

Braille Conversion Technology

# Equal Access for the Blind

[www.withni.com](http://www.withni.com)

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# Introduction



A company that solves the problem of education  
and information access for the visually impaired

Braille transcription technology which saves time and cost  
by reducing book production time from 6 months ~ 1 year to a single day

**High volume real time braille transcription technology**



# The voice of the visually impaired

We exist but we are treated as if we don't exist.



# SENSEE Story : Video Clip



# Problem : A Social Mission

1. Long production time : 6 months ~ 1 year
2. Insufficient accessible contents : under 2% of e-books
3. Lack of a content management system

Fact:

48

The number of books transcribed by Korean national library in 2016

- Labor : 34 people
- Avg. time : 149hr/book
- Avg. cost : \$1,400/book

When a visually impaired university student requests a braille textbook, the semester is almost over before it is received.

# What's SENSEE?



	Text file production	Braille file production	Braille book production
Current methods	1 ~ 3 months	2 ~ 4 months	6 months
SENSEE	30 seconds		1 day

SENSEE allows fast and efficient production of contents for the visually impaired.

# Comparison of Production Time

## Current process

**6 months**

- ① Typing or OCR
- ② Proofreading
- ③ **Text File**
- ④ Transcription
- ⑤ Proofreading
- ⑥ **Braille File**
- ⑦ Proofreading and printing
- ⑧ **Braille Book**

VS



- ① Automatic transcription

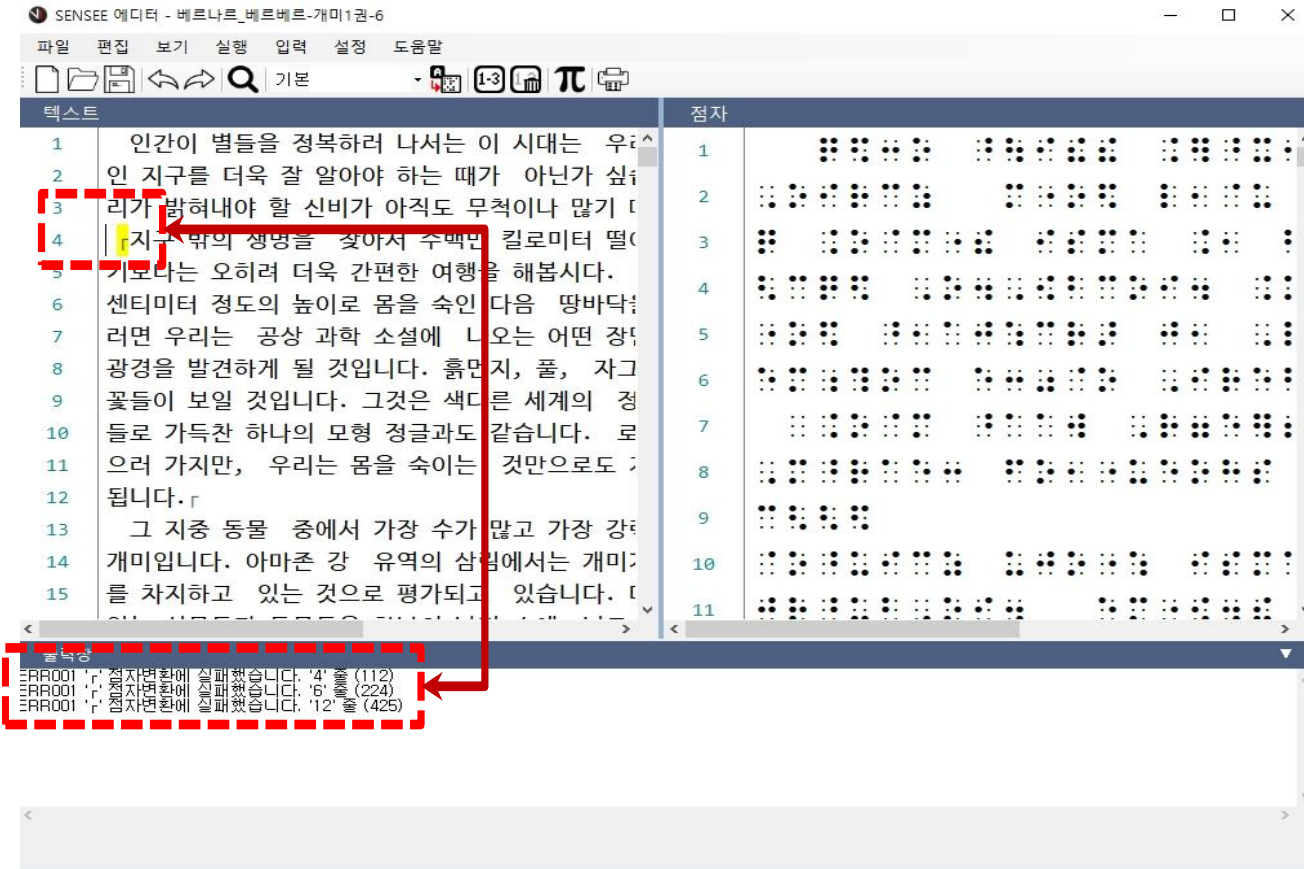
**30 seconds**

- ② Proofreading and printing

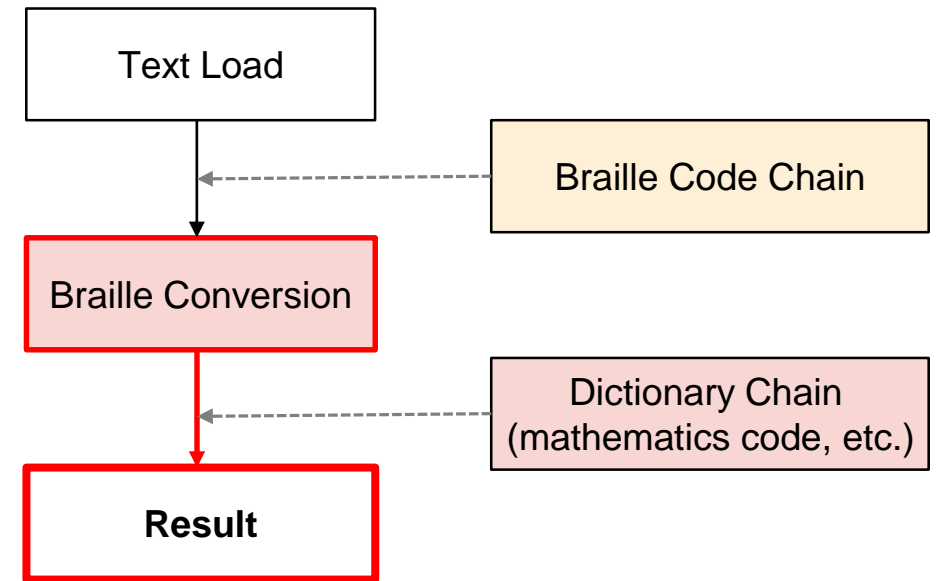
- ③ **Braille Book**

**1 day**



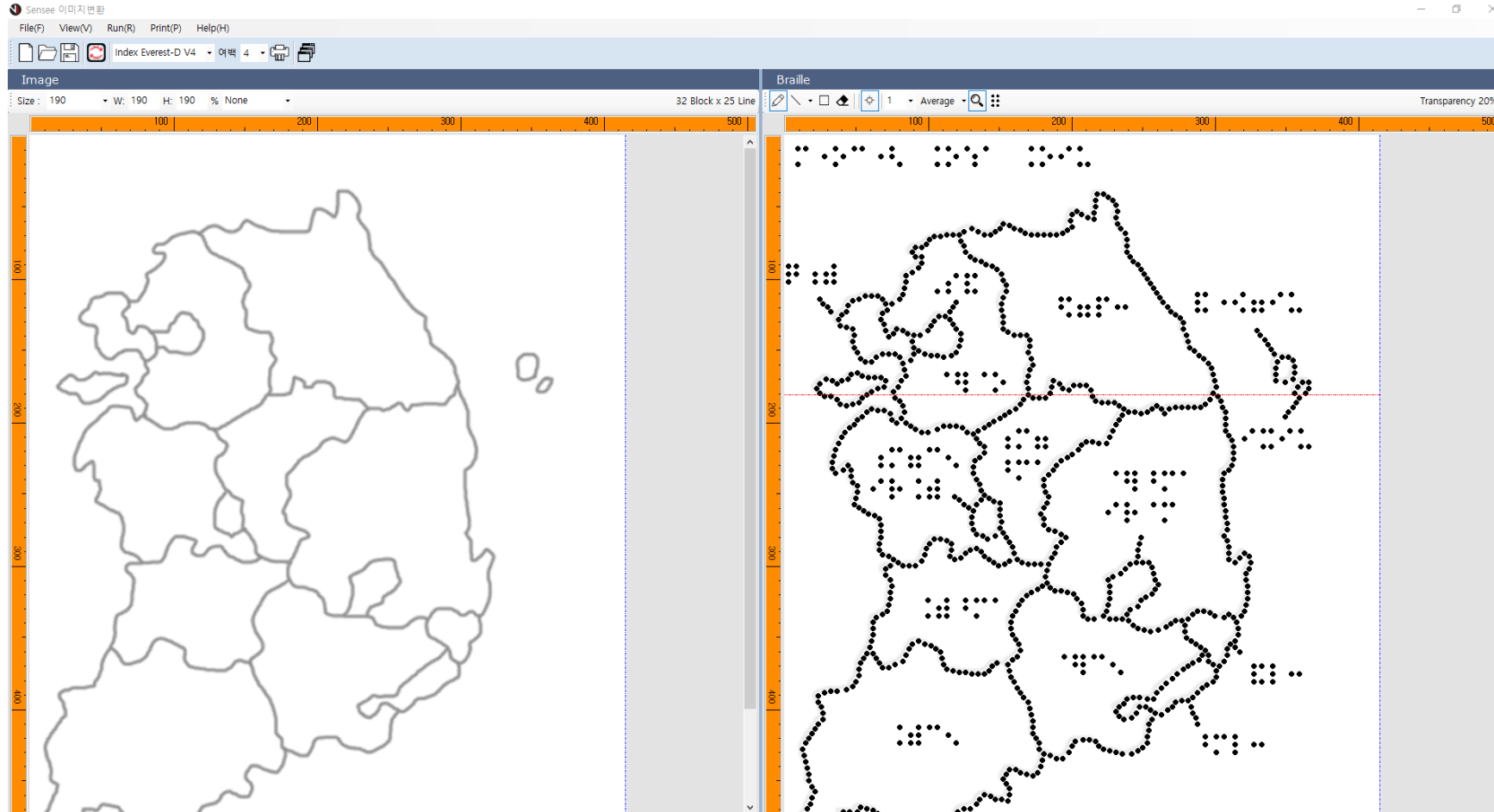


## Algorithm



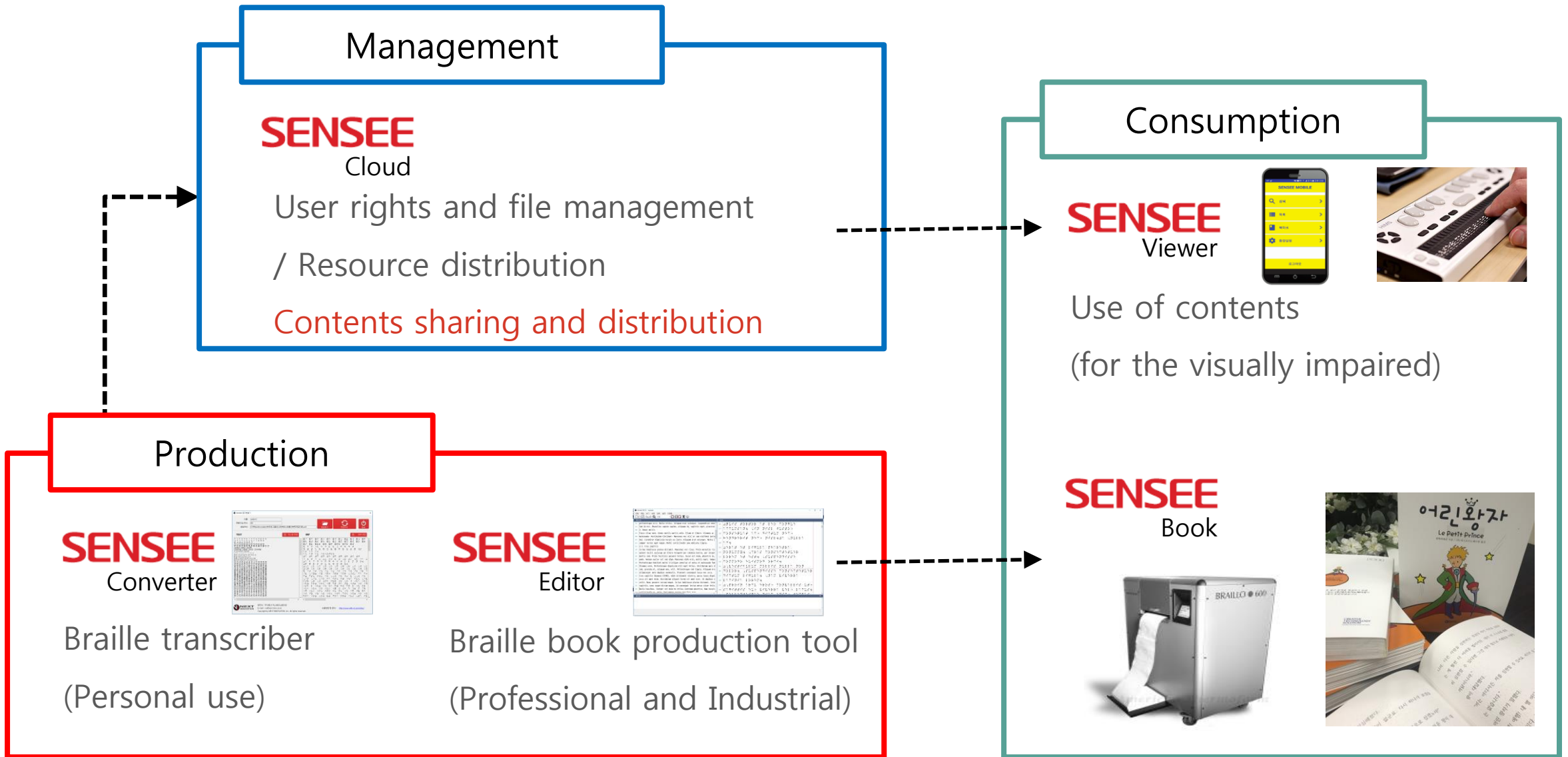
A function automatically indicating that correction or proof-reading is needed.

# SENSEE Image Braille

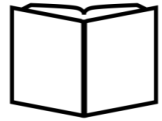


An image braille making by using Vision technology

# Line-up : A New Ecosystem



# Changes made by SENSEE



**+5,000**



**+30,000**



**+40,000**

In 2018

1. There were 600 braille books in El Salvador in the past.

Using SENSEE, in about a month, the number has increased to 5,000 books.

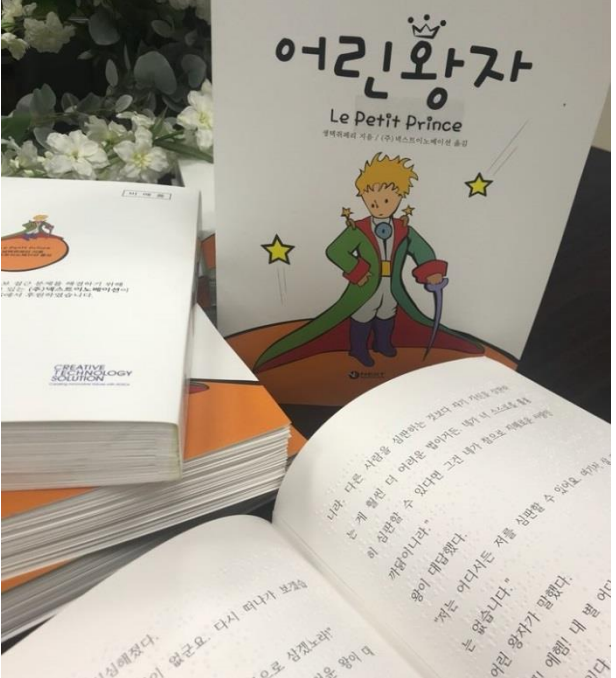
It is changing into a country that can self-produce braille contents.

2. 30,000 contents have been converted to braille by using SENSEE.

3. In Korea, the number of visually impaired people directly and indirectly influenced by SENSEE is 40,000.



# Examples of braille books made with SENSEE



About 120 book titles.

## USA (B2C)

- Population: 7.3 M
- Market: \$1B/year  
(USA PWD Report: \$5 B/year)



## C.A. (B2B)

- Population: 14.8 M
- Market: \$100 M/year
- Intl. Cooperation business
- SENSEE Braille Center, 2019



## Korea (B2B)

- Population: 0.25 M
- Market: \$10 M/year
- Alternative contents making and providing business (POD business)
- Projects of combining administrative e-network of public organizations
- cooperative business of alternative contents making for private organizations



**280 million people**

We are looking for the partners to change the world.



# Next Mission



The beginning of everything is from a little concern.  
A little concern for the visually impaired is  
a start for all changes.

Thank you



“Alone we can do so little;  
Together we can do so much.”

Helen Keller

Together we can change the world  
and change our lives for the better.