

# Conversational AI

*Convenience, Safety, and Driving Trust in Cars and Autonomous Vehicles*



Dr. Nils Lenke  
Sen. Director Innovation Management

# Cerence Facts

- 20+ years industry experience & leadership
- ~1,300 employees; ~700 in R&D
- Broad, multi-national presence
- 21 offices worldwide
- 320+ million cars with Cerence
- 60+ automotive customers
- 70+ languages supported
- ~1,250 patents
- FY 2019 revenue \$308 million (non-GAAP)



# Voice and AI-based assistants in passenger cars are normal

Mercedes Benz User Experience (MBUX)

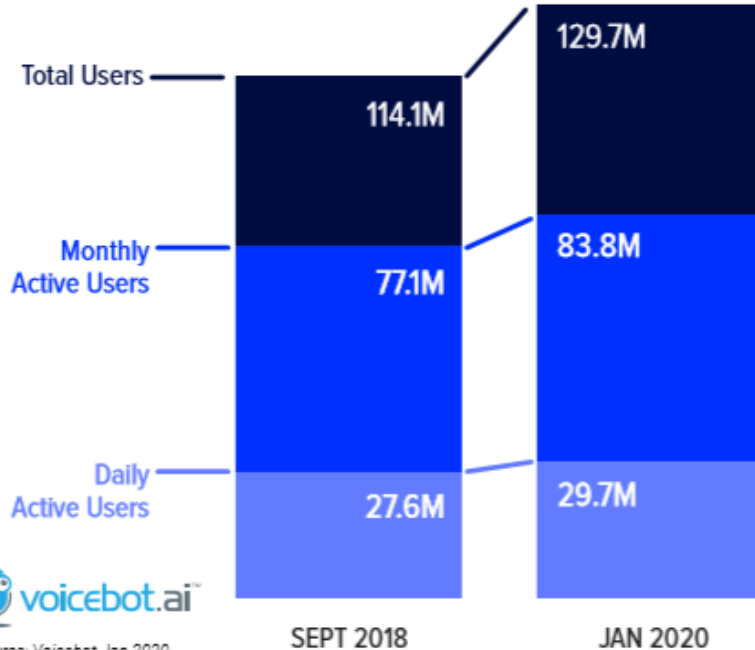


BMW Intelligent Personal Assistant (IPA)



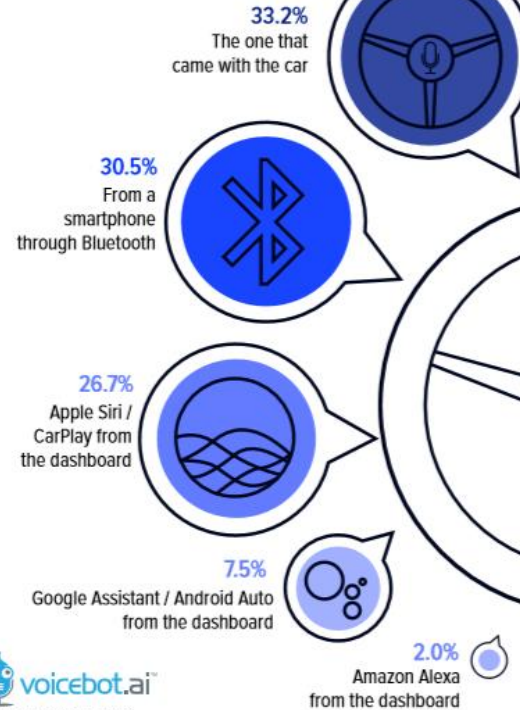
# Voice assistants are on the rise

## U.S. In-Car Voice Assistant Users



Source: Voicebot Jan 2020

## Voice Assistant Used In-Car by U.S. Adults



Source: Voicebot Jan 2020

# Speech in AVs as demonstrated at CES 2020

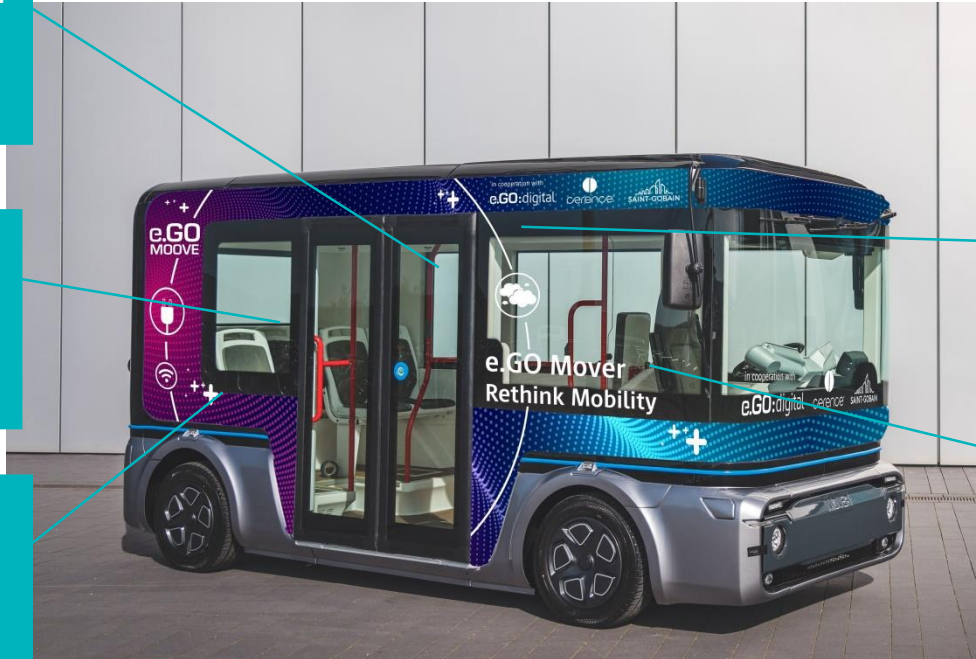
e.GO

SAINT-GOBAIN

Smart glass for  
projection  
inside

Smart glass for  
projection to  
outside

Microphone  
array for  
interaction  
from outside



360° degree  
microphone  
array for public  
audio zone

Mic and screen  
for “private”  
interaction zone

# Anthropomorphism drives trust

- Waytz, Heafner, & Epley (2014)
- used cues to instill anthropomorphism in users,
  - by giving the self-driving car a name (“Iris”),
  - a gender (female)
  - and voice output (using prerecorded prompts)
- then users had a **significantly higher trust** in the autonomous driving capabilities of the car.
- Furthermore, in the case of an accident caused by another car the autonomously driving car was **blamed less** by users

“Behavioral, physiological, and self-report measures revealed that participants trusted that the vehicle would perform more competently as it acquired more anthropomorphic features. Technology appears better able to perform its intended design when it seems to have a humanlike mind”

# Thank you!



[Nils.Lenke@Cerence.com](mailto:Nils.Lenke@Cerence.com)

