

Accessible reading technology: Where we are and where we are going



Agenda

- Intro to CELA and accessible books
- Accessible reading technologies as forecasts for mainstream development
- Demos: Envoy Connect, EasyReader app and Alexa
- Future trends in accessible tech
- Future in accessible publishing

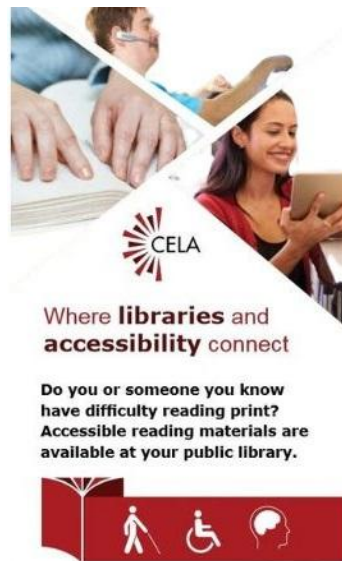


CELA

Centre for Equitable Library Access

What is CELA?

- Is a free library service offered through Canadian public libraries
- Serves people with print disabilities across Canada
- Provides materials in accessible formats, like braille, e-text and audio



CELA is a comprehensive accessible library service, providing over 1,000,000 books, magazines and newspapers to the +-3 million people with print disabilities living in Canada. CELA is a national not-for-profit organization. Our mission is to support public libraries in the provision of accessible library collections and to champion the fundamental right of Canadians with print disabilities to access media and reading materials in the format of their choice. Our services ensure that people with print disabilities across the country are more able to fully participate in learning,

work and community life.

Print disabilities encompass those who are blind or visually impaired, people with comprehension disabilities such as dyslexia and those with physical disabilities that make it difficult to read a print book.

Who can register for CELA?

Persons with print disabilities	<u>Patron Account</u>
Educators	<u>Educator Access Program</u>
Support Professionals	<u>Client Access Support Program</u>



Persons with print disabilities self or through public libraries. Can optionally add designate.

K12 and post secondary institution educators of students with print disabilities.

Other professionals supporting people with print disabilities. More info about each account in hand-out links

Content sources for CELA

- New original productions ordered by CELA
- Collaboration with Bookshare
- Content shared by other accessible libraries via [Marrakesh Treaty](#)
- Purchasing commercial audiobooks
- Newspapers and magazines



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[CELA Collections Over the Decade Blog Entry](#)

Marrakesh Treaty to Facilitate Access to Published Works for Persons Who Are Blind, Visually Impaired or Otherwise Print Disabled.
Pause for questions.

What is an accessible book?

"An accessible book is one that can be used and understood by everyone."

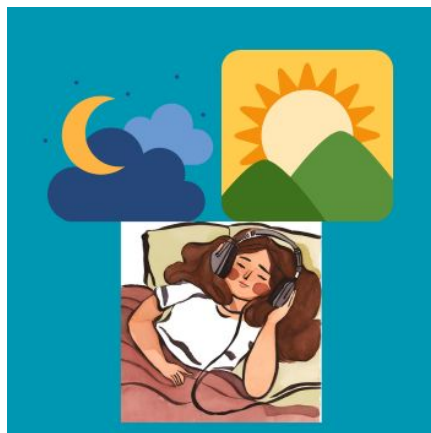
~What it means to be accessible BookNet Canada



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An accessible book is a book with features that make reading possible for people with disabilities. For example, an accessible audiobook can be specially formatted to make it easier for those with print disabilities to navigate to different parts by selecting buttons on an accessible reading app or specialized players. Common formats include audio, e-books and braille. Link to quote: <https://www.booknetcanada.ca/blog/2018/1/19/what-it-means-to-be-accessible>

Technology changes the way you read...



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story about switching from books on tape to one single large file =lost track of time. Listened through the night.

Adaptations for reading

Disability specific

- Visual – electronic braille
- Learning – OpenDyslexic font
- Physical – switch technology

Common accessible features



Text to speech



Magnification



Scanning technologies



Audio narration



Voice controlled devices, e.g. smart speakers

celalibrary.ca



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Strategies for accessible print are sometimes specific for one category, often all three benefit from them so there is overlap in use case.

- Specific for visual disability:
 - Braille, embossed on paper and electronic = braille display
 - Screen magnification. = Any smart device with screen (PC, tablet, phone, eReader)
 - Captioning of images
- Learning disabilities:
 - Dyslexia font layout and cursor highlighting etc. = specialized apps or accessibility settings of some mainstream devices.
- Physical
 - Sticky keys and other keyboard adaptations
 - Switches
- Strategies benefiting all 3 categories
 - Screen readers = text to speech = available same as magnifiers
 - Scan print = Optical character recognition = scanners or

- smart phone camera or cPen?
- audio narration (sometimes with specialized formats for navigation, bookmarks, TOC mentioned before.
=specialized devices or apps on mainstream devices.
- Voice control especially smart speakers

Accessibility Innovations lead the way



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Accessibility needs often drive innovation from special needs to mainstream.

LP record technology patent was first envisioned as application for library for audiobooks for the blind. Robert Irwin collaborated with LP inventor.

Other examples: speed control and navigation by chapter in audiobook =first on specialised devices for accessible libraries, now on every audiobook and podcast app.

Envoy Connect

- Newest audiobook player for CELA titles
- Low price and low tech
- Mail in to reload or load with free CELA Connect software



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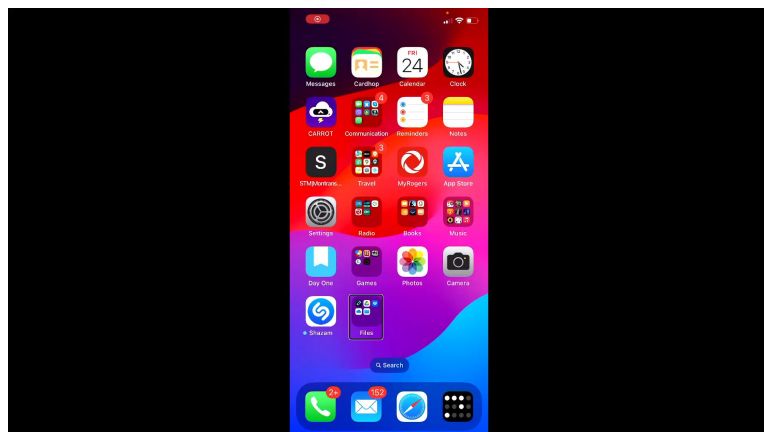
The Envoy Connect is a small, affordable audiobook player which CELA launched 2 years ago.. It's like an mp3 player as it can remember your last reading position and skips backwards and forwards through the tracks of a book. The low cost makes it affordable for users and if someone doesn't know how to use a computer, they can mail it back to us to reload with books. For a presentation about reading in the future you may wonder why we're featuring it. CELA is committed to providing many reading device options for both tech saavy and less

technologically inclined readers. Several libraries are starting offer Envoy Connect devices for loan.

Quick demo will include:

- Overview of buttons and charging features
- Sample of sound
- CELA Connect demo

EasyReader app demo



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The Dolphin EasyReader app is an example of an accessible reading app that will read DAISY and other audio and e-text materials. The app is free and supports CELA's Direct to player service and is available on Apple, Android Amazon and desktop platforms.

Demo:

- Using VoiceOver starting with opening the app
- Opening book
- Accessibility features: audio and visual highlighting of text

<https://yourdolphin.com/EasyReader-App>

Amazon Alexa smart speaker

Accessible Reading Canada Skill



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Our next demo shows how the Amazon Alexa smartspeaker can read CELA books. CELA ran a pilot project on this two years ago, and we plan to launch it in coming months.

Other accessible libraries also developing these.

Useful for print disabilities and convenient for everyone.

Apps through Smartspeakers are called skills. You may ask why ours isn't called the CELA skill - we chose this name, e.g. bibliocaeb thought it was the "Caribbean"

Level the voice-activated playing field: Kindle

books and audible are already easily accessible through Alexa.

Audio demo: opening app, menu options such as resuming a book, player options

Future of specialised devices

- Switches
- Braille displays
- 3-D printing



Switches

3d printing price drop.

Braille displays – price coming down

Brailliant bi40x plays audiobooks.

Multiline braille displays.

Optima braille computer without screen using mainstream components and windows so easily upgradable. In general, specialised hardware is hard to upgrade with latest mainstream tech.

3d print for maps and other visual to tactile applications

Pause for questions?

Switch image credit:

<https://www.neilsquire.ca/event/adaptive-switch-training-workshop-microsoft/>

AI and audiobook creation

- Efficient way to create accessible books
- Deepzen and Eleven LABs
- Google and Apple working on AI audiobook narration; Audible has AI narrated books
- 90% of survey respondents preferred human-voice narration (How do you read study – NNELS 2019)



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Artificial Intelligence is being used to create audiobooks – an efficient way to put text into audio. It differs from text to speech in that it can mimic a more natural sound of the human voice, or even sound exactly like someone else. Companies like Google and Apple have been working on AI narrated audio books, and you can find AI narrated books through Audible. Two AI audiobook tools are Deepzen and Eleven Labs in case you'd like to try it out.

In 2019, the National Network for Equitable

Library Services (NNEELS) , carried out the “How do you Read Study” to learn about the reading habits and preferences of people with print disabilities in Canada. The results showed that audiobooks were the most popular format for leisure reading. When asked about reading ebooks vs audiobooks, 61% preferred audiobooks with 90% indicating they preferred human narration. While AI narrated audiobooks are the future, there will always be room for the human narrators.

Resources:

<https://theconversation.com/ai-narrated-audiobooks-are-here-and-they-raise-some-serious-ethical-questions-197656>

Role of publishers in the accessible book landscape

- Born accessible publishing movement
- Canada invested \$22.8 million towards Accessible Book Funding (2019-24)
- Future of book publication will include ability to easily produce accessible formats



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Born accessible movement.

Movements in the publishing landscape towards making reading materials accessible at source, not after the fact. In the wider world of accessible reading, not only do we need the right technology to operate a book, but the book files, in any format must be structured and standardized to be navigable, and easy to use.

books created as accessible ePub files that can be used to produce alternate formats. Between 2019-2024 the Department of Canadian Heritage provided 22.8 million

towards Accessible Book Funding to support the production and distribution of accessible digital books by Canadian independent publishers in support of the born accessible movement.

Another significant event in the accessible book movement is that the European Accessibility Act will go into force in June 2025 and directs that all digital books sold in the EU marketplace must be accessible. These inclusive approaches towards creating accessible content at the time of publication will ensure that the number of accessible books will increase and readers with print disabilities will be able to study, work and enjoy books without long delays waiting for an accessible format.

CELA accessible reading initiatives

- [Accessible Audiobook Project](#) just concluded
- Epub to braille
- Synching e-text and audio books
- Participating in DAISY.org [Reading Apps User Requirements](#)



commercial audiobooks project completed
End of March 2025.

Funded by Accessibility Standards Canada
General goal = Understand landscape of state
of accessibility for audiobooks and develop
guidelines for best practices for publishers.

Main insights:

Readers with and without Print disabilities
share similar needs and preferences for
audiobooks.

Need for customization of audiobooks and
platforms. Image descriptions notes depend
on type of books and reader preference.

Wishlist for future: Synchronising text and audio and precise search in audiobook.

Collaboration with DAISY.org in Reading Apps User Requirements project.

ePub to Braille, =explores features for ePub to make braille transcription easier.

What are the trends for the future?



Equalize
reading
experience



Lower costs



Specialized
features
more
mainstream



Mainstream
devices
gaining more
features



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General historic trends in evolving tech continue into future

- Specialized devices = less expensive, smaller, multifunctional.
- Mainstream devices include accessibility features for accessibility making commercial books compatible for print disabilities.
- One can hope for accessible devices adding more features similar to mainstream and the mainstream ones becoming more and more accessible so both will meet in the middle.

- CD replaced with low cost hybrid low tech devices.
- Smart speakers are new frontier of accessible reading platforms.
- AI improves options for scanning and narrating print material.

Reading equality dream

Books regardless of format would...

Cost the same as print.
Maintain the same **quality**.
Published at the same **time**.



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