

# Conversational Interaction for Kids



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# Researchers are finding



- 80% of brain development happens by age 3
- A significant factor leading to high and low performing individuals is their exposure to conversation when they are young
- High performing individuals hear ~30 million more words by age 4

Unfortunately,

- Parents overestimate how much they speak to their kids
- And, it is very difficult to make up for lost time

# The problem



- Our adult lives have been enriched by easy internet access, but kids are not benefitting to the extent they could
  - Existing UI's like the QWERTY keyboard are inhibitors because young kids cannot spell or type well

# A solution

- Speech can be a very effective UI for kids - they can speak before they can spell or type
- And, speech recognition devices can supplement care-givers to put kids on a better path



# What we are doing

- Siliconic Home is developing an intelligent assistant for kids

## We have been primarily testing

- Google Cloud Speech Platform
- IBM Watson

## Other Major SR vendors

- Microsoft, Amazon, Apple & Nuance

# Some early findings

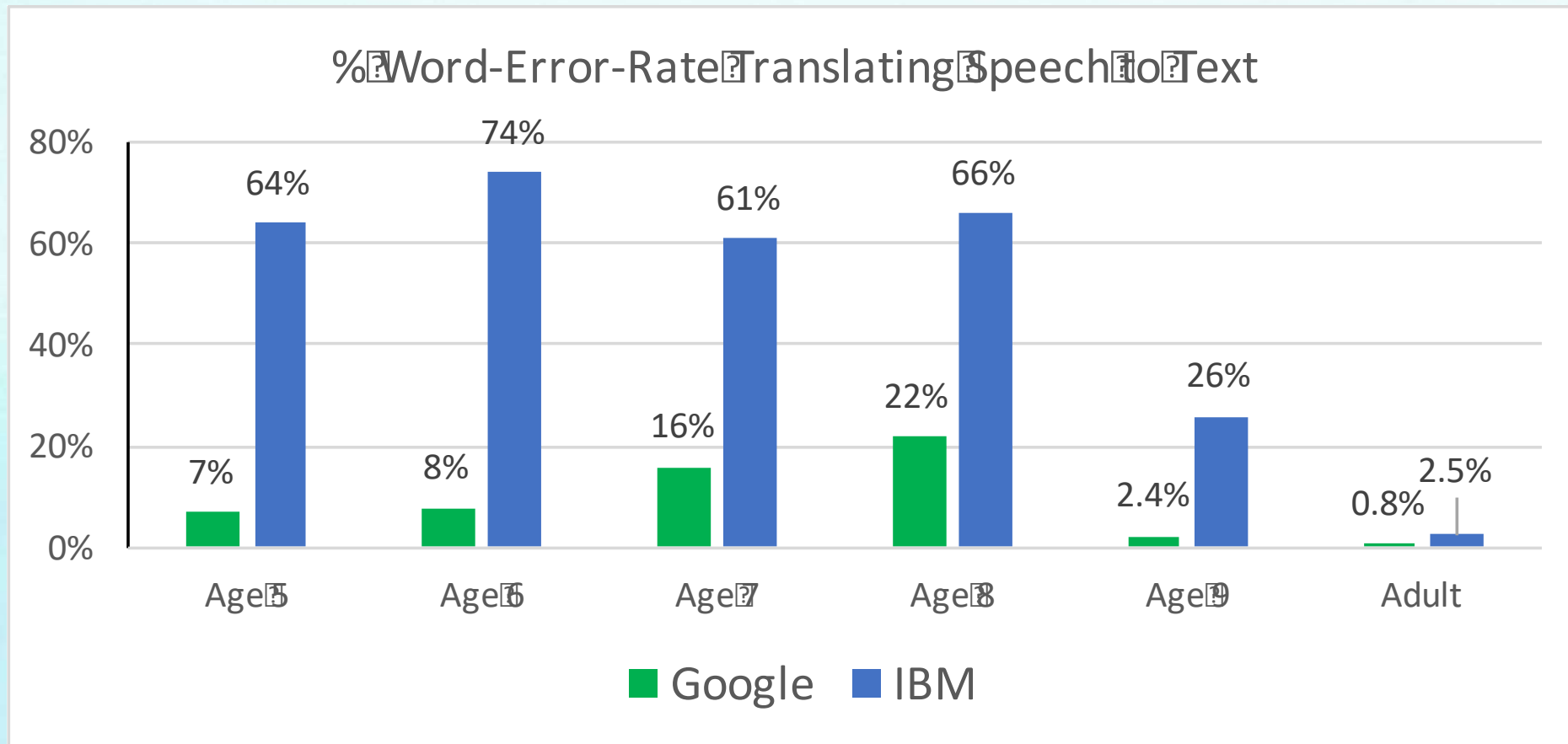
- Which platform is better at translating kid's speech?
- Which platform is easier to use?

Google

# More testing needed



- Google platform consistently better



# Child speech sample challenge

- Machine learning SR model building → large # of child speech samples\*
- ‘Good’ child speech samples more costly than adult samples
- Historically, 6% of Google Voice Speech users have been children

\* Utterances

# How will home assistants evolve

- Voice-User-Interface platforms designed just for kids are needed
- Device-side Speech Recognition (SR) for many reasons:
  - Privacy
  - Cost
  - Response (latency improvement)
  - Autonomous operation
- Better SR accuracy with limited 'Domains'





# Closing



- We encourage others to apply speech recognition to help kids
- Potential US market for 5-13 age group: ~ 2 million units/year



**Thank you**

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