

one size
does
not fit all



What is AAC?

Augmentative and Alternative Communication

=

all forms of communication other than oral speech that are used to express thoughts, needs, wants, and ideas.

We all use AAC when we make facial expressions or gestures, use symbols or pictures, or write.

People with severe speech or language problems rely on AAC to supplement existing speech or replace speech that is not functional.



In the US
an estimated **2%** of children aged
6-14 experience **difficulty** having
their speech **understood**.

Of these 735,000 children,
145,000 experience **severe**
communication problems.

Adding younger children of a similar nature, another 260,000 children aged 3 to 5 have problems being understood, and another 50,000 experience severe problems.

So potentially between
200,000 and 1 million American
children could **benefit** from a
TTS **voice** in AAC.

For years our reply had been:

technology was not quite ready

or

that it **wasn't legally or even physically feasible** for a child to be stuck in a sound booth for weeks to record their voice.

Hearing
an 8-year-old boy speak with
the voice of a grown man
or
a 6-year-old girl speaking with
a pitch-transformed adult female
voice can be **disconcerting**.



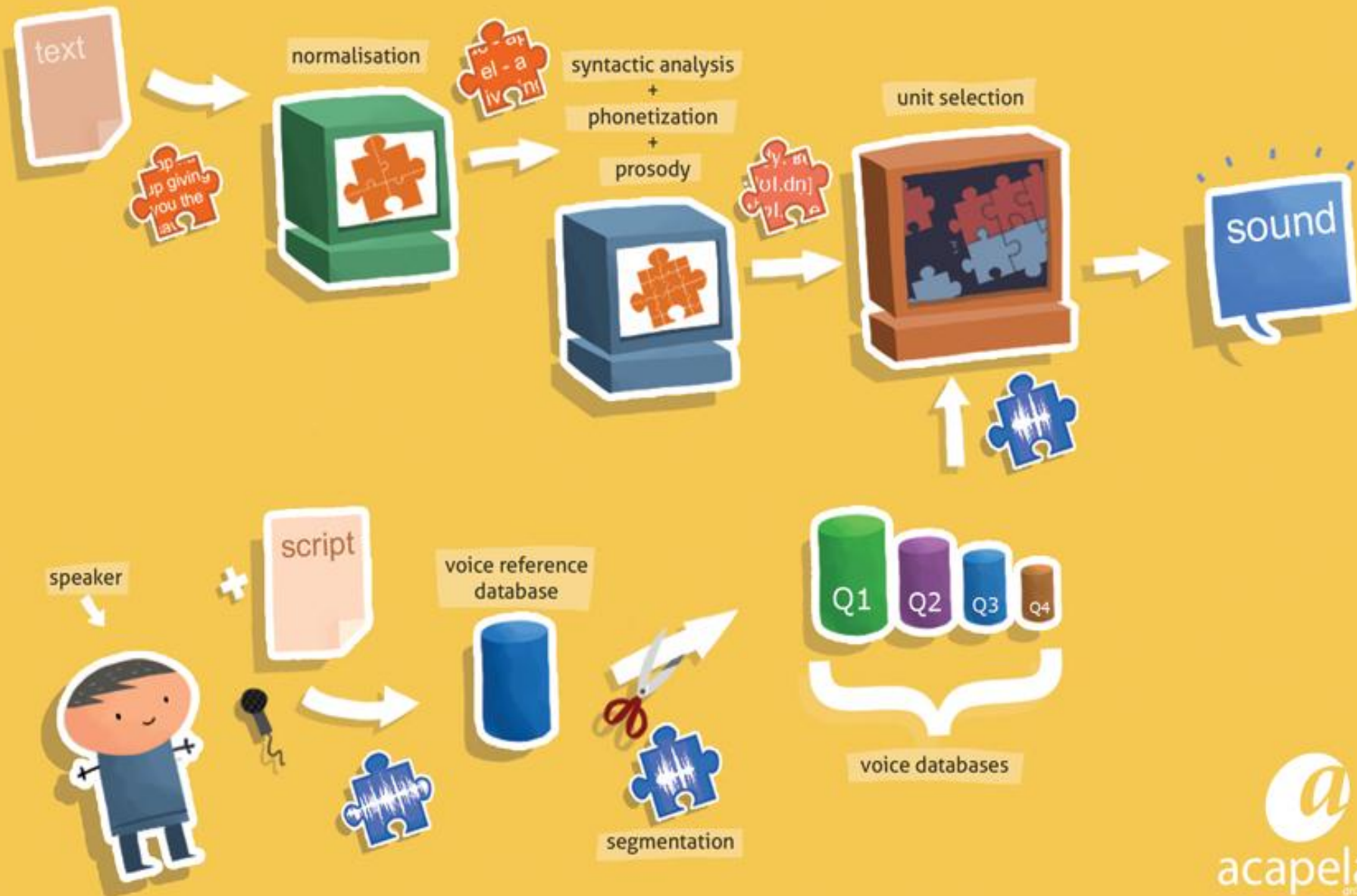


Up to that point we did younger voices by

- **pitch-transformation**
- **actors imitating a child,**

but **no one** had actually created high quality voices based on the recordings of real children.

How does text to speech work ?



The Team

Acapela Group

200 Text to Speech voices in 30 years

+

Assistive Ware

13 years in Augmentative and Alternative
Communication

+

The need of children

Step 1 - Create a new recording script

- easy for an 8-10 year old to read and still allow us to maintain a good coverage
- removing tongue twisters
- Adding things children need to say on a day-to-day basis,



- expressions and sounds that speaking children commonly use “My turn!”, “Its’ not fair!”, “Shut up!” recorded with more emphasis
- sounds such as a barking dog or a revving car as speaking kids often make such sounds while playing or reading picture books with their parents.

Step 2 - Identifying voice talents

- age group
- skilled readers and speakers
- delivering a consistent voice across multi-day recording sessions.
- children doing radio or TV commercials
- children to record a more standard test script
- small panel of professionals and parents
- identify which voice talent sounded most pleasant and appropriate for AAC.

Step 3 - Recording sessions

- planned during holidays and weekends not to disrupt schoolwork
- boys we had an additional challenge also close to having their voices break.

In fact, the first American boy we recorded provided excellent samples a few weeks before the recording sessions, but his voice started to break during the sessions and we had to throw away the resulting TTS voice for lack of consistency and start over.

- children still produce certain sounds that adults no longer
- children have not yet fully developed all the sounds adults make.
- presence from the Child Protection Organization

Step 4 - iterative improvements

- AssistiveWare staff **proof-listen large amounts** of text to identify pronunciation issues and
- Acapela Group **linguists adjusting** segmentation and defining pronunciation exceptions.
- **Field-testing** the voices by integrating them into Proloquo2Go and providing early access to a number of professionals and families.
- **A year and a half** on Harry & Rosie in UK English and Josh & Ella in US English.

<http://www.assistiveware.com/giving-children-voice-their-own>

<http://www.assistiveware.com/introducing-childrens-voices-proloquo2go>

The impact of Children voices on other user groups ^{1/2}

- the voices have a “wow” effect, even to advanced users & experts especially based on the naturalness of the voice.
- **other markets**: education, gaming, e-learning and edutainment but also visually and print impaired children
- all **other countries** are requesting the children voices which changes the paradigm of standard female/male voices of TTS supplier

The impact of Children voices on other user groups 2/2

- gender & age are now considered, we've started a **family** 😊
- the **mass personalization** in speech is becoming reality
- other **voice aspects** will appear to be mandatory in few years
- our **secret sauce** is becoming much better to produce quicker and better more personalized voices to the **benefit of all** our customers in all market segments

let's talk :-)

voices by Acapela Group

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Children Voices Demo at www.acapela-group.com