



How Text-to-Speech Solutions help  
Learners and how Publishers benefit

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## Why use Text to Speech in Education ?

## 21st Century Classrooms : Technology is changing the learning experience forever

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- **Technology is rapidly penetrating the classroom**
- **The move towards online learning content is accelerated by the growing use of devices in education**
- **Learning on mobile devices is growing exponentially**
- **Simulations and Serious Gaming are becoming more commonplace in learning**
- **Text to speech can be a great help for learners with different learning styles**
- **Text to speech is a technology that fits very well with the Universal Design for Learning principles**



Text-to-Speech can be one of the technologies that helps publishers to convince readers to switch from analogue to innovative and interactive digital solutions

No two students learn in the same way.



# Engaging students with Universal Design for Learning



Students learn in **different**  
**ways for different content.**

# Today's Learners

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## *Engagement*

Comprehension, Foreign Languages, Online Learners, Universal Design for Learning, Vocal Assistance for forms, Bi-modal presentation



## *Convenience*

Mobile Usability Learning on-the-go Personal preference Busy adult and part-time learners who need to multi-task

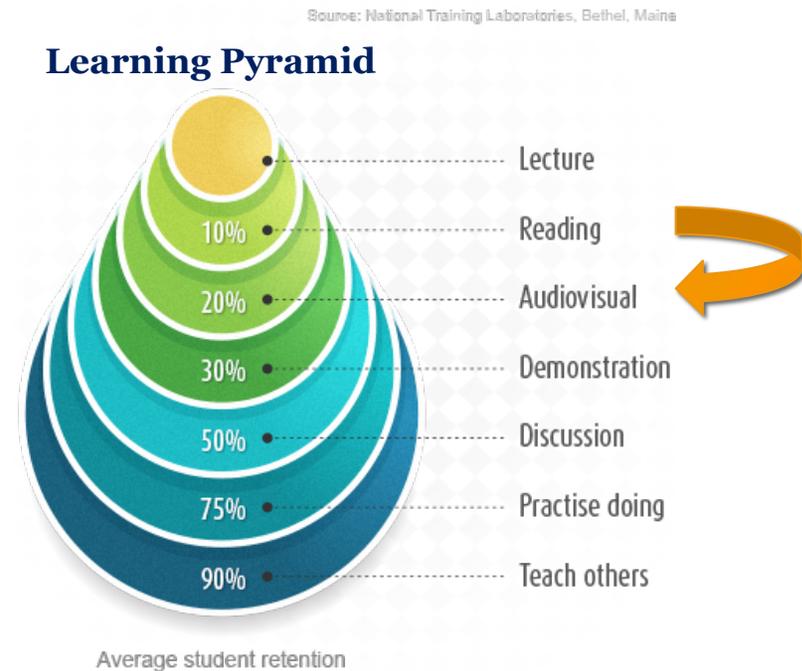


## *Accessibility and always-on*

20% of the population with: Limited Literary Skills, Visual Impairments, Learning Disabilities, Dyslexia, Foreign-born

# Importantly, bimodal reading benefits ALL learners

- Improved word recognition skills and vocabulary.
- Improved reading comprehension, fluency, accuracy, and concentration.
- Improved information recall and learning/memory enhancement.
- Increased motivation and more positive attitude with regard to reading.
- Increased reading self-confidence and perceived performance.





## Text-to-Speech Technology & Universal Design for Learning (UDL)

- Every learner has favored methods for obtaining, comprehending, and retaining information (and this can be situationally determined)
- Text to speech technologies, like ReadSpeaker's, can allow learners to listen to and better see course material, documents, or other reading assignments easily - increasing the accessibility of online course text
- This can improve access further by increasing availability to all who access an online system

# Three solutions that cater for publishers' unique needs

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## TTS SaaS platform solutions (web API)

for reading aloud of any  
online learning content  
(html/documents/forms/  
quizzes) in real-time

## TTS License solutions (SDK/ server)

for reading aloud of  
learning content online  
and offline (eBooks,  
documents, apps)

## TTS production solutions (mp3/ wav)

for (pre-)producing audio  
files to be embedded in  
learning/training  
materials (SCORM, ppt)

ReadSpeaker portfolio of TTS solutions is unique for its wide and deep coverage of applications for publishing

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# Educational Publishing

## Case Studies

# Case Study 1: Online and Offline eBook Reading Platform



Cengage operates as an educational content, technology, and services provider for Higher Education and K–12, professional, and library markets worldwide.  
MindTap is an innovative eBook platform for all its titles.

## Challenge

Faced with mounting competition in the eLearning and education technology markets, Cengage aimed to provide students and teachers with technologies to support bimodal learning through delivery of content in multiple forms.

## Solution

After a competitive selection process, ReadSpeaker was one of the 5 core apps added to the platform's main screen. ReadSpeaker's technology solutions easily integrated with and enhanced Cengage's product offering.

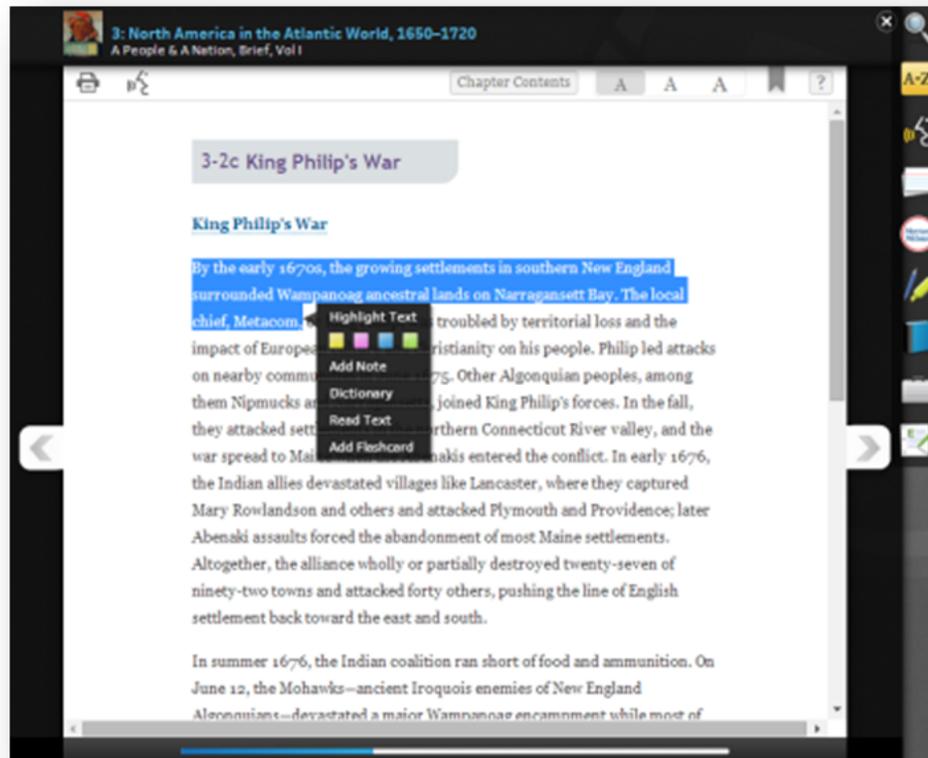
## Result

Cengage experienced exceptional success with the ReadSpeaker app. Usage of the ReadSpeaker app by Cengage users grew from under 40 thousand in 2011 to more than 9 million in 2015 and ~8% of all page views now generate a ReadSpeaker activation. MindTap outperforms competitive learning apps by a large margin due to its many innovative technologies

## Challenge 2 Solution 2

Based on the enormous success of its learning platform, the MindTap team wanted to deliver its solutions also in an offline mobile app.  
ReadSpeaker has delivered the offline reading TTS SDK for use in the MindTap mobile app in early 2017.

# Case Study 1: Online and Offline eBook Reading Platform



# Case Study 2 : Document Viewing and Reading

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Discovery Education is a leading k-12 provider that transforms classrooms, empowers teachers and captivates students by leading the way in providing high quality, dynamic, digital content to school districts large and small, rural and suburban and everything in between.

## Challenge

Discovery wanted to add UDL and accessibility components added to its highly multimedia based learning applications. The reading functionality needed to be customized in order to read both html and document content. They also wanted to avoid duplicate buttons for viewing and for listening to the various documents

## Solution

ReadSpeaker provided a solution that could function as the document viewing and document reading solution, providing a one-stop shop solution for Discovery and its learners. The solution also contains enhanced reading support for mathematical formulaes.

## Result

Every year more than 10M listens for the ReadSpeaker listen function are activated

# Case Study 2 : Document Viewing and Reading

The screenshot shows the Discovery Education interface. At the top, there is a search bar and navigation links like 'My DE Services', 'My Content', 'Builder Tools', 'Classroom Manager', 'Professional Learning', and 'My Notebook'. The main content area displays a reading passage titled 'Fossils' with a 'Listen' button. The passage text includes: 'When you hear the word *extinct*, what comes to mind? You might think about giant dragonflies and fierce dinosaurs. Maybe you imagine ancient bones buried deep in the ground. You may have seen the bones of an extinct organism in a museum.' It also features two images: one of fossilized bones with the caption 'These fossilized bones may be from humans that lived long ago.' and another of a scallop shell fossil with the caption 'This fossil is an imprint of a scallop shell in'.

## Cloud-Based Multilingual Solution

ReadSpeaker Enterprise Highlighting consists of a Listen button and an integrated fully keyboard-controllable audio player.



## Settings

The settings panel is divided into two main sections: 'Highlighting' and 'Reading'. Under 'Highlighting', there is a 'Text highlighting' toggle set to 'On'. Below it, 'Highlighting options' is set to 'Word and sentence'. There are color selection options for 'Word color' and 'Sentence color', each with a palette of colors and an 'Underline' option. The 'Text color' section also has a color palette. Under 'Reading', there is an 'Enhanced text visibility' toggle set to 'Off' and a 'Speed' section with radio buttons for 'Slow', 'Medium' (selected), and 'Fast'.

# Case Study 3 : Offline Assessments

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ETS develops, administers and scores more than 50 million assessment tests annually in more than 180 countries, at more than 9,000 locations worldwide.

## Challenge

Faced with growing needs for an accessibility solution for its tests in several states in the USA, ETS initially used native on-device TTS technology, resulting in massive complaints for bad pronunciations and angry students and parents. ETS then searched for a suitable solution to seamlessly integrate the text-to-speech offering into its OFFLINE high-stakes assessments with one seamless high-quality solution for every device

## Solution

ReadSpeaker offered its offline licensing product that seamlessly integrated via an SDK into the offline assessment solution from ETS that have been deployed to more than 500,000 students across some of the larger states in the USA in 2017.

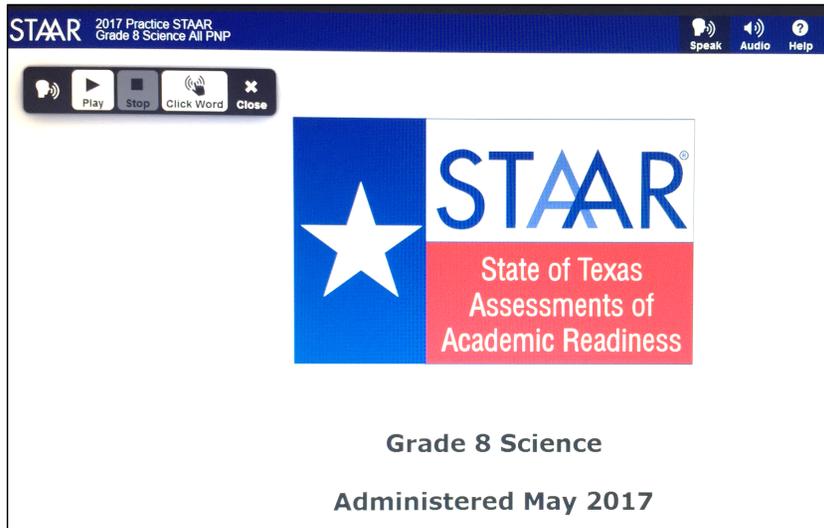
## Result

Tests rolled out with text-to-speech included in many of its assessments, saving the organizations massive amounts of money and effort to have “readers” available to read the assessments to those learners that struggle with reading, with NO complaints.

## Next Step

Currently looking to roll-out a solution to service the growing market of Google Chromebooks with a high-quality (online) TTS solution to be delivered in the testing season in 2018

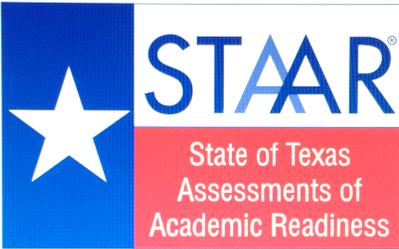
# Case Study 3 : Offline Assessments



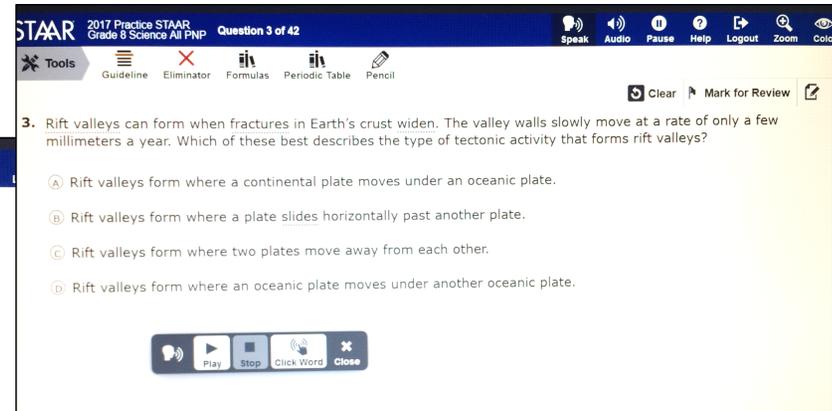
2017 Practice STAAR  
Grade 8 Science All PNP

Speak Audio Help

Play Stop Click Word Close



Grade 8 Science  
Administered May 2017



2017 Practice STAAR  
Grade 8 Science All PNP Question 3 of 42

Speak Audio Pause Help Logout Zoom Color

Tools

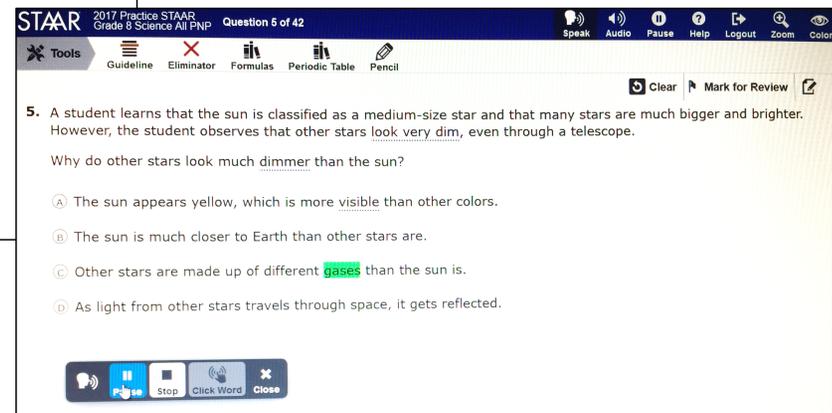
Guideline Eliminator Formulas Periodic Table Pencil

Clear Mark for Review

3. Rift valleys can form when fractures in Earth's crust widen. The valley walls slowly move at a rate of only a few millimeters a year. Which of these best describes the type of tectonic activity that forms rift valleys?

- A Rift valleys form where a continental plate moves under an oceanic plate.
- B Rift valleys form where a plate slides horizontally past another plate.
- C Rift valleys form where two plates move away from each other.
- D Rift valleys form where an oceanic plate moves under another oceanic plate.

Play Stop Click Word Close



2017 Practice STAAR  
Grade 8 Science All PNP Question 5 of 42

Speak Audio Pause Help Logout Zoom Color

Tools

Guideline Eliminator Formulas Periodic Table Pencil

Clear Mark for Review

5. A student learns that the sun is classified as a medium-size star and that many stars are much bigger and brighter. However, the student observes that other stars look very dim, even through a telescope.

Why do other stars look much dimmer than the sun?

- A The sun appears yellow, which is more visible than other colors.
- B The sun is much closer to Earth than other stars are.
- C Other stars are made up of different gases than the sun is.
- D As light from other stars travels through space, it gets reflected.

Play Stop Click Word Close

# Case Study 4 : Language Learning

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Ever since 1961 the first language lab was made under the name Tandberg. During those 50+ years, its solutions have found their way to over 100 countries and 50,000 classroom installations, with close relations with its customers they have become the global leader in teacher-led language labs and next gen virtual language learning environments.

## Challenge

Sanako’s teaching concept is based on active learning. In order to deliver on that concept all content needs to be interactive and also “listenable” with very high pronunciation quality. Since the total amount of texts is very large and is constantly developing (incl quizzes and tests), a natural voice became unpractical and impossible to implement across the full curriculum.

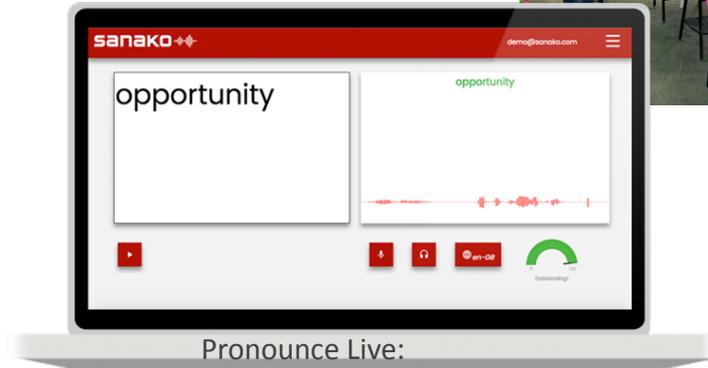
## Solution

Provide a built-in TTS engine for pronunciations across the full curriculum in the SANAKO courseware to ensure that all content can be read-aloud.

## Result

Learner can listen and has access to “native” audio content 24/7. Even listening helps to improve communication skills. And interestingly enough, 99% of ELL apps on the market that are claiming to improve pronunciation are simply TTS and do not include no speech recognition... (SANAKO does offer that)

# Case Study 4 : Language Learning



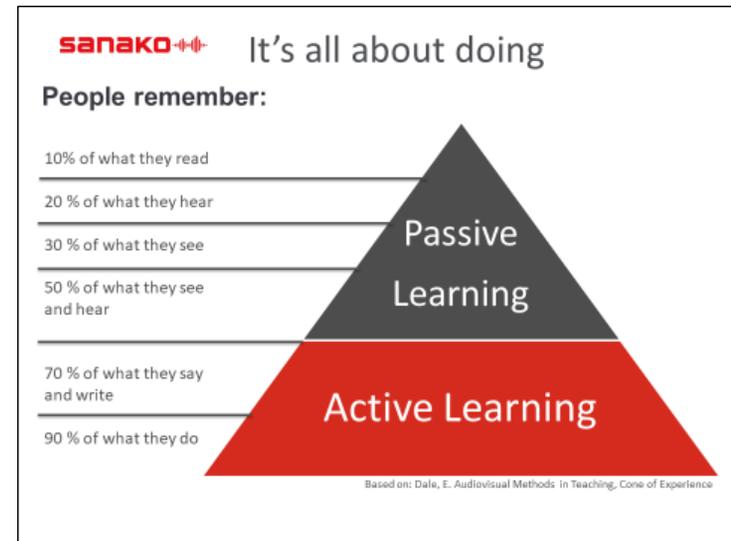
Pronounce Live:

Pronunciation tool for easy online practice of vocabulary or sentences

- Listen, Practice and Review

Text to speech and speech recognition

Scoring and feedback



# Case Study 5 : Corporate Training by Simulations

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Jutten develops a totally new technology of retail training where simulation and gamification becomes the new standard of learning technology in the future.

Jutten believes that learning by using simulation and gamification will increase motivation, participation, accelerate learning and improve performance. People are changing, technology is changing and the retail business is changing, so that's why Jutten prepares its clients to be Next Generation Proof.

## Challenge

one seamless high-quality solution for every device

## Solution

in 2017.

## Result

complaints.

# Case Study 5 : Corporate Training by Simulations

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Jutten Cashier Trainer

## Case Study 6 : Simulation-based learning for visual and kinesthetic learners

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# ELECTUDE

Electude is the creator of the world's leading automotive e-learning solution that is used by thousands of schools, companies and governmental organisations in over 50 countries. Solutions which provide a unique and effective tool to teach all automotive learners by making it interactive, engaging, highly efficient and fun through the use of gaming technology.

### Challenge

one seamless high-quality solution for every device

### Solution

in 2017.

### Result

complaints.

# Case Study 6 : Simulation-based learning for visual and kinesthetic learners

## Case Study Electude

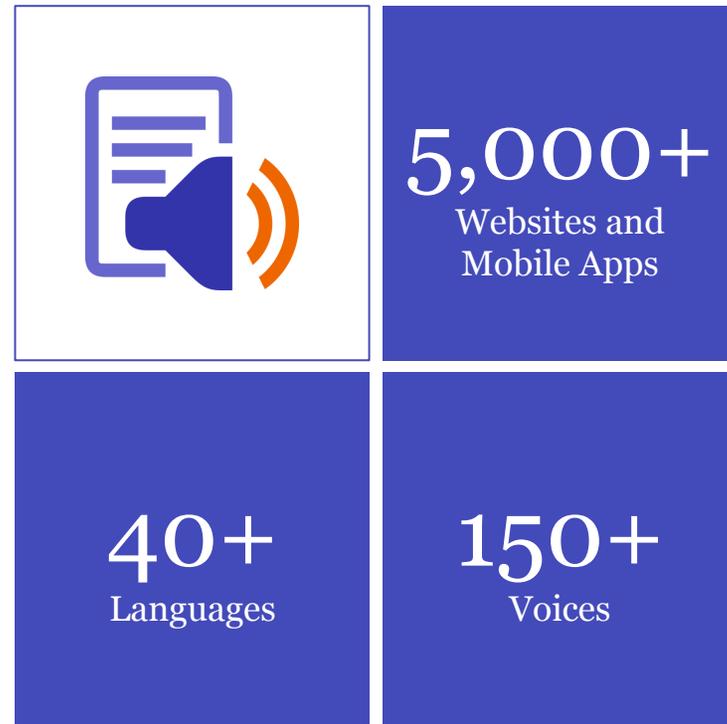
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# ReadSpeaker in Summary

# Premier Provider of Text-to-Speech Technology

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**ReadSpeaker** develops text-to-speech technologies and services to interpret and audibly read text in a synthetic yet naturalized, human sounding voice, entirely managed on its own proprietary technology infrastructure



## Uniquely positioned

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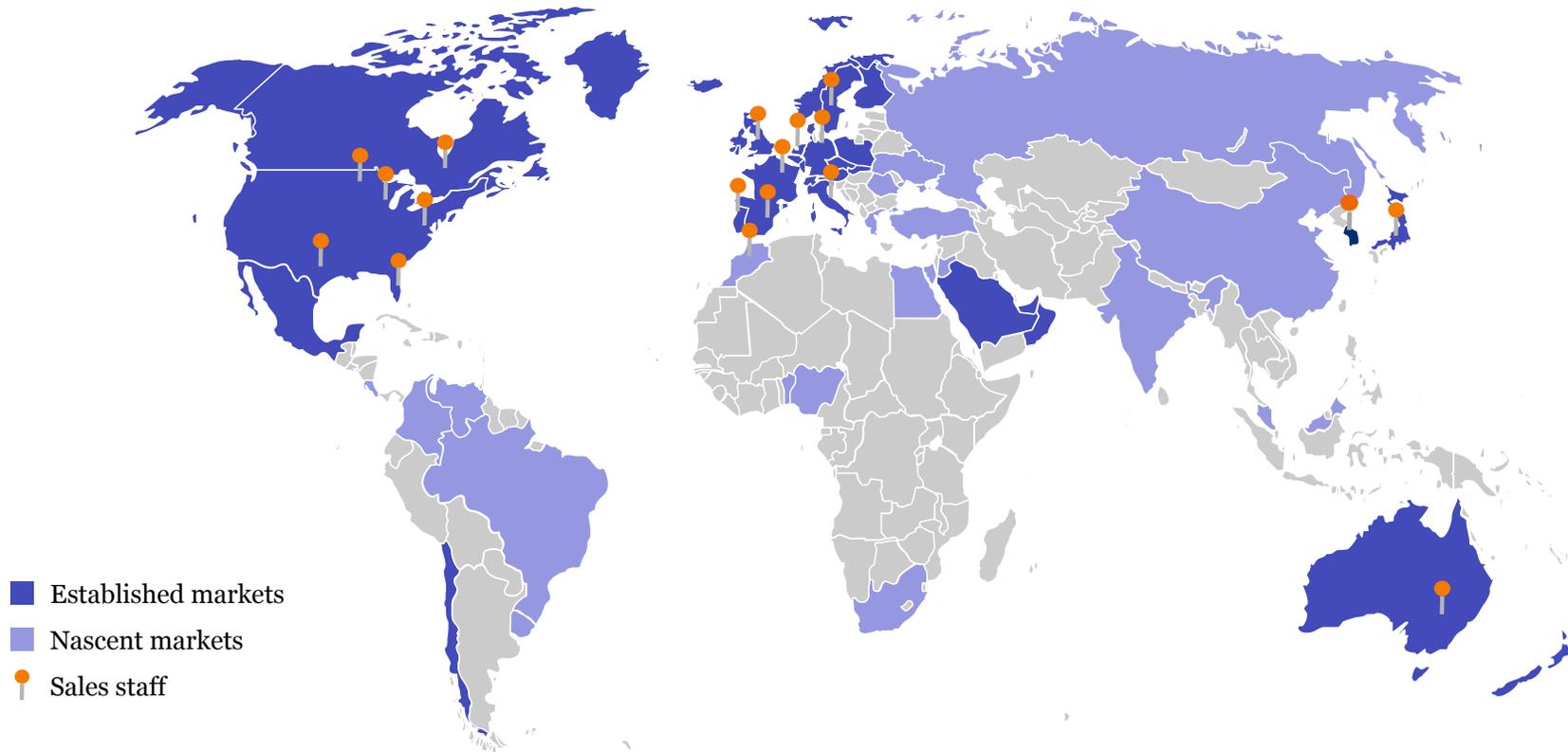
- 1. Voice Quality** – Own voice development delivering high quality voices, that are the most natural sounding voices on the market
- 2. End-to-End Technology Platform** – full control of software and infrastructure allows for short feedback loop and quick resolutions
- 3. Fast and Reliable** – private cloud-based streaming solution offers the market's lowest latency and highest availability (99,995% in 2016)

# Some Publishing Clients



# Worldwide Presence with clients in 65 countries

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# ReadSpeaker is the only provider of the 4 leading TTS suppliers



- Both online (SaaS) and offline (SDK and server licenses)
- Covering hundreds of voices in 45+ languages

		AT&T	Acapela Group	Cepstral	CereProc	Diotek	IVONA Software	Loquendo	Microsoft	NeoSpeech	Nuance	rSpeak Technologies	SVOX
Total	N	1,021	1,408	1,136	1,436	1,515	1,354	1,042	1,224	1,318	1,127	1,566	878
Correct	%	64.3	88.7	71.5	90.4	95.4	97.7	65.6	77.1	95.6	71.0	98.6	55.3

independent speech industry observer ASR News , Survey Summer 2016

# Available languages for TTS Cloud solutions

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American English	UK English	Spanish	French	German	Italian
Japanese	Korean	Mandarin + Taiwanese M	Arabic	Cantonese	Thai
Dutch + Flemish	AUS English	Swedish	Canadian French	LatinAm Spanish	Brazilian Portuguese
Russian	Polish	Turkish	Finnish	Danish	Norwegian
Czech	Slovak	Romanian	Hebrew	Portuguese	Greek
Faroer	Farsi	Frisian	Icelandic	Hindi	Urdu