefer to engage more deeply with the content, depending on the book or their environment.

" I don't play the audiobook in the background while I do a bunch of chores. For that, I'll just put music on." (Anglophone Focus Group)

 " Unless it’s a book that’s not too engaging, then yes, I can do other things at the same time. But honestly, I’ve tried listening while doing the dishes and all that… and with the noise, I miss parts. In the end, I really prefer just reading, because it fully occupies my mind. An author took the time to write a book, so we should give it our full attention.” (Francophone Focus Group, translated)

Additionally, 42% said that their listening habits depend on the situation or the type of book. This flexibility shows that different genres and styles of audiobooks may encourage different listening behaviors. A complex non-fiction book may require more focus, while a light novel or familiar content might be easier to enjoy while multitasking.

### Other Unique Listening Habits

A small portion of respondents (10%) selected "Other," indicating that they engage with audiobooks in ways not covered by the primary categories**.** These includeusing audiobooks as a sleep aid, listening at increased speeds for efficiency, or alternating between audio and text formats**.**

One participant described how audiobooks are an integral part of their relaxation routine, stating:

"I love listening in the bathtub—it's my way of winding down after a long day." (Anglophone Survey Answer)

Similarly, another respondent highlighted the role of audiobooks in nighttime routines, explaining:

These responses suggest that for some individuals, audiobooks serve not only as a means of consuming content but also as a tool for relaxation and personal well-being**.**

**Social and Shared Audiobook Experiences** : Some respondents reported engaging inshared listening experienceswithpartners, family members, or friends**.** One participant noted:

" Sometimes my partner and I listen together and then we can talk about the book together and share (which otherwise would not happen since we both don't read print books)." (Anglophone survey Answer)

This highlights how audiobooks can be integrated into social interactions, fostering shared experiences similar to watching films or listening to podcasts collectively**.**

**Pairing Audiobooks with Hobbies and Creative Activities** : Audiobooks are frequently paired with hands-on activities that do not require full cognitive engagement. One respondent described how audiobooks enhance their leisure time:

" Quite often when I am reading an audiobook I play games like sudoku or Mahjong "(Anglophone Survey Answer)

**Multimodal Reading :** Some respondents prefer reading along with an audiobook**,** particularly for non-fiction or educational purposes, as it enhances retention and comprehension. One participant described this experience:

" I have ADHD and find it very useful sometimes to follow along with print while listening. " (Anglophone Survey Answer)

Another respondent emphasized the benefits of simultaneous reading and listening for learning:

" I am a teacher so I have liked having both print and audiobook available for referencing certain parts of the book and to give students options for how they prefer to take in the information. " (Anglophone Survey Answer)

These responses suggest that multimodal reading enhances engagement, allowing listeners to reinforce learning, improve comprehension, and maintain focus while engaging with audiobooks.

#### Conclusion

Audiobook listening habits vary widely, with most people integrating them into their daily lives rather than setting aside dedicated time. Multitasking is the most common approach, whether during household chores, commuting, or engaging in hobbies. However, some listeners prefer a focused experience depending on the content, and others find unique ways to incorporate audiobooks into their leisure and social activities. The flexibility of audiobooks makes them an accessible and convenient format for different lifestyles and preferences.

### How Listeners Use Audiobook App Features

Beyond simply playing an audiobook, many listeners take advantage of additional app features to customize their experience. Among the surveyed respondents, 82% adjust playback speed, making it the most widely used feature. This suggests that many audiobook users prefer to control the pace of narration, whether to speed up content for efficiency or slow it down for better comprehension.

"[Commercial platform] has its limitations—like how it only allows overall speed control, whereas with Voice Dream Reader, I can set a different speed for each book. That’s why I like using different platforms; I can keep it at roughly 1.15x or whatever works best. Some narrators actually read at a decent clip, but I think a lot are slowed down by audiobook companies—no one naturally reads that slowly, right? That’s the beauty of speed control: when I hit a passage I’m not too interested in, I just triple the speed—kind of like skimming through a book—then slow down again when it gets engaging." (Anglophone Focus Group)

Other commonly used features include:

* **Placing bookmarks (64%)** – Many listeners save key moments in a book to revisit later.
* **Navigating to different sections of the book (60%)** – This feature helps users jump between chapters or key points instead of fast-forwarding manually.
* **Using a sleep timer (44%)** – This is particularly useful for listeners who enjoy audiobooks before bed.
* **Time jump (32%)** – Allows users to skip forward or backward by a set amount of time.
* **Adjusting the tone of the audio (24%)** – While less commonly used, this feature allows listeners to modify the narrator’s voice settings.
* **Taking notes (12%)** – Some users make notes within the app, particularly for non-fiction or study purposes.

#### Additional Ways Listeners Engage with Audiobooks

A small percentage (14%) of respondents reported using features beyond the standard options. Their responses highlight additional ways in which audiobook users customize their experience:

* **Wishlist and tracking:** Some listeners save audiobooks to a wishlist for future reading and mark books as completed to track their progress.
* **Offline downloads:** Many prefer downloading audiobooks rather than streaming them over Wi-Fi.
* **Simultaneous reading and listening:** Some listeners use audiobooks alongside ebooks, particularly for language learning or translation purposes, allowing them to follow along with text while listening.
* **Volume control:** Though standard, manual volume adjustments were mentioned as a feature some rely on.
* **Stop and start playback:** While basic, this function remains essential for those who frequently pause their audiobooks.

#### Conclusion

Audiobook listeners use a variety of app features to tailor their experience to their needs. Playback speed adjustment, bookmarking, and navigation tools are particularly important, allowing users to optimize their listening experience. Others rely on additional functions like rewinding, simultaneous text-audio reading, and progress tracking. These features highlight the growing demand for customization in audiobook platforms, ensuring greater accessibility and convenience for all types of listeners.

### The Importance of Downloading and Playing Audiobooks on Any Device

The ability to download an audiobook and play it on a preferred device or app is important for many listeners. Among the 50 respondents, 72% rated this feature as either "important" or "very important." Specifically, 42% considered it "very important," while 30% found it "important."

"I always download my books to avoid using too much data.” (Francophone Focus Group, translated)

A smaller portion of respondents were less concerned about this feature, with 14% considering it "moderately important," and 6% rating it as "slightly important." Only 8% found it "not important."

### Why Downloading Matters to Listeners

For a significant portion of audiobook users, downloading is essential because it provides:

* **Offline Access:** Listeners can enjoy audiobooks without relying on an internet connection, which is especially useful while traveling or in areas with limited connectivity.
* **Device Flexibility:** The ability to choose where to play an audiobook—whether on a phone, tablet, e-reader, or other device—allows users to integrate audiobooks into their preferred reading habits.
* **Format limitations**: some respondents expressed frustration with format restrictions that limit compatibility across different apps and devices.

#### Conclusion

For most audiobook listeners, the ability to download books and play them on their preferred device is a highly valued feature. With nearly three-quarters of respondents considering this important or very important, audiobook providers should prioritize offering flexible downloading options to improve accessibility, convenience, and user satisfaction.

### Reader preferences for choosing book format

The decision to choose between print books, ebooks, or audiobooks is influenced by several factors, including availability, accessibility, subject matter, cost, and personal preferences. Readers often select a format based on their lifestyle, physical needs, and the type of content they are engaging with.

#### Availability and Accessibility as Key Drivers

For many readers, availability is a primary factor influencing format choice. Some individuals express a strong preference for audiobooks but will opt for an ebook or print book if an audiobook version is unavailable.

"For me, sometimes it's unavailability. Sometimes I want to read a series of books, and I can’t for the life of me find the audio. Maybe I find the first one in the series, but not the rest. Or one of them is narrated by someone different, and that throws me off. and that somehow I don't like. " (Anglophone Focus Group)

Accessibility also plays acrucial role**,** particularly for those withvisual impairments such as macular degeneration or blindness**,** who rely onaudiobooks or screen-reader-compatible ebooksto access content. Others withchronic pain, migraines, or mobility limitationsprefer digital or audio formatsdue to thephysical challenges associated with holding or reading a print book for extended periods**.**

"Recently, with my disability progressing and fatiguing my eyes, it was a big jump for me to jump to audiobooks. But it's giving me back the pleasure of a book. (Anglophone Focus Group Answer)

“I can finally avoid excessive visual and cognitive fatigue. I’ve rediscovered my love for reading thanks to audiobooks” (Francophone Survey Answer, translated)

#### Variation in Format Preference by Subject and Use Case

Different reading formats serve distinct purposes, and preferences often shift depending on the type of content being consumed.

* Audiobooksare most commonly chosen forfiction, entertainment, and multitasking**,** as they allow listeners toengage with content while commuting, exercising, or performing household tasks**.**
* Print bookstend to be preferred foracademic reading, note-taking, and subjects requiring deep focus**.** That being said, many participants use audiobooks for educational purposes. Many participant mention they would use audiobooks for academic purposes if they had better navigation, bookmarks and note taking features.

#### Personal and Situational Factors Influencing Format Choice

Beyond accessibility and content type**,** personal and situational factors shape format preferences.

**Energy levels:** Audiobooks are often chosen when individuals are tired or seeking relaxation, whereas print books require higher levels of active engagement.

**Multitasking needs:** Audiobooks are ideal for those incorporating reading into a busy lifestyle, such as while working, exercising, or completing household chores.

**Mood and genre:** Some individuals prefer audiobooks for thrillers and mysteries, where narration enhances suspense, while others opt for print books when reading complex world-building genres like fantasy or science fiction.

#### Challenges with Audiobook Retention

While audiobooks are widely appreciated for their convenience, some readers struggle with focus and information retention when listening rather than reading. Some individuals report difficulties concentrating on audiobooks, finding they retain information better through visual reading.

"I like audiobooks, but sometimes I lose focus and realize I haven’t been paying attention for the last five minutes. With print or ebooks, I can just go back and reread a section more easily." (Anglophone Focus Group)

#### Conclusion

The choice between audiobooks, ebooks, and print books is shaped by multiple factors, including availability, accessibility, content type, multitasking needs, and cost considerations. While audiobooks are highly valued for their convenience and flexibility, they are most of the time, but not always, the preferred format—particularly for readers who engage with complex, structured, or academic content that requires deeper interaction.

For many, audiobooks are indispensable, especially for those who rely on them due to visual impairments, chronic pain, or busy lifestyles. However, others turn to ebooks or print formats for better navigation, reference, and comprehension. Energy levels, mood, and genre-specific preferences also influence format selection, with audiobooks often being the go-to option for relaxation and multitasking, while print and digital formats remain dominant for structured learning, research, and deep engagement.

One key factor limiting audiobook adoption in certain contexts is navigation difficulty. Unlike print and digital books, audiobooks often lack precise controls for jumping between sections, revisiting key passages, or easily referencing information. Many respondents expressed that they choose print or ebooks for non-fiction, academic reading, or complex world-building genres because they can skim, re-read, and annotate more easily. Improving navigational features—such as advanced bookmarks, chapter search, customizable time jumps, and better synchronization with text-based formats—could increase the selection of audiobooks for readers who currently find them less suitable for structured or information-heavy content.

Ultimately, reading format preferences are highly situational and personal, with each format serving distinct needs. As audiobook technology continues to evolve, enhancing customization, accessibility, and navigation tools will be key to ensuring that audiobooks become an even more viable alternative to traditional reading formats, expanding their appeal to a broader range of users.

### What Listeners Enjoy About Audiobooks

For many, audiobooks provide essential access to reading materials, particularly for individuals with visual impairments or disabilities.

“The general impression it gives me is that it greatly reduces my fatigue. It allows me to consider reading activities that I would normally set aside because I have a limited number of spoons per day in my drawer. In terms of energy, some people might be familiar with the spoon theory. That’s it, I have to make choices. And having this audio reading allows me to preserve my energy, which would otherwise be too strained. The simple act of seeing, focusing my vision on the text, holding a book… it’s a lot. For autistic people too, even though I don’t want to generalize, anything related to executive functions can be very difficult. So, we don’t always realize it, but reading is not just a single action, it’s a combination of several tasks. And in my personal experience, that’s it: having the audio changes everything.” (Francophone focus group, translated)

An anglophone focus group participant further explained,

 "My whole family loves books—we are all book people. I remember growing up as a child, going to the library, and borrowing books. Recently, as my disability has progressed and my eyes have become more fatigued, it was a big transition for me to switch to audiobooks. However, they have given me back the pleasure of reading. One of the biggest challenges I faced was maintaining my attention while listening rather than reading. It took me some time to adapt and to accept that my vision was declining." (Anglophone Focus Group)

"Otherwise, I remember my first audiobook was probably a book on four-track tapes for school. Until then, I had my parents read to me because I was living in a different country, and I thought, 'Oh my God, I can actually have access to books on my own! It was such a treat—without having to beg family members to sit and read with me. So yeah, that was an eye-opener." (Anglophone Focus Group)

#### Convenience and Multitasking

The ability to listen while doing other tasks is a major advantage of audiobooks. One survey respondent explained, *"I get a lot of cleaning and chores completed while listening through my earbuds!"* (Anglophone Survey Answer).

#### Less Eye Strain and Fatigue

Many listeners appreciate that audiobooks allow them to rest their eyes.

#### Social and Shared Experiences

Audiobooks can also be enjoyed socially.

#### Expanding Reading Horizons

Audiobooks help listeners explore new genres. One survey respondent wrote,

"If it wasn’t for audiobooks, I wouldn’t have as much time to read for pleasure. I find that I can read much more—I even try book topics and styles that I wouldn’t have tried otherwise." (Anglophone Survey Answer)

### Challenges and Dislikes in Audiobook Experiences

#### Narration Quality

A poor narrator can ruin an audiobook experience. One survey respondent explained,

"If it is computer-generated, you expect it to be a certain way, but there are some really bad human narrators, and that can really ruin the listening experience." (Anglophone Survey Answer)

Another respondent added, *"I dislike when narrators mispronounce words or have a strange cadence to their narration."* (Anglophone Survey Answer)

A focus group participant reinforced this issue,

"The narrator had a high-pitched voice, she also hesitated often as she read the book. There were sections where she stumbled, as though she was discovering the text at the same time as us, without going over the difficult passages beforehand... it was an accumulation of irritants, and I wasn’t able to continue with the book.” (Francophone Focus Group, translated)

#### Difficulty Navigating Audiobooks

Some users find it hard to go back to specific sections. One participant wrote :

 My Daisy player broke, so I no longer can bookmark. But my Envoy Connect, in some versions of books that are playable on it, when you push 'next,' they may go from Chapter 1 to Chapter 7. Yet, you have to navigate backwards or forward by time. And of course, you don't know how much time elapsed between the 1st and 3rd chapter if you wanted to start back at Chapter 3 the following day. So, it's... it's a bit annoying." (Anglophone Survey Answer)

#### Subscription Costs and Platform Restrictions

Some listeners dislike that audiobooks are locked behind exclusive platforms.

I strongly dislike how many books are audible exclusives- I avoid supporting their stranglehold on the industry. In terms of specific reading experiences- I find it very jarring when a narrator pronounces words incorrectly. (Anglophone Survey Answer)

#### Conclusion

Audiobooks provide a flexible, immersive, and accessible way to experience literature. Whether used for multitasking, relaxation, or deeper engagement, they offer an adaptable format that allows readers to enjoy books in ways that suit their needs and lifestyles. However, some challenges—such as narration quality, navigation difficulties, and platform restrictions—affect the listening experience. Improving narrator selection, enhancing playback controls, and increasing access to non-exclusive content could help make audiobooks even more enjoyable for a wider audience.

### Disabilities and Impact on Audiobook Usage

 For individuals with print disabilities, audiobooks play a crucial role in ensuring equal access to literature and information. Many respondents with print disabilities highlighted how audiobooks allow them to continue engaging with books despite physical or cognitive barriers. This includes being able to:

* Listen to books without relying on vision.
* Follow complex texts more easily through auditory processing.
* Enjoy literature without the physical strain of holding a book or turning pages.

#### Barriers to Reading Commercial Audiobooks

Some audiobook platforms are not fully compatible with assistive technologies, and some lack adequate image descriptions, making navigation difficult.

“The worst barrier is when the software isn’t accessible with a screen reader.” (Francophone Survey Answer, translated)

A focus group participant shared their frustration with inaccessible descriptions:

All the descriptions of the books are in text and I cannot read them. For example, in the Libby app which our library has moved over to. All the text on the screen is not accessible, so I am not able to read the description of the book. I have to screenshot the description and open it in images and then read the image. I should not have to do so many steps just to see if I want to read the book. (Francophone Survey Answer, translated)

#### Limited Availability of Audiobooks

Many participants noted that not all books are available in audiobook format, particularly in human-narrated versions. This can be frustrating for those who rely on audiobooks for accessibility. Some participants also mentioned library partnerships and how public library systems don't always have the books they need.

#### Physical and Technical Barriers to Accessing Audiobooks

For some, even obtaining and setting up audiobooks presents a challenge in itself. A participant explained:

" I need to rely on someone else to pick out my books and get them delivered. I sometimes put the cd in upside down.” Anglophone Survey Answer)

I don’t know if people are aware of, but that's mostly the problem I have with sometimes downloading audio which I don't have the issue with either Libby or Audible or any other platform and I'm able to perfectly download books. Or add them to my library through the web CELA with no problem and then read them. Then download them in the app. But when I'm searching on my phone, it seems to be kind of buggy." (Anglophone Focus Group)

#### Economic and Technological Barriers

The cost of audiobooks and reading devices can be prohibitive for some users. One participant expressed frustration:

"People recommend audiobooks to me, but its expensive to buy a Kindle or a ereader. I’m afraid to spend the money and not be able to use it.” (Francophone Survey Answer, translated)

##### Difficulties Navigating Audiobooks

Many respondents expressed frustration with audiobook navigation, particularly with books that lack proper chapter structuring or intuitive navigation tools.

#### Barriers to Reading Accessible Audiobooks : Use of DAISY Audiobooks

The survey also examined the use of DAISY audiobooks, a structured format designed for accessibility.

Among the respondents with print disabilities:

* **55% reported using DAISY audiobooks**
* **36% did not**
* **9% were unsure about them**

DAISY users highlighted the benefits:

"I like the built-in navigation so that it is more like the experience of reading an e-book.) (Francophone Focus Group, translated)
"It is nice to have easy navigation and the ability to highlight and bookmark.” (Francophone Focus Group)

However, some users were unfamiliar with DAISY:

"I had never heard of it before this discussion.” (Francophone Focus Group, translated)

According to some participant, DAISY books offer improved navigation but often at the cost of audio quality.

" I like that DAISY books have well-designed navigation—you can easily jump between sections. But often, the audio quality is worse than on Audible or other commercial platforms.”​ (Francophone Focus Group, translated)

Additionally, some mentioned that not all audiobook platforms support DAISY, which limits availability.

" Good DAISY reading software or applications are rare. They are either limited in free features (e.g., selecting a file from storage) or full of bugs that hinder navigation. I am still waiting for rehabilitation services, and it will take years before I have the privilege of borrowing a Victor Stream.” (Francophone Survey Answer, translated)

One participant recounted their long search for functional software, describing how different options failed to meet their needs.

The first few times that I used DAISY books, I encountered a major issue: finding a computer program that allowed fluid navigation within the books.

Unfortunately, I didn’t find any that suited me. I tried a program whose name escapes me, which was presented as compatible with Mac and PC. For some books from SQLA, the playback gave the pagination in a linear way, announcing each page, page one, page two, page three. The navigation within the book was lacking.

I also tried EasyReader [… ] but I found it unfortunate that the essential options that I needed were only available with a subscription. I understand that some people buy their books, but I would like to be able to borrow audiobooks in a similar manner to a physical library, without paying for playback software that allows navigation.

Currently, the only way for me to have an ok reading experience, without being limited to a listening in a linear way, is to pay for an application that, in addition, is not really so powerful.

And, with my visual disability, I find myself in an administrative impasse. I’m likely to wait several years before receiving services from the INLB, even if my visual impairment is medically recognized. As a result, I can’t get an adapted device for reading DAISY books with all their navigation functionalities. (Francophone survey response, translated)

#### Conclusion

The experiences shared by participants highlight a contradiction in accessible audiobook formats: while DAISY books are designed to enhance navigation and usability for individuals with print disabilities, significant barriers still prevent users from fully benefiting from them.

From the frustration of poor audio quality to the lack of compatible reading software, many users find themselves trapped in a cycle of trial and error, searching for solutions that either fail to meet their needs or come at an additional financial cost. The reliance on paid applications for basic navigation features further exacerbates inequality, making access to DAISY books a privilege rather than a universal right.

According to some participants, beyond technological hurdles, bureaucratic and administrative delays leave users waiting years for access to essential assistive services, creating an unjust gap between available resources and practical accessibility. These obstacles leave many individuals without the means to enjoy literature, education, and information freely.

### Ideal Audiobook Experience

Participants were asked to share their vision of an ideal audiobook experience if anything was possible. Their responses highlighted key themes such as customization, accessibility, high-quality narration, and enhanced navigation features.

#### Customization and Control Over Playback

Many respondents highlighted the importance of extensive control over their listening experience.

"Everything would be included in the main text [images descriptions, footnotes, etc], but there would be an option at the beginning to ask if you wanted to skip different types of sections, and that would be applied to the whole book." (Anglophone Survey Answer)

#### High-Quality Narration and Human Voices

There was a strong preference for **human narration** over synthetic voices.

"To always have a fabulous narrator." (Anglophone Survey Answer)

Many respondents emphasized the importance of professional voice actors and well-produced recordings.

#### Better Navigation and Search Features

Many participants expressed frustration with **disorganized chapter structures and a lack of search tools**, leading to difficulties in locating specific content.

"Possibility to make a keyword search to find a passage, add bookmarks, and take notes." (Anglophone Survey Answer)

#### Accessibility Enhancements

Survey respondents highlighted key accessibility features they would like to see:

"Les livres devraient tous inclure des descriptions d’images pour ne pas manquer d’informations." (Books should all include image descriptions so that no information is missing.) (Francophone Focus Group)

#### Expanded Audiobook Availability

Many survey respondents expressed the need for a larger selection of audiobooks.

"I wish every single book that is in the world is accessible in an accessible format for free. I wish that all people with print disabilities can choose their desired features included or the ones they don't find useful excluded." (Anglophone Survey answer)

Focus group participants also raised concerns about availability:

"Too many books are not available in audio, especially in French. It’s frustrating!) (Francophone Focus Group, translated)

"I hate when a book is only available on one platform, like Audible. It limits access and forces me to use their service." (Anglophone Focus Group)

## Ideal Technological Advancements in Audiobooks

Participants were asked what features they would like in audiobooks if technology allowed for anything. The responses indicate a strong desire for greater interactivity, customization, and accessibility in audiobook platforms.

### Top Requested Features

* **Advanced search within audiobooks (87%)** – The most requested feature, allowing listeners to search for specific keywords, character names, or passages and jump directly to the relevant section.
* **Customizable background sounds or music (82%)** – The ability to enable or disable background sounds or music to enhance immersion.
* **Seamless switching between audiobook and text (71%)** – Syncing progress across audiobook and ebook formats, allowing users to switch between reading and listening.
* **Speech recognition for voice commands (69%)** – The ability to use voice commands for playback, such as "skip back 30 seconds" or "go to Chapter 5," for hands-free control.
* **Customizable voices (64%)** – Listeners want the ability to modify narrator voice settings, possibly adjusting pitch, tone, or even selecting different narrators.
* **Text highlighting (47%)** – Read-along functionality that highlights text as it’s narrated to help with comprehension and engagement.
* **Print book page number reference (51%)** – Synchronization with print book page numbers, making it easier to follow along or cite audiobooks for academic work.
* **Advanced note-taking and annotations (51%)** – The ability to add voice or text notes at specific timestamps in the audiobook, exportable or synced with study tools.
* **Captions or transcripts with tone indicators (33%)** – Transcripts that include tone indicators (e.g., sarcasm, excitement) for improved accessibility and clarity.
* **Social sharing and collaborative annotations (27%)** – Sharing favorite quotes or annotations with others via social media or within the audiobook platform.
* **Accent-based narrator filtering (requested by a participant)** – One respondent noted difficulty understanding UK accents and preferred an option to filter audiobooks based on narrator accents.

# VI. Recommendations

This project has explored the possibility of born accessible audiobooks and asked users to share their experiences with audiobooks in a commercial format that include features designed to make them more accessible. This project’s unique contribution is the reader experience, including both those with and without print disabilities. Our recommendations come from the perspective of readers and value the inclusion of all readers. Audio is a unique format clearly, but it is as valuable a mode of reading as any other. Readers, regardless of disability status, use audiobooks in a rich and varied way, and they need formats and reading systems that allow them to engage with audiobooks fully.

Our recommendations are based on research findings, participant feedback, and awareness of existing technological possibilities. Although we make a number of recommendations based on the data we have collected, some of them are immediately feasible while others depend on many factors and stakeholders. While many of these solutions are technically feasible, their successful implementation may require the development of standards to support specific functions and subsequent technology development within reading platforms. They will also require commitment from multiple stakeholders, funding, addressing legal concerns, and changing publisher workflows.

Collaboration across the audiobook supply chain, from publishers, audiobook producers, distributors and vendors, reading system developers, accessibility advocates, and readers will be the key to the realization of born accessible audiobooks in all their potential.

The recommendations are divided into four sections:

1. Key recommendations for publishers and audiobook producers as well as reading platforms. These are the recommendations that can be acted on by single stakeholders with current standards and technology.
2. Longer term recommendations are for all actors in the audiobook industry and will require collaboration, funding, standards creation and technology development to realize.
3. Recommendations by feature offers brief suggestions for how to approach the audiobook accessibility features this project explored.
4. Further development and future audiobook experiences offers possibilities for expanding the capabilities of audiobooks well beyond the way they are currently understood, informed by participants’ responses and expressed wishes for audiobook reading.

## Key recommendations

The recommendations in this section are actions that can be taken by individual actors in the audiobook industry and are relatively feasible in the short or medium term.

### Key recommendations for publishers and audio book producers

Our findings support the adoption of the detailed recommendations for audiobooks provided by both NNELS and the Accessible Publishing Learning Network, as well . These recommendations are feasible within existing standards and technologies.

* “Audiobook Recommendations for Publishers” created by NNELS and published at AccessiblePublishing.ca. <https://www.accessiblepublishing.ca/audiobook-recommendations-for-publishers>
* “Accessible Audiobook Workflow Guide: Producing Born Accessible Audiobooks” published by the Accessible Publishing Learning Network. <https://apln.ca/accessible-audiobook-workflow-guide-producing-born-accessible-audiobooks/>
* Audiobooks recommendation from W3C. https://www.w3.org/TR/audiobooks/

Below we have synthesized and summarized the recommendations from the NNELS recommendations and the APLN guides. We recommend that publishers consult the documentation from NNELS and APLN on audiobook creation directly as they include significant details and practical how-to information. Where our findings suggest slightly different approaches than NNELS or APLN describe, we provide an explanation.

1. **Ensure Completeness of Content**
* Include all print book elements in the audiobook to avoid omitting critical content like footnotes, references, indexes, and appendices.
* Make bibliographies available in an accessible text format by offering a downloadable or linked document, especially for long bibliographies. If the publisher chooses to provide supplemental materials in PDF, additional training and resources for accessible PDF production may be required. Supplemental materials offered in EPUB may be more flexible.
* Avoid unnecessary abridgment to ensure the audiobook matches the full content of the print version unless explicitly marketed as abridged.
* Brief footnotes and image descriptions should be recorded in-line so that readers listen to them in the context to which they relate. Our findings show that in current commercial audiobook formats, the ability to skip notes and customize playback settings is not supported well enough for easy navigation of short notes. NNELS recommendation to record notes in a separate file may be preferable for longer notes.
* NNELS recommends that cover image descriptions be included in audiobooks. Our data showed mixed support for recorded cover image descriptions in commercial audiobooks, and ideally they could be optionally skipped, according to user preference settings. We therefore recommend that publishers create image descriptions for book cover images, at a minimum for use on website and other documents where the image is included and requires alternate text. We recognize that integrating these cover image descriptions in audiobooks may not be practical in the near term. Publishers should use their discretion whether to include the cover image description in the narrated audiobook.

**2. Improve Narration for Accessibility**

* Include Footnotes and use verbal cues for footnotes (e.g., “Footnote begins… Footnote ends”) to prevent disruption while maintaining clarity.
* Ensure narrators clearly distinguish headings, sections, and references through pacing, tone changes, and phrasing to improve comprehension.
* Optimize audiobooks for playback speed adjustments to ensure narration remains clear, structured, and comprehensible at different speeds.
* Narrate image descriptions so that listeners can access visual content through audio format **(NNELS, APLN)**.

**3. Enhance Navigation and Structure**

* Provide a well-structured and detailed Table of Contents (ToC) file to allow listeners to identify and navigate chapters and sections easily. This is achieved through the production of a playlist or manifest file. (APLN)
* In addition to providing a ToC file, name the MP3 files consistently and meaningfully to facilitate smooth navigation and playback where the ToC file is not used **(APLN)**.
* Use the ID3 metadata tags to label sections (e.g., front matter, back matter, chapters, references) correctly for easy identification on audiobook platforms **(APLN)**.

**4. Strengthen Multi-Format Accessibility**

* Provide multi-format options where possible, offering text versions of references, appendices, and supplementary materials for accessibility.
* Advocate for text-audio synchronization in future releases by working with platforms that support synchronized reading for better usability.
* Ensure compatibility with assistive technologies by working with distributors to optimize audiobooks for screen readers and accessibility tools. \*Advocating Role

**5. Maintain High-Quality Audio and Narration**

* Engage skilled narrators who can effectively convey tone, emotion, and clarity, enhancing the overall listening experience **(APLN)**.
* Use clear, well-paced narration that accommodates users who adjust playback speeds.
* Consider AI-assisted narration for structured content, such as bibliographies and back matter, where it can improve efficiency without compromising quality.

**6. Stay Ahead with Accessibility Standards and Innovation**

* Over the longer term, adoption of the [W3C Audiobook Specification](https://www.w3.org/TR/audiobooks/) may allow players in the industry to ensure that audiobooks are structured for better navigation, accessibility, and usability across platforms (W3C Audiobooks). Currently adoption of this recommendation is limited; Coresource accepts it today.
* Keep up with evolving accessibility standards by following DAISY, W3C Audiobook specifications, and EPUB accessibility guidelines.
* Monitor emerging technology trends, new interactive audiobook features, and accessibility tools.

## Key recommendations for audio book platforms

* Ensure that all aspects of the platform from search and discovery through to reading meet accessibility standards, such as Web Content Accessibility Guidelines.
* Allow readers to read audiobooks that they purchase, rent or borrow in the reading system of their choice, whether an application or device. Fulfilling this recommendationhis may involve the adoption of digital rights management approaches that support interoperability and accessibility. Some platforms, for example, the Quebec-based audiobook platform Narra, already offers users this option.
* Voice commands for hands-free control of playback is possible with some current technologies and our findings suggest expanded adoption of this option will help readers with a wide range of needs.

## Key recommendations for libraries

* Consider accessibility when procuring licensed digital resources. Prioritizing accessibility considerations from the beginning of the procurement process results in licensed digital resources that are accessible to everyone. Consult the Public Library Accessibility Resource Centre procurement resource: <https://accessiblelibraries.ca/resources/considering-accessibility-procuring-licensed-digital-resources/>
* Develop robust audiobook collections that include a variety of content, genres and perspectives according to collection development policy.
* Offer training for staff and users on audiobook reading services. Increased digital literacy will help users make more skillful use of audiobook platforms.
* Provide staff with training on accessible library services and assistive technologies.

## Longer Term Recommendations for Audio Book Accessibility

### Organize an accessibility-focused summit or working group for audio book publishing

This event or group would bring together actors from across the audiobook supply chain to share information about accessibility in commercial audiobooks and the reader experience. Actors across the supply chain, including readers, would discuss user preferences and technological feasibility of born accessible commercial audio books. The involvement of stakeholders at each point in the supply chain in such a meeting would contribute to building a network of people interested in working on born accessible audiobooks. An outcome of this meeting could be a clearer understanding how to realize the potential of born accessible audiobooks, and fully detail the opportunities, challenges and the specific areas for further work and investigation.

### Conduct further research and experimentation in audiobook accessibility

* + Conduct further investigation of user preferences in audiobooks to better understand the interactions between readers and different kinds of content and structures in audiobooks. For example, further research should investigate which kinds of notes should be inline, and which should be separated from the main text.
	+ Research the optimal method to indicate the beginning and end of content that interrupts the main flow of the text, such as image descriptions and notes. Whatever method is recommended, it should be used consistently across publishers.
	+ Conduct further investigation implementation options for navigability, customization, and support for user preferences in commercial audiobooks, including compatibility with assistive technology.
	+ Explore production workflows to better support accessibility. Questions include How small and independent publishers can adopt accessibility best practices efficiently, including accessibility metadata.
	+ Explore the feasibility of certifying audiobook production workflows (similar to Benetech certification for ebooks) .
	+ Emphasize both accessibility and usability in research on user needs and preferences, with attention to the range of comfort and skill levels with audiobooks technology. We also suggest investigation of income levels on use of audiobooks.

### Develop accessibility metadata standards for audiobooks across

Accessibility metadata for audiobooks will help readers find and select books with features that are useful to them, and also highlight the efforts that publishers and producers have made to create born accessible audiobooks. Some elements that accessibility metadata for audiobook may address include:

* Table of Contents (ToC) is structured for easy navigation.
* Identification of skippable sections (e.g., footnotes, appendices).
* Narration type (human, AI-generated, or hybrid).
* Availability of synchronized text-audio when paired with an ebook.
* Indication of supplementary text inclusion (e.g., bibliographies, references provided as a text file).
* Presence of image descriptions within the narration.
* Accessibility certification, if this approach is applied to audiobooks.

### Addressing Industry-Wide Standardization Gaps

Commercial audiobooks do not currently have unified and standardized accessibility guidelines similar to the W3C EPUB Accessibility recommendation. The development of common, accepted accessibility standards for audiobooks would help reduce inconsistencies across publishers, distributors and reading platforms.

### Work towards customization and support for user preference playback settings

Since there is no one-size-fits-all approach, and reader needs vary greatly based on personal preferences, usage, and book type, we recommend that the industry strive over the longer term toward a reading ecosystem that allows listeners to customize their audiobook experience and include or exclude certain elements, based on their needs or preferences. For example, readers could choose to include or exclude cover image descriptions based on their interest in the cover image, or their ability to see it. Publishers should be able to provide **pre-set defaults for each book**, like they might have a default font setting in an ebook, but listeners should be able to customize them.

These preferences should be pre-set and **applied across audiobooks when possible** and accessible via audiobook application or device settings. These elements should also be skippable during playback, if readers did not pre-set their preferences.

**The realization of this goal requires development and adoption of standards**. Support for customization and user preference settings for these elements requires development of standard ways of marking this content which is not possible in commercial MP3 audiobooks as they are generally produced and distributed today. Standards will need to be developed, adopted and implemented to create audiobooks that support customization. For example, the W3C Audiobooks standard could be further developed to support this functionality. Additionally, technology development by reading systems is required to allow users to set preferences and interact with these elements.

Publishers can begin to build the in-house knowledge and work flows to support more robust navigation and user preferences in audiobook playback. At the editorial stage, publishers can begin thinking about the different types of content in a title, and whether readers should be able to navigate to it and/or skip it. Although this work may not have immediate application, it can help build knowledge and readiness for evolution in audiobook publishing.

Understanding that the implementation of these recommendations is possible only in the longer term, we can nevertheless offer some suggestions for useful settings. Based on our findings, users should be able to set preferences for the following elements :

* Placement or inclusion of front matter (dedications, acknowledgments, preface, about the author etc.)
* Table of contents (narrated or not)
* Footnotes and endnotes (narrated or not)
* Bibliography (narrated or not)
* Cover image descriptions (narrated or not)
* Embedded Image Descriptions (narrated or not)
* Music and Sound Effects (narrated or not)
* **Return to publisher default:** A button to revert settings to the publisher’s recommended version.

We also suggest a ‘Jump to main content’ option to move the reader directly to the publisher-defined main content of the book.

The participants in this study were mostly proficient users of technology and advocated for options that work for them. For advanced users, customization options could further enhance the experience. Allowing users to toggle the placement of front matter—either at the beginning or end of the audiobook—through player settings would accommodate both those who prefer the traditional print structure and those who want immediate access to the main content. This flexibility would cater to a wide range of user preferences and improve the overall usability of audiobooks.

One potential issue with this recommendation is that, while we emphasize the value of skippable content and customization of the playback according to reader preferences, some users—particularly those less familiar with audiobook navigation tools—may encounter challenges. For example, some participants noted that although they appreciated the option to skip or navigate front matter, not everyone knows how to efficiently use navigation features like chapter markers, playlists, or interactive tables of contents. Without a proper understanding of these tools, users may feel forced to listen to the front matter, even when they prefer to skip it. To support the range of comfort with technology, short audio tutorials or short audio instructions could be included at the beginning of the audiobook, guiding users on how to skip sections and navigate efficiently.

Ultimately, these recommendations highlight opportunities to improve audiobooks for all readers, and to make them more accessible, but their feasibility will vary depending on adoption by key actors in the industry, legal and rights concerns, and future technological advancements.

### Broader availability of audiobooks

Our findings show that readers use audiobooks for a variety of purposes, and many rely on audiobooks as a primary way of reading. The participants in this study advocated for the availability of a broad range of books in audio, particularly books in non-fiction, languages other than English. This broader availability supports access to a range of information and perspectives. For publishers, our findings demonstrate that readers choose audiobooks for a variety of purposes beyond leisure reading, and so books that are instructional or educational should be considered for audio production. Several actors in the supply chain have a role in increasing audiobook availability:

* + Public libraries and specialized libraries for people with print disabilities should continue to work to increase the availability of audiobooks in their collections.
	+ Funding for audiobook production. The independent Canadian publishers consulted repeatedly emphasized the economic challenges in bringing Canadian books to the audiobook market. Funding programs for publishers should prioritize accessibility and audiobooks. Funding could also encourage collaboration between the publishing sector and alternate format sector to avoid duplication of effort and increase quality and representation of Canadian materials, and access to audiobooks.
	+ Libraries, educators and publishers should champion audiobook listening as an valid form of reading alongside braille and print-based reading. Destigmatization of audiobooks may lead to further growth audiobook markets and greater inclusivity of reading.

### Examine how barriers to integrating text and audio can be reduced

Many of the ways in which participants in our study would like to use audiobooks require or would be easier to create if audio and ebooks were combined in a single format. For example, the ability to perform a keyword search in an audiobook and jump to the section of the book where that word is used. However, industry stakeholders frequently cited the legal difficulties of combining etext and audio in the commercial market because audio and ebook rights are often, but not always, separate. We also heard that the distribution of audiobooks and ebooks through the supply chain are distinct and not designed to support multiformat books.

Given the possibilities for innovation and improving the user experience that combining audio and ebooks would offer, we recommend actors across the industry consider legal approaches and change that support integration of text and audio. Distributors and reading systems should in turn support format innovation.

## Recommendations by feature

The participants’ experience with using a variety of specific accessibility features in audiobooks allows us to make recommendations about the inclusion of these elements and approaches to their implementation in audiobooks. These recommendations include longer-term changes that may require development of standards and cross-sector collaboration.

### Front and back matter

* **Front and back matter should be included in audiobooks, but skippable and interactive.**

Publishers should ensure that all relevant content available in other formats —such as dedications, about the author, acknowledgments—is available within the audiobook format, but our findings suggest flexible approaches to the placement of front and back matter will best meet reader’s needs. Audiobooks should generally follow the print order to maintain consistency across formats, but this is especially crucial for non-fiction, academic, and technical books. In these cases, preserving the original structure helps convey important context and supports comprehension.

Since copyright details are often non-essential to most listeners, embedding it within the book’s digital metadata or placing this information at the end of the audiobook could help streamline the initial listening experience.

Allowing users to skip front matter or toggle the placement of front matter to the beginning or end of the audiobook using playback settings would cater to both those who prefer the traditional print structure and those who want immediate access to the main content. In addition, we suggest that publishers be able to define a default order of listening.

### Narrated table of contents

* **A detailed, navigable chapter menu or track list is recommended over a narrated table of contents; a narrated table of contents can have value for some materials.**

Navigation in an audiobook is a crucial function, and detailed and descriptive track or chapter lists support most readers’ needs for navigation. Built-in track lists and chapter menus are often sufficient for navigation, particularly for fiction books, making narrated ToCs redundant in many cases. A narrated table of contents may have value for **non-linear or complex content** such as anthologies, self-help books, or educational materials, provided it is skippable.

### Footnotes

* **Footnotes that provide essential context or critical information should be integrated directly into the main narration.**

Short notes that give important information and require context should be narrated in-place, and indicated clearly (e.g., “footnote” and “end of footnote”). Given the many purposes that notes can serve in different genres and categories, particularly in complex or technical materials, we recommend further investigation of the best ways to represent notes, including how to indicate them in a standard way.

The ability to set user preferences for reading or skipping footnotes will meet the wide range of user needs, especially in fiction or narrative-driven content where they may be less important to the reader’s goals.

### Bibliographies

* **Bibliographies are most useful provided in text, but narrated bibliographies meet specific user needs. Use of synthetic speech is recommended for longer bibliographies.**

Given the strong preference for text-based bibliographies, but recognizing that some users require audio access to information, audiobook producers should offer both accessible text versions and an audio option for bibliographies. This hybrid approach ensures accessibility for different user groups while meeting diverse needs. Narration should be optional and available for users who find it beneficial, again relying on the ability to customize playback according to user preferences.

Our results suggest synthetic voices could be utilized in contexts technical or academic audiobooks with complex references (e.g., URLs, lists). For general or pleasure reading, where a bibliography is short, human narration should remain the default to ensure a more engaging experience.

### Music and sound effects

* **Music and sound effects can enhance audiobooks, particularly children’s books and fiction, but should not overpower the narration.**

**We recommend the ability to customize the inclusion of music and sound effects to meet user preferences, recognizing that this goal is possible only with development of shared standards that support customization and user preferences. In the near term, audiobook producers should balance the audio carefully with narration so the text is clear and distinct. As accessibility standards for audiobooks are developed, they should specify the balancing of sound effects or music and narration.**

### **Image descriptions**

* **Include image descriptions in audiobooks, mark them clearly, and investigate user preferences especially for longer descriptions.**

**Image descriptions should generally be integrated into the main narration**for audiobooks that contain images, charts, graphs or other meaningful visual elements, particularly in**non-fiction, educational, and technical content**. Participants strongly favoured integrated image descriptions for ease of listening, improved comprehension, and uninterrupted engagement.

To **maintain user flexibility**, the ability to **skip image descriptions and pre-define settings for inclusion or skipping image descriptions should be developed, recognizing this is a longer-term goal that requires further investigation and collaboration across the industry.**

Given the **challenges some participants faced in distinguishing descriptions**, audiobook producers should use **consistent audio cues** (e.g., stating “image description” before reading it, and “end of image description” at the end of it). Establish clear, standardized narration techniques (e.g., using distinct voices, introducing descriptions explicitly, or inserting subtle auditory markers) to improve listener comprehension.

While embedded descriptions work well for most cases, some participants noted that lengthy or complex visuals (e.g., large tables, charts, or technical diagrams) might be better suited for a separate section, and defined differently in the navigation than short image description. Overall, image description requires further investigation, particularly in complex materials.

### Cover image descriptions

* **Include cover image descriptions, but allow users to define preferences to read or skip them**

Cover descriptions should be included in audio books as a standard feature to ensure accessibility for listeners with print disabilities or visual impairments. Inclusive design principles should guide the development of descriptions that balance accessibility with brevity.

Our results suggest they should be placed at the beginning of the audiobook, either before or immediately after copyright information, to maintain a logical flow without interrupting the main content. The cover image description should be well-integrated with the rest of the book, using the same narrator. For simple covers with mainly text, descriptions should be short and focus on key visual elements, such as font colors and layout. For visually complex covers, more descriptive detail can be included to enhance immersion and provide meaningful context.

Since many users do not need or prefer not to hear cover image descriptions, audiobooks should provide listeners with options to customize or skip cover image descriptions based on their pre-defined preferences. For example, listeners could choose between detailed, brief, or no descriptions at the start of the audiobook.

## Further Development and Future Audiobook Experience

Beyond immediate recommendations, survey participants and focus group respondents provided insights into their ideal audiobook experience, imagining future advancements in audiobook technology. These ideas reflect long-term goals for audiobook platforms, requiring further development in technology, AI, and user customization.

### Advanced Search and Enhanced Navigation

* Word search within audiobooks: The ability to search for specific words, character names, or phrases and jump to those points in the audio.
* Verbal navigation commands: listeners could say “Go to Chapter 5” or “Find the part where the author talks about climate change” to navigate effortlessly.
* Improved Synchronization with Print & eBook Formats: Instant switching between audiobook and text versions, with seamless transition based on user preference.

### Smart AI and Personalization Features

* AI-Assisted Bookmarking & Summarization: AI could recognize key moments and generate summaries of previous sections for better retention.
* Dynamic Narrator Adjustments: Users could customize tone, pace, and voice characteristics, such as switching between different narrator styles.
* Accent & Voice Preferences: Listeners could select narrators with regional accents or dialects they find easiest to understand.

### Multimodal and Learning-Based Features

* Read-Along Text Highlighting: Audiobook apps could highlight words as they are spoken, aiding comprehension, especially for language learners.
* Live Transcription & Captions: Real-time text transcription with tone indicators (e.g., sarcasm, whispering) for enhanced clarity.
* Instant Dictionary & Contextual Learning: Listeners could ask, “What does this word mean?” and receive a quick definition within the audiobook.

### Interactive & Social Audiobook Experiences

* Collaborative Annotations & Shared Highlights: Users could mark favorite quotes and share notes within audiobook platforms.
* Personalized Audiobook Playlists: Similar to music streaming services, users could create custom audiobook experiences, selecting only sections relevant to them.
* Interactive Storytelling: Audiobooks could allow user-driven narratives, where listeners choose different endings or character paths.

## Conclusion: Shaping the Future of Audiobooks

These visionary ideas highlight user aspirations for a more interactive, intelligent, and personalized audiobook experience. While some are not immediately feasible, they represent the future direction of audiobook innovation—aiming for a world where audiobooks are fully adaptable, deeply immersive, and universally accessible.

# VII. Conclusion

The Commercial Audiobook Research Project has provided an examination of the accessibility challenges and opportunities within the audiobook industry. Through consultations with publishers, producers, accessibility advocates, and users—both with and without print disabilities—this research has identified critical areas for improvement to ensure that audiobooks become truly accessible for all.

One of the key findings of this study is that, despite their audio-based nature, audiobooks are not inherently accessible. Users with print disabilities continue to encounter significant barriers, including inadequate navigation features, missing supplementary content such as footnotes, indexes, and image descriptions, and inconsistencies in formatting and distribution. These issues create an uneven reading experience and prevent many readers from fully engaging with audiobooks.

A central challenge is the lack of industry-wide standardization, leading to widely varying user experiences. Unlike ebooks, which benefit from accessibility guidelines such as EPUB3, commercial audiobooks lack a universally adopted framework. While the W3C Audiobook Specification provides a foundation for standardization, its adoption remains limited. Without clear accessibility requirements across the industry, users with print disabilities face an unpredictable listening experience, as some audiobooks offer well-structured accessibility features while others do not.

### Accessibility Preferences and the Case for Born Accessible Audiobooks

A notable insight from this research is that there is no significant correlation between disability status and audiobook format preferences. While many readers with print disabilities rely on audiobooks for accessibility, their preference for certain audiobook features largely align with those of users without disabilities. Both groups express similar preferences regarding navigation structures, the placement of front and back matter, and the inclusion of customizable playback features.

For instance, traditionally, image descriptions have been considered essential only for blind and visually impaired readers. However, this study challenges that assumption by demonstrating that both listeners with and without print disabilities find value in image descriptions, recognizing their potential to enrich the audiobook experience. By providing context for visual elements, image descriptions enhance comprehension, engagement, and overall enjoyment of the content. This finding serves as one compelling example of why accessibility should be embedded into audiobook production from the outset rather than treated as an add-on for a specific audience.

This finding reinforces therefore the case for "born accessible" audiobook production. By integrating accessibility considerations from the outset, publishers and producers can create audiobooks that not only serve the needs of readers with print disabilities but also improve usability for all consumers. Navigation tools, structured track labeling, skippable sections, and clear metadata are not just accessibility enhancements—they are user-friendly design choices that enhance the overall listening experience.

In that sense, this research also makes it clear that audiobook accessibility is not just a legal or ethical responsibility but also a commercial opportunity. The audiobook market is expanding, and readers with print disabilities represent a dedicated consumer base that would greatly benefit from more accessible offerings.

User feedback from this research highlights a strong demand for customizable and flexible audiobook features. Many readers expressed the need for skippable sections, allowing greater control over the placement of front and back matter. Others emphasized the importance of well-structured navigation to facilitate seamless access to different parts of a book. However, insights from publishers, producers, and distributors indicate that implementing these features is a long-term goal, as it requires significant technological changes at the platform level. Additionally, industry stakeholders pointed out that such changes would need collaboration between publishers and platform developers, as well as financial investment to support research and development.

Policy and funding initiatives play a crucial role in driving accessibility improvements within the audiobook industry. Canada’s Accessible Digital Books Initiative has shown how government support can encourage publishers to adopt accessible publishing practices. However, ongoing investment is necessary to ensure lasting change.

Collaboration between alternate format initiatives and commercial audiobook production should be explored to ensure that all audiobooks are born accessible, rather than producing dual formats—one commercial and one alternative—without reducing essential services for people with print disabilities. Further investigation into this collaboration is needed to identify best practices, potential challenges, and strategies for seamless integration that uphold accessibility standards while maintaining critical support for specialized services.

### Moving Forward: A Call to Action

As demand for audiobooks continues to rise, accessibility must become a fundamental consideration in innovation and production. The findings and recommendations from this study provide a roadmap for improving accessibility in commercial audiobooks, ensuring that all readers, regardless of disability, can fully participate in and enjoy the growing audiobook market. Like many other industries, such as ebook publishing with EPUB standards, born accessible audiobooks are not only better for people with disabilities but also enhance the overall experience for all users.

Achieving this goal requires collective action across the industry. Publishers and producers must integrate accessibility features at the production stage, while distributors and platform providers should enhance metadata tagging and navigation tools. Policymakers and funding bodies must continue to support accessibility initiatives and explore regulations that enforce accessibility standards in commercial audiobook production.

By prioritizing accessibility from the outset, the commercial audiobook industry has an opportunity to create a more inclusive and equitable reading and lisening experience for all readers. Audiobooks serve as a crucial format for many, offering access to literature, education, and culture. Making accessibility a standard practice, rather than an exception, benefits not only readers with print disabilities but also improves usability for a wider audience. While achieving this goal requires collaboration, investment, and industry-wide commitment, the long-term impact is clear: a more seamless, user-friendly, and accessible audiobook experience that meets the needs of diverse listeners. As the audiobook market continues to grow, now is the time to establish accessibility standards that will shape the future of digital reading.

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