

# WHO ELSE?



Make AIs talk to each other!

Conversational AI for enterprises

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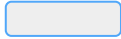
New normal: 65%  
of users search by

voice 

Conversational AI is a \$55bn  
e-commerce opportunity by 2025  
Gartner



# Phase 1: Every product will turn into a smart speaker



*Assistant, find me a taxi*

*Bot, book food delivery for 1 week*

*AI, find me a restaurant*

*AI, order household supplies*

*Siri, I need running gear*

..



Cars



Smart Homes



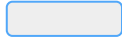
Wearables

Everything that user say becomes an e-commerce request

## Phase 2: Your company will be useable like a bot

*Assistant, please tell me the biggest cost drivers of our portfolio in categories A, B, C*

*AI, we have to restructure the sales department. Please find me the 15 top performers. Find a new workspace for them too.*



Factories  
& Industry 4.0



Knowledge  
Worker



Smart Cities &  
E-Governments

Organisational know-how  
becomes available by natural language queries

# Conversational AI is a paradigm shift for business models

## Report: Voice assistants in use to triple to 8 billion by 2023

7:42 pm CET • February 12, 2019



The use of voice assistants is set to triple over the next few years, according to a new forecast from the U.K.-based analysts at [Juniper Research](#). The firm estimates there will be 8 billion digital voice assistants in use by 2023, up from the 2.5 billion assistants in use at the end of 2018.

## COVID-19 Is Making Alexa And Siri A Hands-Free Necessity

Chuck Swoboda • 10:13am EDT



## Voice search has created a huge vulnerability at the heart of Google's business

Hannah Roberts • Nov 25, 2016, 4:20 PM



Google CEO Gester Panel

AP

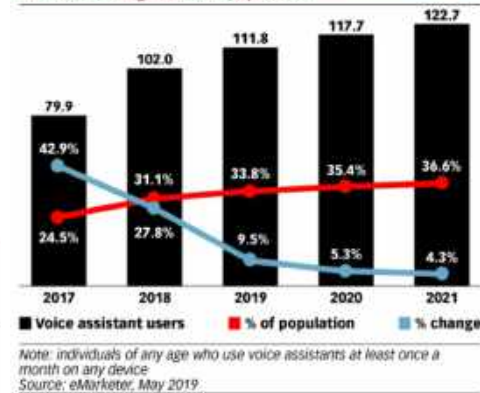
When the world shifted from desktop to smartphones, one thing didn't change: the existence of a screen on both devices.

The screen shrank, but it remained the medium through which we interact with computers.

For Google, that meant its core online advertising business — viable search ads on a webpage — remained intact and lucrative.

## US Voice Assistant Users and Penetration, 2017-2021

millions, % change and % of population



# A new philosophy for UIs & language as customer touchpoint




WIRED

LEARN MORE READ 10.27.2016 11:00 AM

## Your Voice Assistant May Be Getting Smarter, But It's Still Awkward

The more smart devices that sell, the more compelling the AI technology becomes. But the virtual assistants inside still stumble.



IDEO

EMOTION TYPE • TOOLS • PEOPLE • THINGS WE LOVE • THE FUTURE OF... WHAT WE MAKE



Why Gesture is the Next Big Thing in Design

BY DAVID HASE

Since Siri was introduced in 2011, the world has been increasingly saturated with voice interfaces. When we need to call the electrician, we ask Alexa. If we want to put on a movie, we ask the console to search for it. According to some estimates, more than 30 million voice-enabled devices reported the day in American homes by the end of 2017.



THE VERGE



SCIENCE

## WHY COMPANIES WANT TO MINE THE SECRETS IN YOUR VOICE

*Voices are highly personal, hard to fake, and contain surprising information about our mental health and behaviors.*



Science



Epilepsy patients with electrode implants have aided efforts to decipher speech.

WEHFT/STOCK.COM

Artificial intelligence turns brain activity into speech

# A driver of co-creation partnerships & public regulation of AI

## Tech Giants Team Up to Make AI Voice Assistants Device-Agnostic

BY JEFF BEZOS  
OCTOBER 12, 2018



Jeff Bezos: "Multiple simultaneous wake words provide the best option for customers"

A groundbreaking project, the Voice Interoperability Initiative, led by a host of major technology companies — including Amazon, Apple, Google, Microsoft, Samsung, and many others — aims to let consumers access multiple different AI voice assistants on any device, just by saying its wake word...

## Why The Internet Of Things Might Never Speak A Common Language

A single standard for smart homes and other connected devices sounds great, but some of the biggest tech firms don't seem interested.



The Tower of Babel by Peter Bruegel the Elder (1665) (ART BIBLE: WIKIMEDIA COMMONS)

## To Break Google's Monopoly on Search, Make Its Index Public

● The tech giant doesn't have to be dismantled. Sharing its crown jewels might reshape the internet.

By Robert Epstein



PHOTO ILLUSTRATION BY PHOTODISC/GETTY IMAGES

## DARPA wants to teach and test 'common sense' for AI

12:18 am EDT - October 12, 2018



It's a funny thing. AI can identify objects in a fraction of a second, imitate the human voice and recommend new music, but most machine "intelligence" lacks the most basic understanding of everyday objects and actions — in other words, common sense. DARPA is teaming up with the Seattle-based Allen Institute for Artificial Intelligence to see about changing that.

# Take away: Speech is more than voice



Voice Assistants  
Available



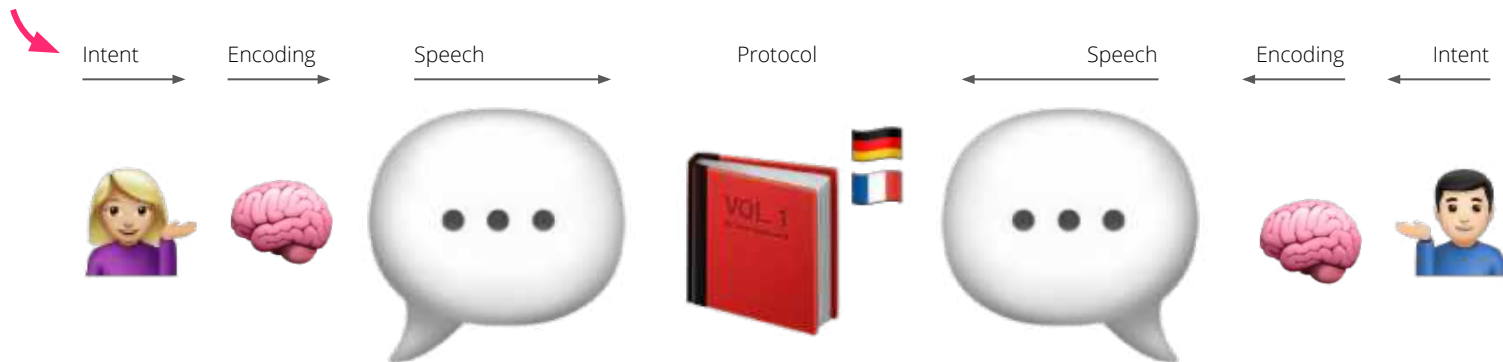
Gesture Interfaces  
Experimental: +5 years



Brain Machine Interfaces  
Experimental: +10 years

# Some say, it is time for an “Internet of Thoughts”

Reason why you talk to somebody



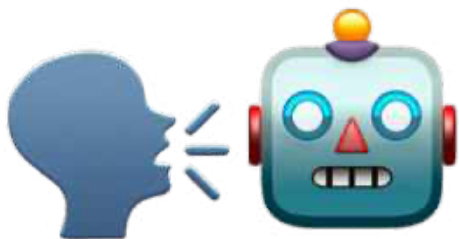
Problem: User have different language dictionaries



Joe Rogan & Elon Musk (05/2020)  
about Universal Language

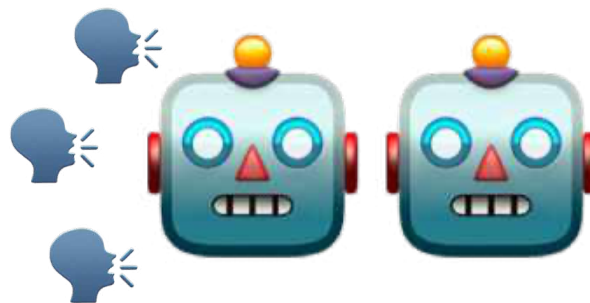


Reason: There are 2 dimensions of bias in NLP



How will AIs talk to users?

How do AIs interact with users?



How will AIs talk *about* users who talk to them?

Which labels will AIs use to store information?

# Problem 1: Every AI interprets human language differently

*I am hungry, AI order me Pizza.*



Note: AIs are only niche intelligent - they only work good in the domain they are trained for



Google

The user looks for a pizza



Nuance

The user is in Hungary and searches a pizzeria



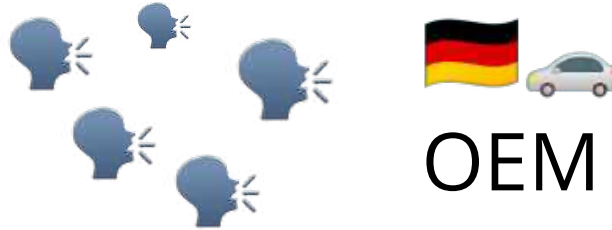
Bosch

Sorry, I didn't get it



100 AIs =  
100 Opinions

## Problem 2: To sell products globally OEMs must use multiple AIs



German AIs do not speak Russian, Chinese, etc.

# Problem 3: How will 5 AIs listening agree which one was meant?



*Alex, what do you think about ordering Pizza?*



Are you talking to me?



Your order will be delivered shortly

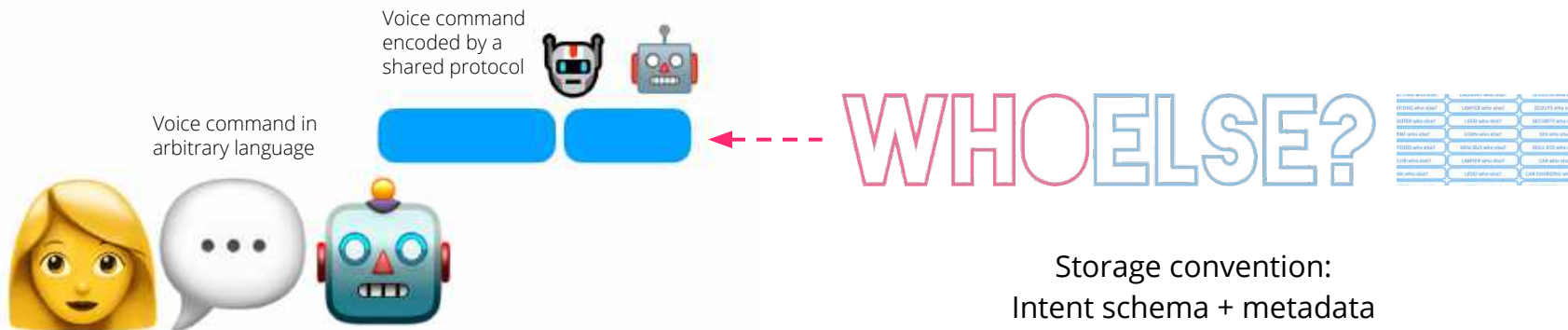


Sure, no problem



Alright!

# Focus: We develop shared languages between AI technologies



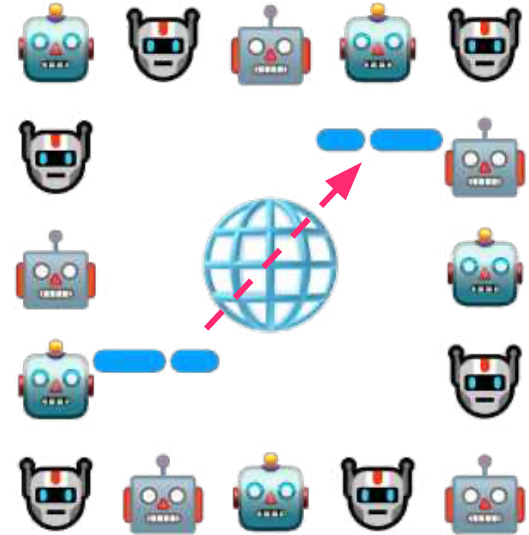
# Idea: whoelse.ai becomes an exchange to forward intents



*AI, I want to file my income tax*

*I have no clue what you talk about, but I find the right AI*

*Welcome at PWC, how can I help you?*

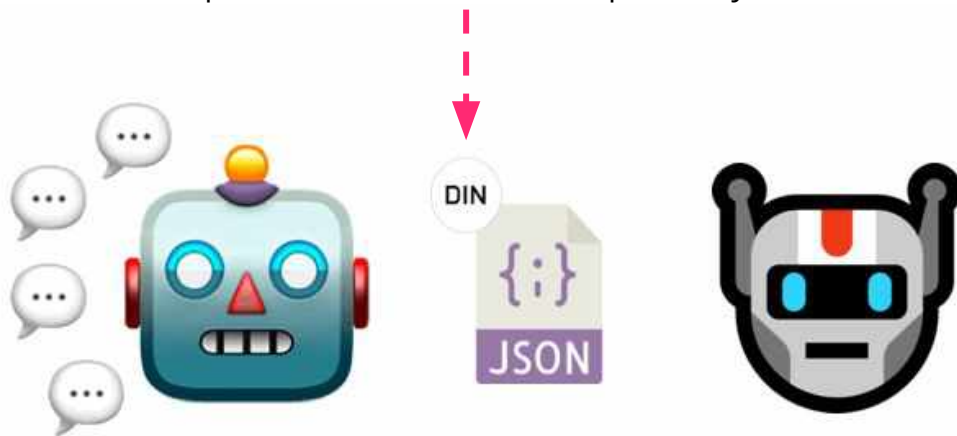


Als can find other Als suited to respond



# Go-2-Market: We setup industry standards for AI interoperability

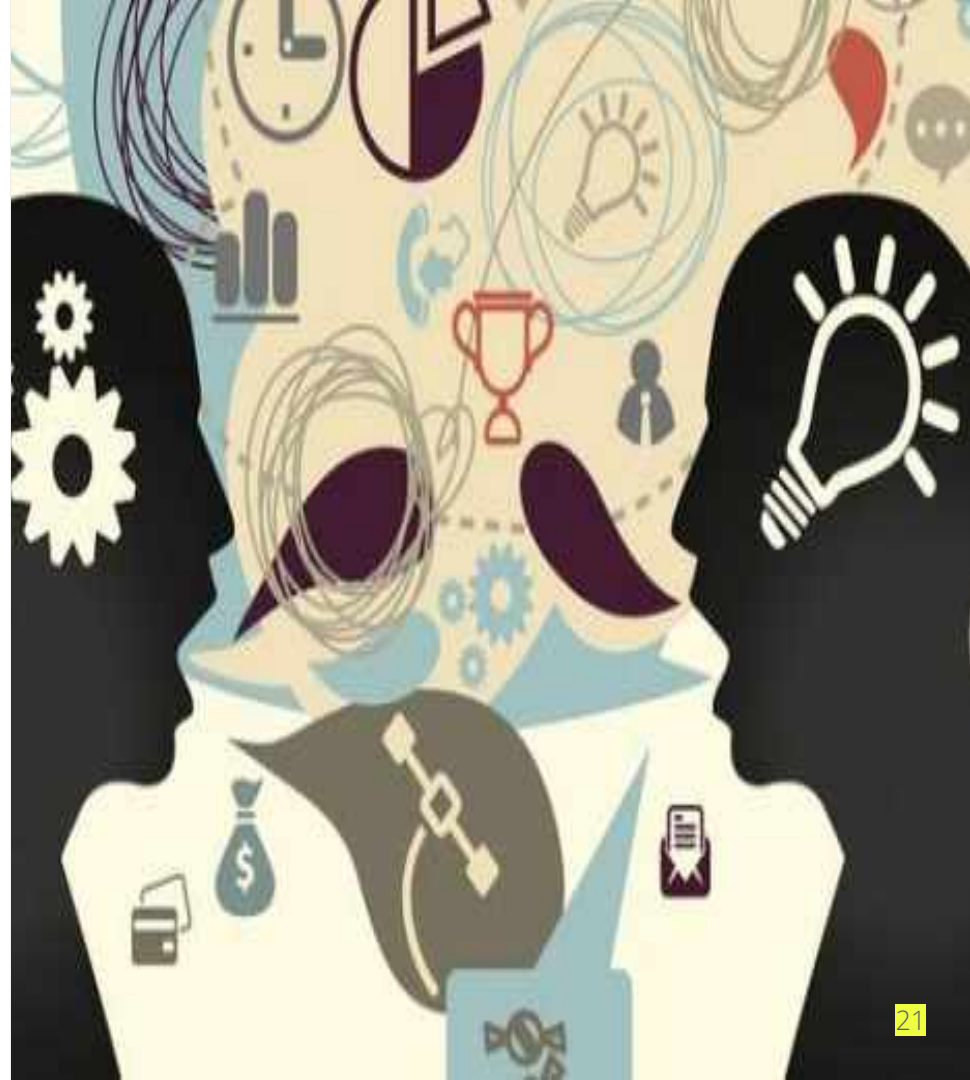
ISO-DIN consortiums agree on shared API specifications for NLP interoperability



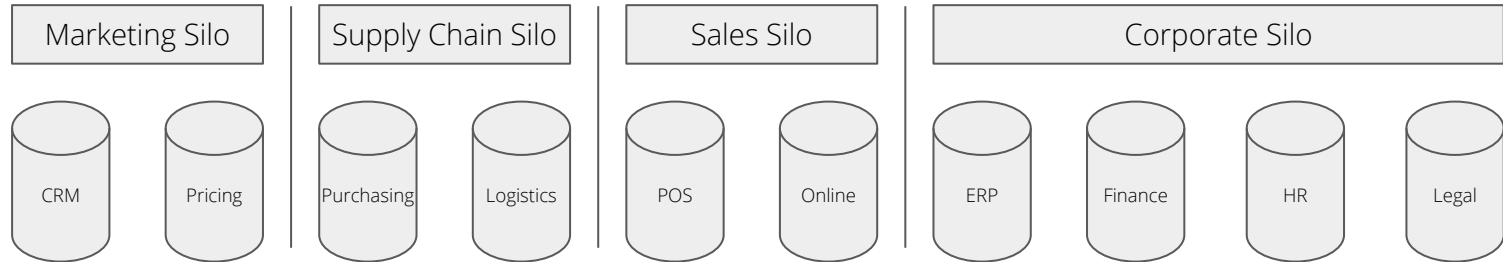
Read more: <http://din.whoelse.ai>

# Next: Companies must turn human knowledge into AI

Prepare you company for a conversational  
intelligence workforce

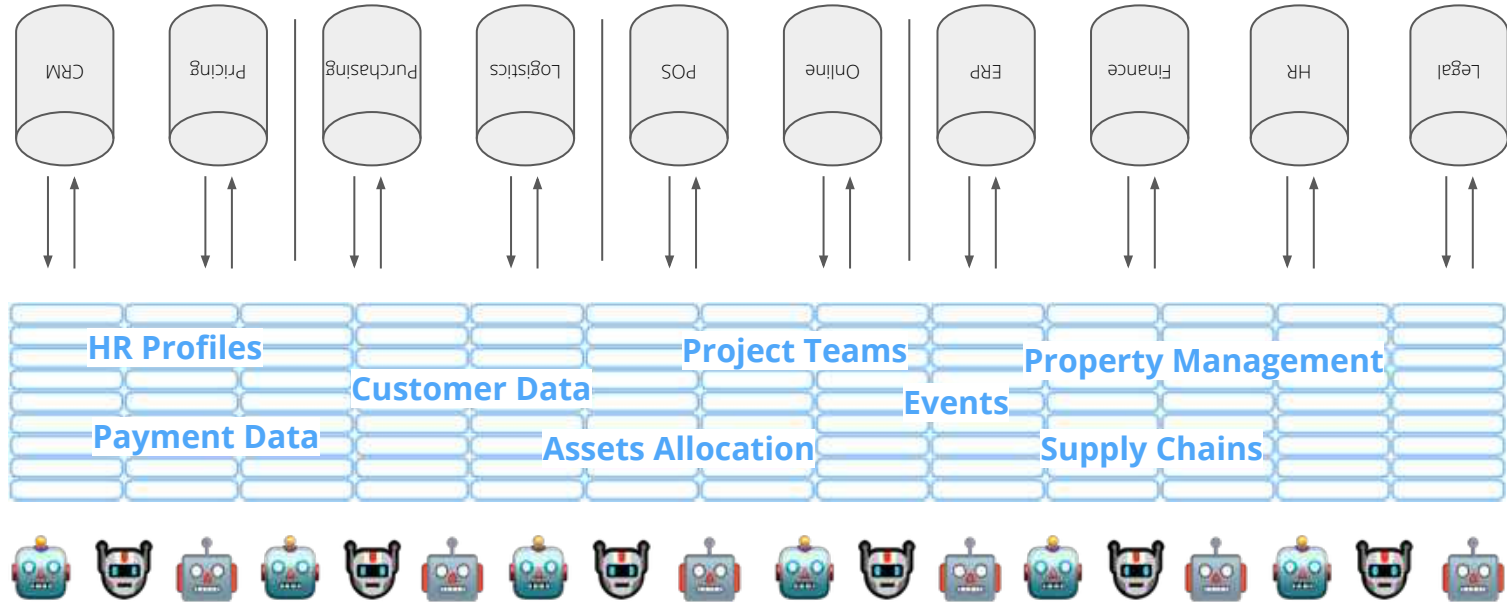


# Problem: Corporates are data silos



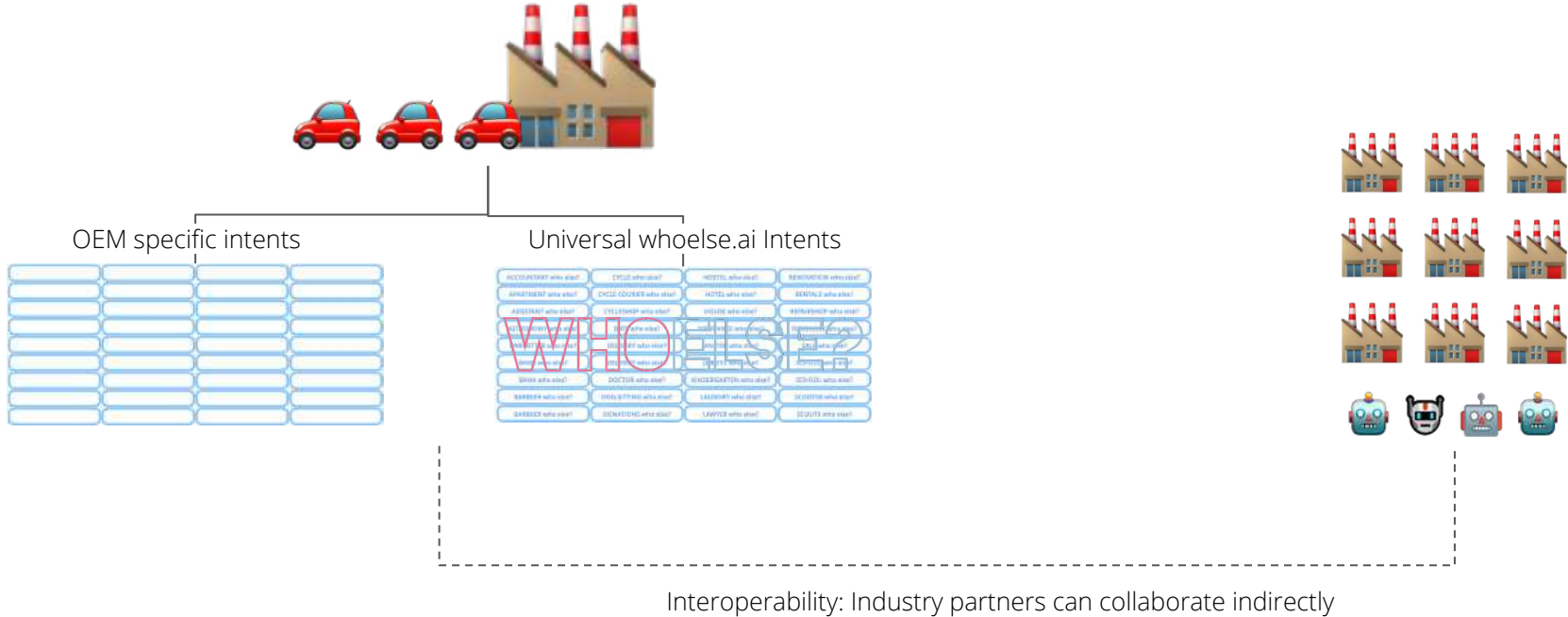


# To do: Turn your data silos into conversational AI know-how



Prepare to use multiple AIs by organizing your knowledge in a AI compatible language

# Our value-added: Intent compatibility across organisations







# Soon: Users can say whatever they want to AIs

whoelse.ai builds an open search index  
for conversational AIs



# SaaS offering: Always find the best AI available

## WHOELSE?

Today

Next



Voice Assistants



Data Mining

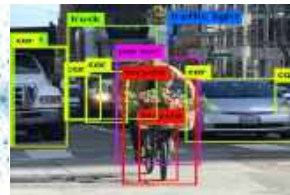


Image Analysis



Brain Machine Interfaces

# USP: OEMs use a shared NLP schema across languages & AIs

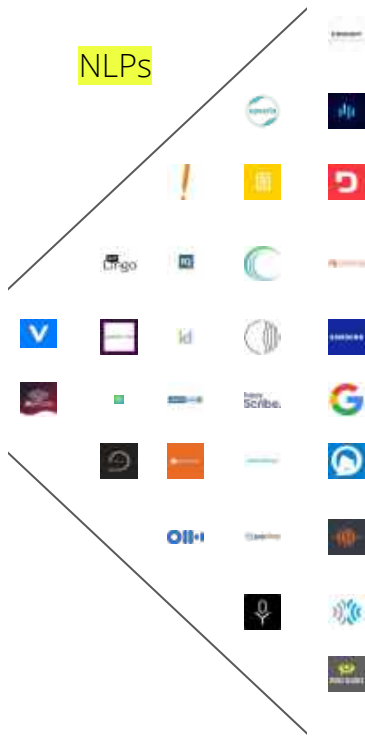
OEMs



# WHOELSE?



NLPs



- ACCOUNTANT who else?
- Intent Catalog
- ASSISTANT who else?
- ASTRONOMY who else?
- BABYSITTER who else?
- BAND who else?
- BANK who else?
- BARBER who else?
- BARBER who else?
- BOARD GAME who else?
- BOOK CLUB who else?
- CASH who else?
- CAR who else?
- CAR CHARGING who else?
- CHILDCARE who else?
- CINEMA who else?
- CITY who else?
- CLEANER who else?

# Product: AIs can look up each other to share requests

Requests

Protocol

Service Catalog

Assistant, find me a taxi

Bot, book a food delivery

AI, order household supplies

AI, find me a restaurant

Assistant, please tell me the biggest cost driven categories A, B, C

AI, we have to restructure the sales department 15 top performers. Find a new workspace for



whoelse.ai  
File Format

A shared intent index for all kinds of conversational AIs

# Everything becomes a smart speaker

## Voice assistants in everyday objects



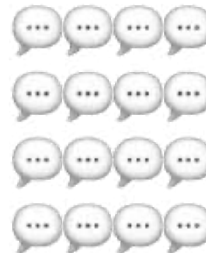
Alarm Activation

Food Delivery

Lightswitch

"Hey Television, **turn on the light** in our garden.  
Then **order food from Dominos**, afterwards make  
sure the **alarm system is activated.**"

## Voice assistants where we spend a lot of time



Concert Ticket

Office Colleagues

Greek Restaurant



"Hey BMW, **find me a greek restaurant** for tonight!"  
"Hey BMW, is there a **concert nearby?**"  
"Hey BMW, is **somebody still in the office?**"

# Hotlines that combine multiple AIs

## Hotlines become voice assistants



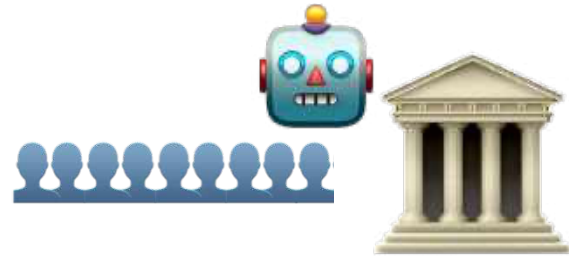
Electricity Bill

Phone Support

*"Can the Deutsche Telekom customer support help you anyhow else, Rosi?"*

*"Yes, please connect we somebody to speak about my electricity bill."*

## Voice AI-based government services



Voice Verification

E- Government

*"Thanks for you unemployment benefit application. Please verify your identity with your voice fingerprint."*

*"I am Sean Conner, my password is..."*

# From buildings to education - voice AI is everywhere

## Voice commands for smart buildings



*"To which floor do you want to go?"*

*"I am looking for **meeting room 306**."*

*"Go to the 3rd floor and go right."*

## Voice AI-based education



*"In order to pass the exam. Please **explain briefly** the function of exponential curves"*

*"It can be best illustrated by.."*

# Data engineering advantage: Cross referencing of NLP data

## Mining of financial transaction data



*"How many people paid something relating to COVID-19 or had unusual transactions. Who of our customers receive state benefits?"*

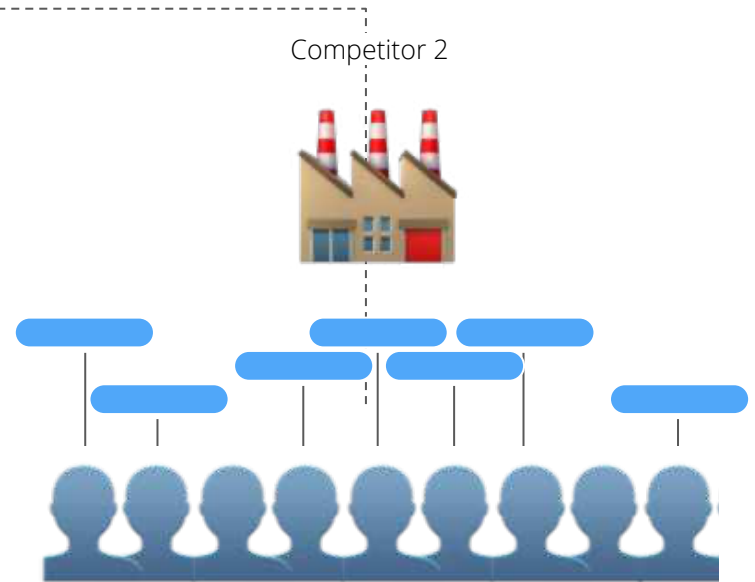
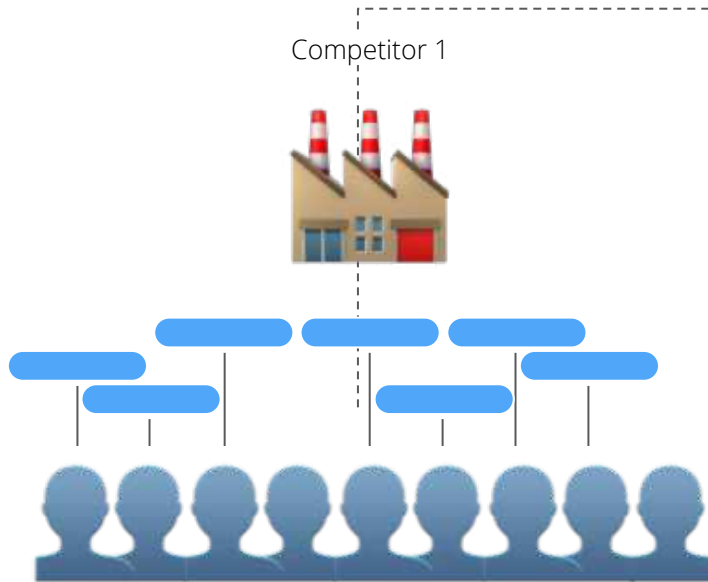
## Contact tracing



*"AI, find all employees who had contact with person ABC during the past 3 weeks."*

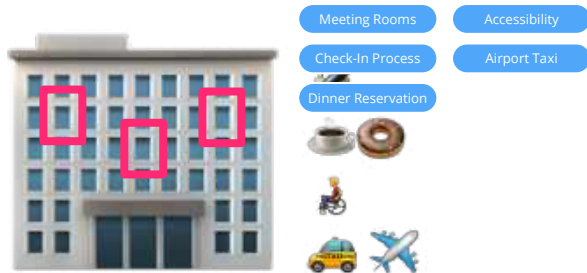
# Opportunity: Information sharing without competition laws

"AI, find all people with background in civil engineering, < 45 years and able to relocate"



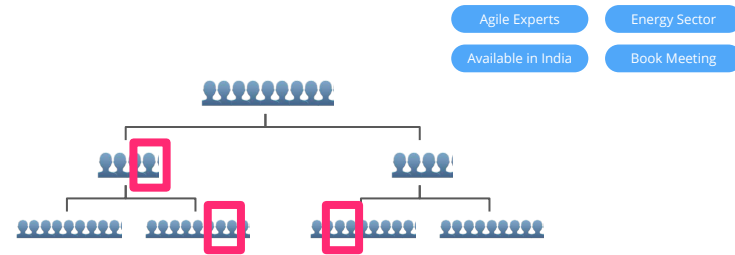
# AI-driven processes: Optimize supply chains and organisations

## Supply chain & operations management



“AI, find me an available meeting space and book catering for 15 people. One person has a wheelchair. Make sure everybody is registered at the frontdesk. Please order taxis to the Airport afterwards. Book them a nice lounge.”

## HR & ERP management



“AI, find all experts for agile project management in the energy industry and available to travel next month to India. Book their calendars for a Zoom call next week.”

# Pilot process: Identification of use cases & roll-out of standards

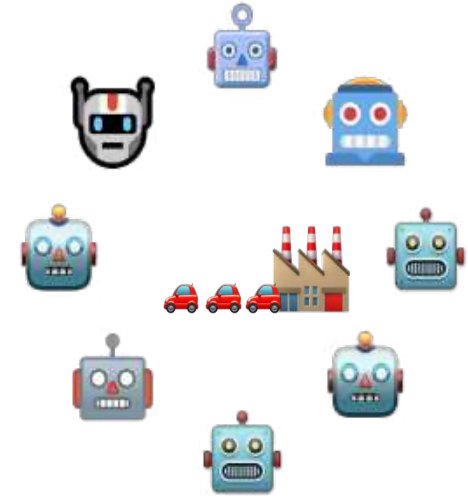
1 Selection of AI use cases in organisation



2 Selection of AI vendors and use case champions



3 Implementation of enterprise-specific intent catalog



Goal: Launch of multi-vendor AI integrations

# Benefit of standards: Always use the best technology available



✓ Fast & low-cost integration  
By DIN SPEC 2343 standard for NLP API interoperability

✓ Future proof  
Ensure long-time interoperability of your AI investments

✓ Know-how interoperability  
Utilize organisational intelligence by sharing data lakes