# Speech assistants in the car / Coversational AI

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Mercedes-Benz
The best or nothing.

RD | U

# Problem Space

What is the customer problem?

- *User Interfaces have to be learned (pen, door, web, car)*
- *Its painful to waste his time*
- *Its frustrating if a UI is not intuitive*
- *Each car is different*

600 SEL

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Check
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Phone
Navigation
Magritte Way
Radio
FM
SUGGESTIONS
RES
SET+
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SET-
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AUTO
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Johannes
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SUGGESTIONS

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MENU
AUTO
MAX
PASSENGER AIR BAG
REAR
A/C
SYNC

NAVI MAP
RADIO MEDIA
TEL

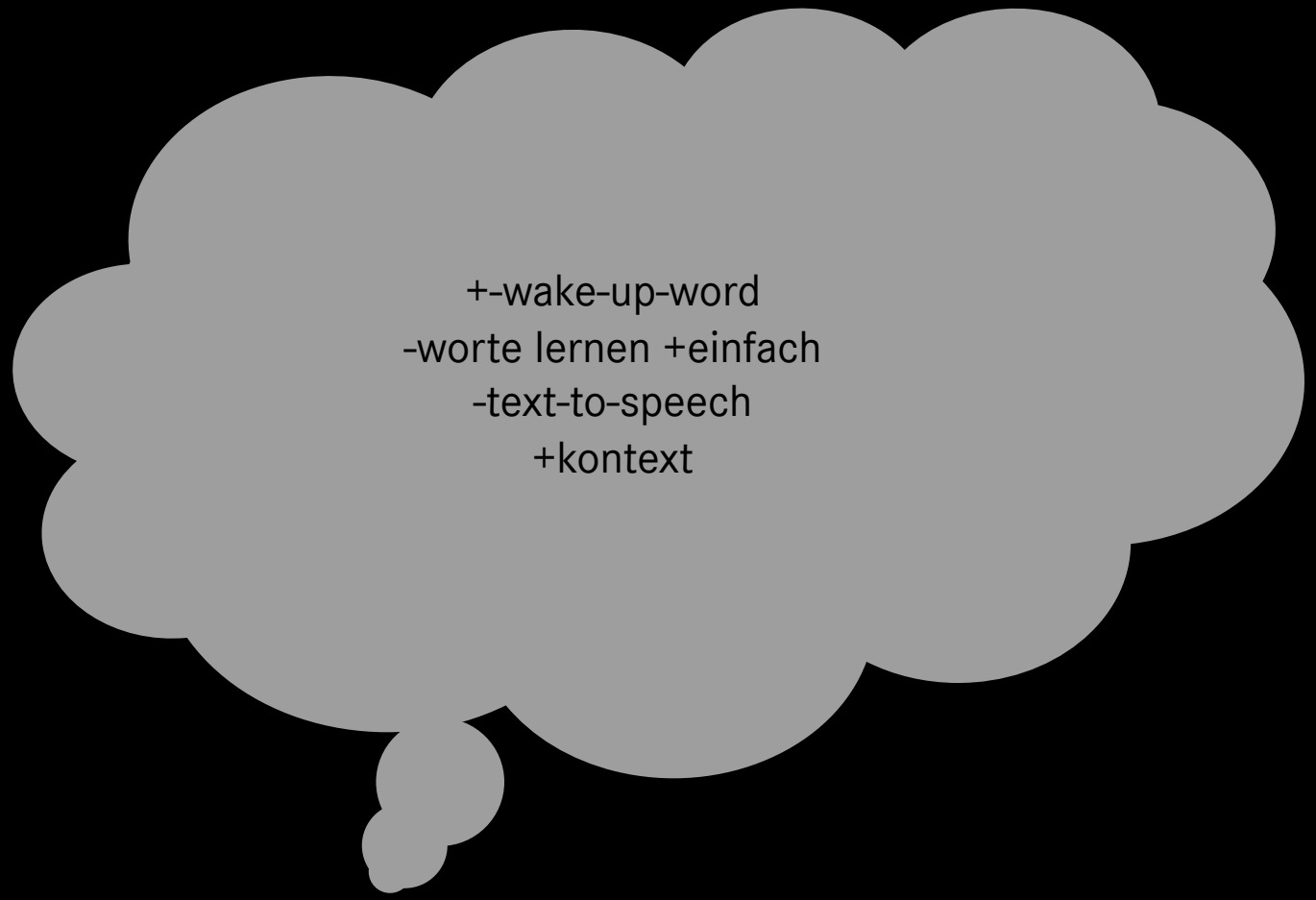
# Solution

What is it that we are already good at?

- *We talk all day*

How to design Conversational VUIs:

- *Brainstorming…*



# Solution

What is it that we are already good at?

- *We talk all day*

How to design Conversational VUIs:

- *Multistep*
- *Saying nothing is an option*
- *Interrupting the system*
- *Confirmation*
  - *Implicit*
  - *Explicit / Ask*
  - *Multi modal*
  - *Three tiered*

# Is it really that big of a problem?

For smart home:

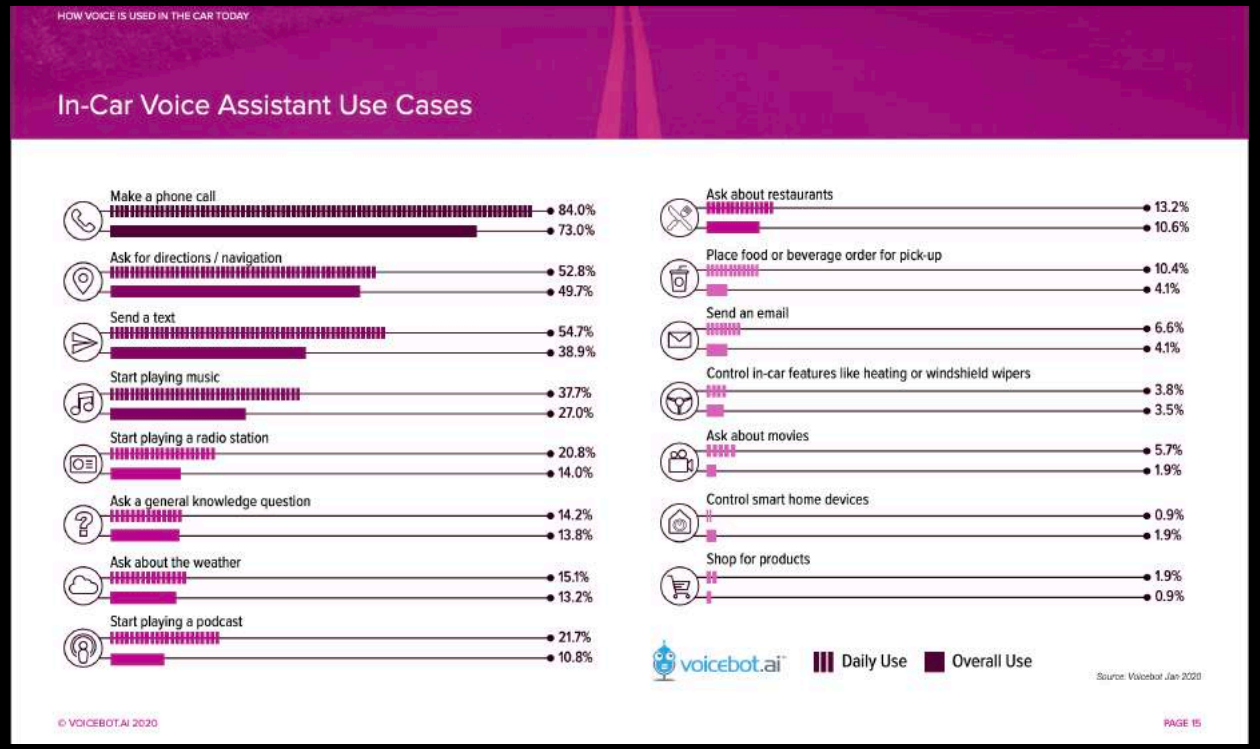
- *Early adopters*
- *Hands are not free: Cooking, Gloves*
- *Language barrier*

For cars:

- *Safety*
- *Fast access to functionalities*
- *Innovation*

# What about fancy features?

- *The basics are important*
- *the main domains: Telephony, Navigation, Messaging, Music*
- *Voicebot.AI* https://research.voicebot.ai/report-list/



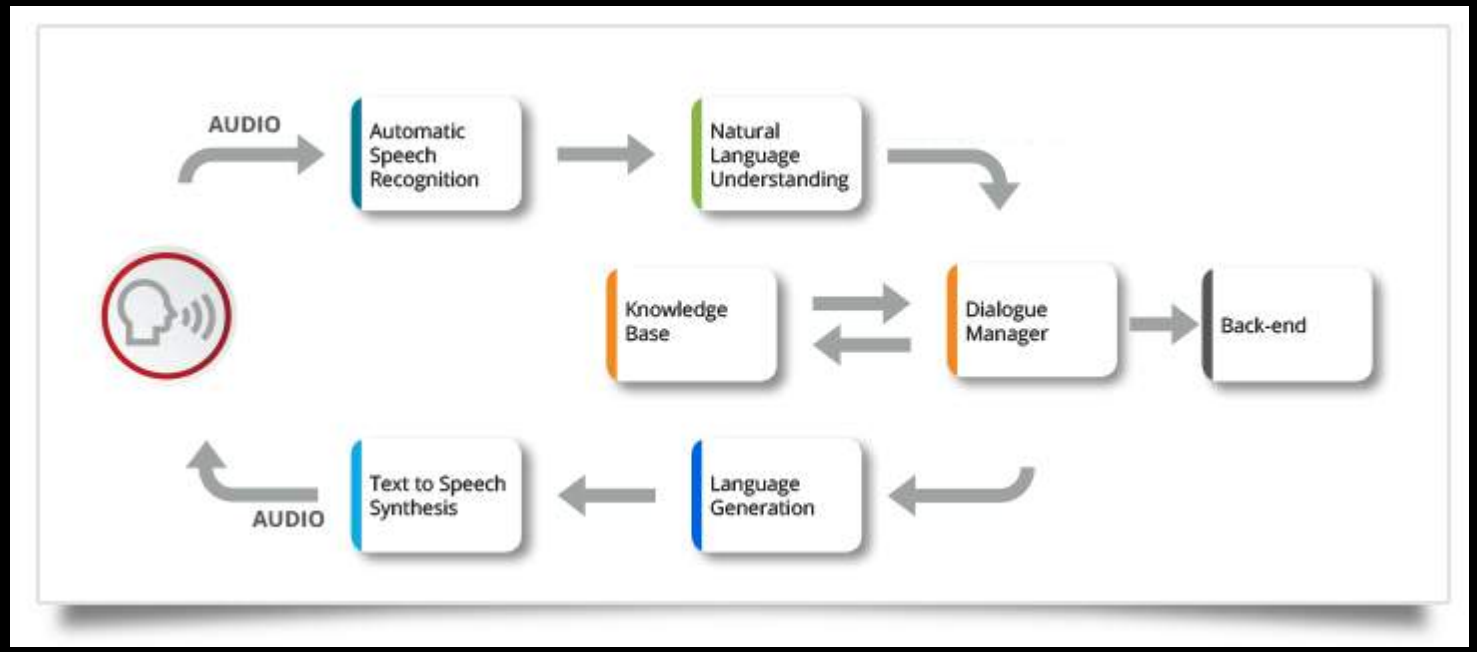
# Get the basics right

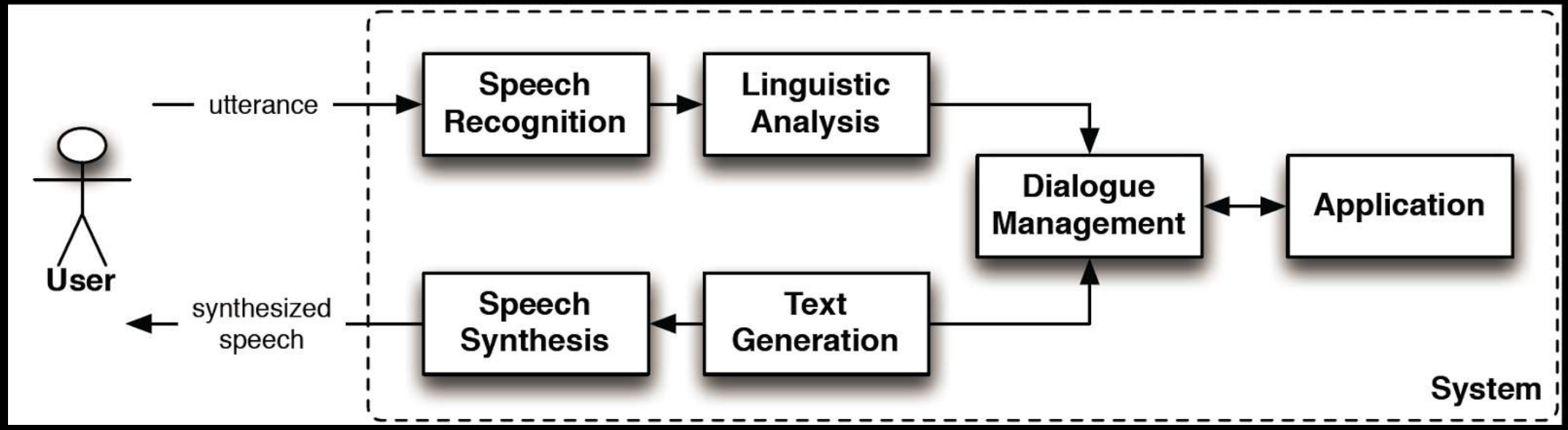
- *Accuracy and speed (distraction)*
- *Trust in speech technology*
- *Trust in the brand*

- *Noise*
- *Microphone (array) placement*
- *Multiple speaker (who to listen to)*
  - *S-Class Customer vs. A-Class customer*
- *Speaker authentication*
- *All these parameters might be different from car type to car type*

# Where is the journey going?

- *With autonomous there is going to be a shift towards fancy use cases*
- *Personality is important*
- *USP*
- *Platforms that give the freedom to develop*
- *Basics are going to be the same*


AUDIO
Automatic Speech Recognition
Natural Language Understanding
Knowledge Base
Dialogue Manager
Back-end
Text to Speech Synthesis
Language Generation
AUDIO


utterance
Speech Recognition
Linguistic Analysis
Dialogue Management
Application
User
synthesized speech
Speech Synthesis
Text Generation
System

# Chatbot Demo

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- https://github.com/Joapfel/Mercedes-Benz-Connected-Vehicle-Chatbot

- https://www.houndify.com/

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Thank you!