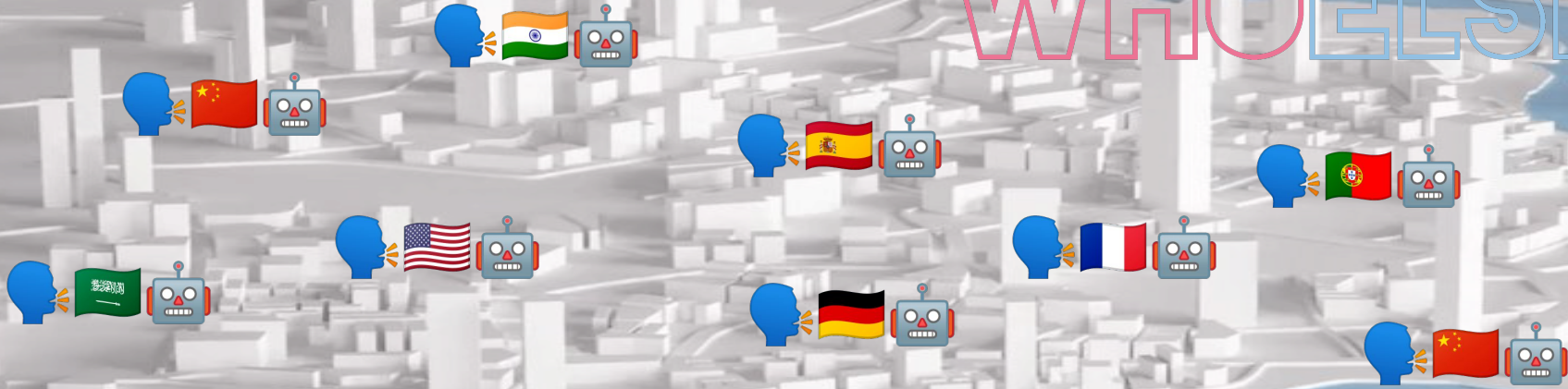


WHO ELSE?



Make NEOM a multilingual city

ISO industry standards for voice AI interoperability
as smart city procurement strategy

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Our Expertise

Make AIs talk to each other!

We invent solutions for
AI interoperability.

Our first product is a
shared namespace API for
voice AI technologies.

Promotion Video



Click to play

Demo Video

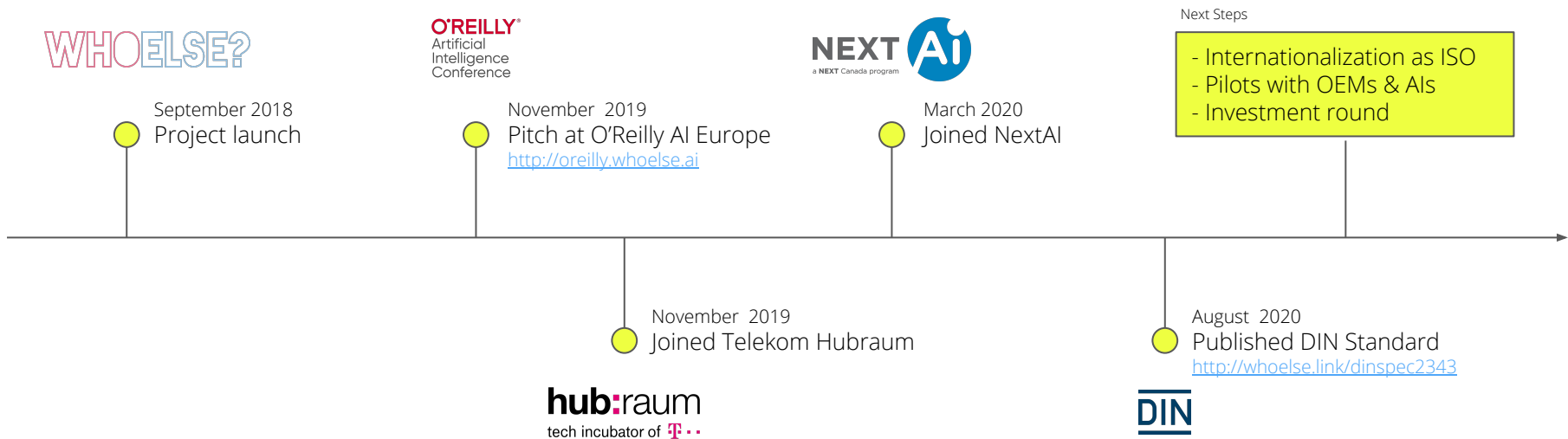


Click to play

Traction

We work as intra-industry R&D lab at applied AI innovations

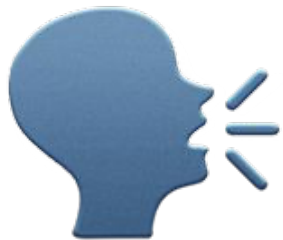
Our focus are AI business models based on public industry standards and norms



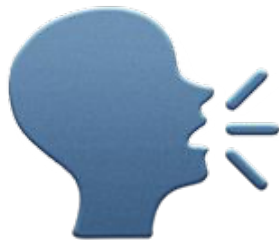
Every hardware in NEOM will be a voice interface

A city based on AI and usable by speech

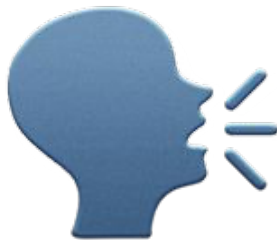
"NEOM, call the security guards"



"NEOM, check my Covid Status"



"NEOM, I need a meeting room"



Every language and use case requires different AIs

Human language is the most natural, but most difficult interface technology available

Problem 1

AIs for multiple languages



Problem 2

AIs for different use cases & IoT integrations



"NEOM, turn the light on."



"NEOM, find a supercharger."



"NEOM, bring us some refreshments."



"NEOM, book an appointment."



"NEOM, order us a shuttle."



"NEOM, deposit the purchase fee."



"NEOM, book us a meeting space."



"NEOM, notify the security guards."



"NEOM, book us entertainment."



"NEOM, find us a driver."



"NEOM, test my temperature."



"NEOM, book rooms for my visitors."



"NEOM, pick up my child from school."



"NEOM, bring us snacks."



"NEOM, turn down the A/C."

3 | Problem

Hardware is easy, but software is hard to combine

There are currently only few industry standards for AI interoperability available

Smart City Hardware



Products

Smart Buildings



Public Transport



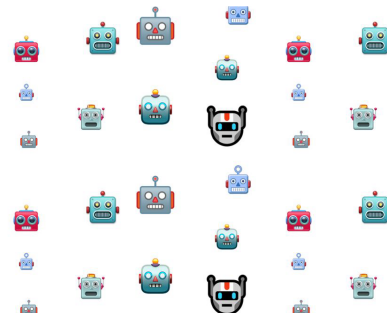
Suppliers



ISO Availability



Smart City AIs



Voice Assistant AIs



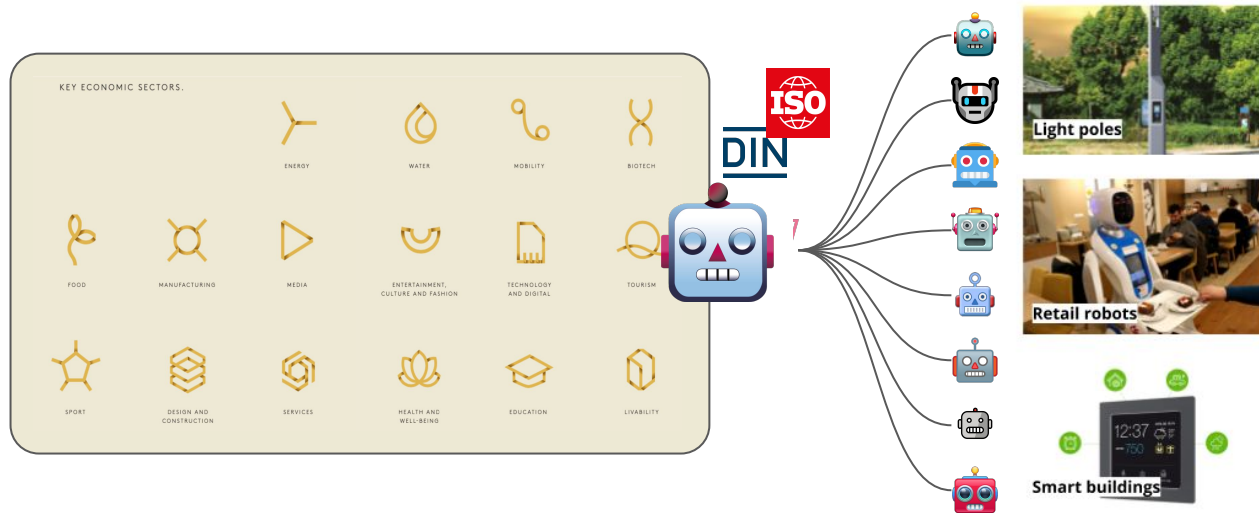
Security AIs



4 | Solution

NEOM joins ISO AI standardization processes

World-wide accepted industry norms as core of the AI procurement strategy



NEOM requires software & hardware vendors to comply with public accredited ISO standards for NLP AI API interoperability.

Benefits:

Investment security

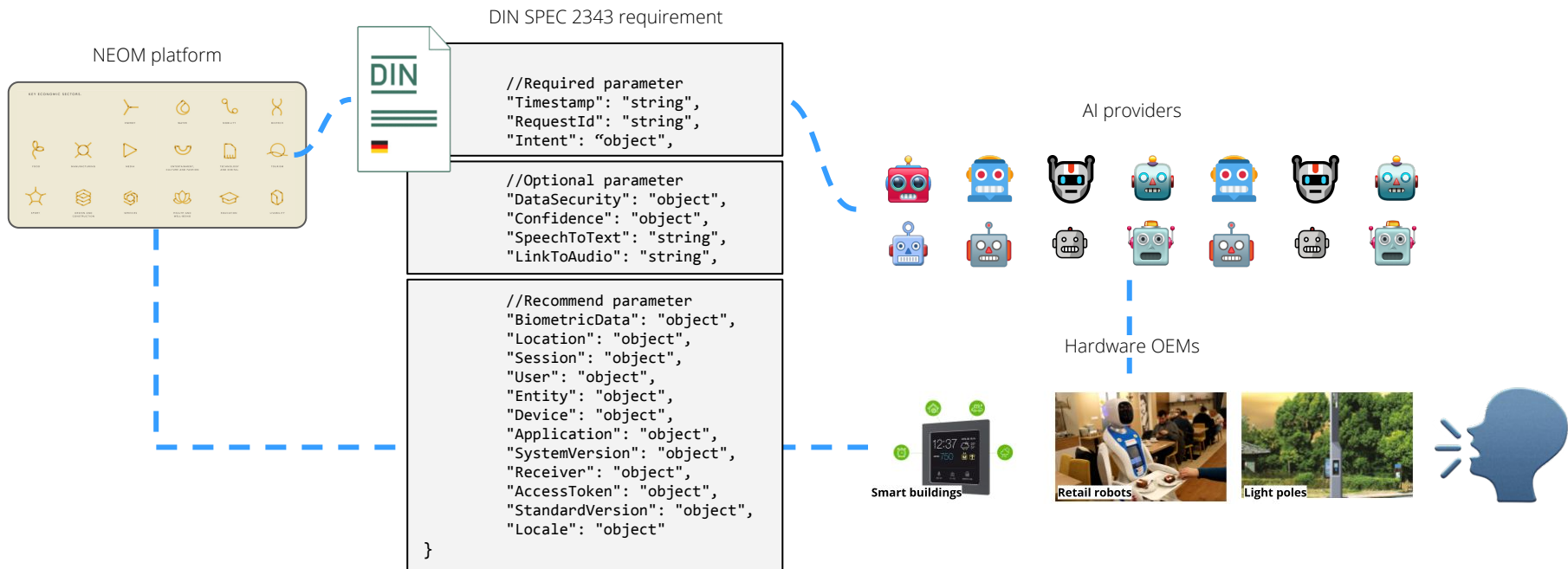
AI vendors can be easily exchanged using shared API specifications

Global recognition

NEOM products are ready by design for world-wide distribution

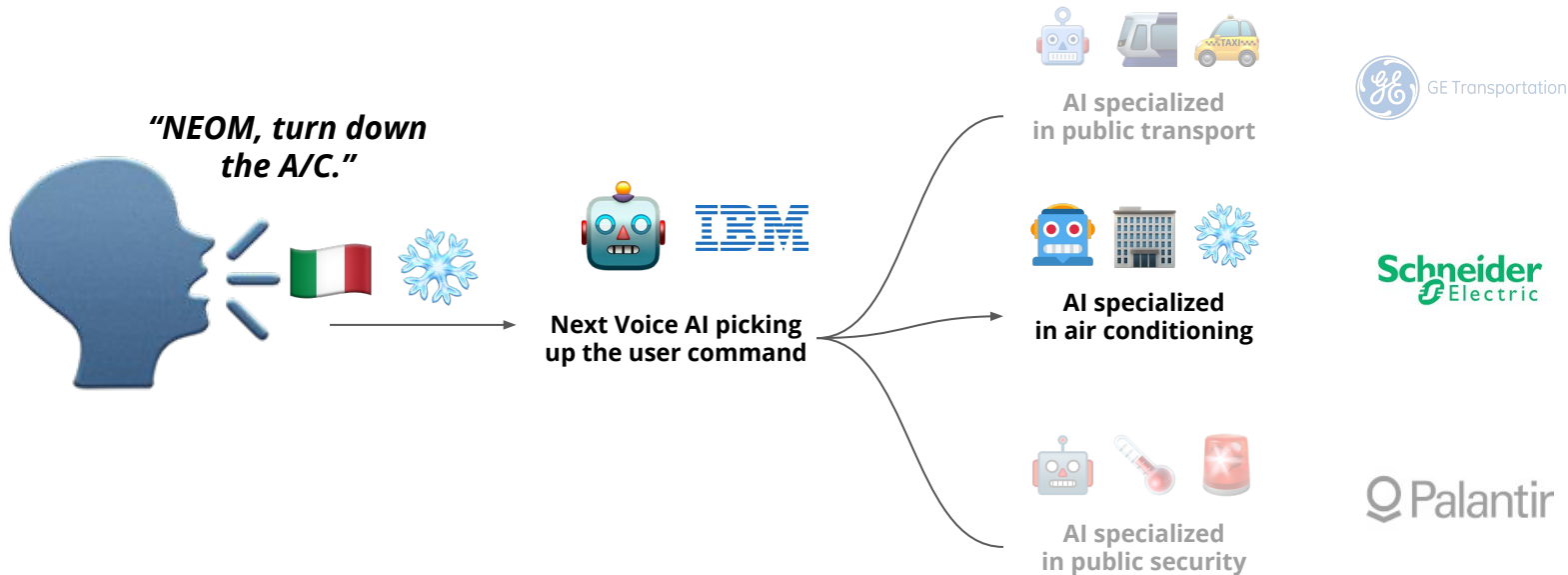
ISO standards as purchasing requirement

AI & hardware suppliers implement ISO API in their offers



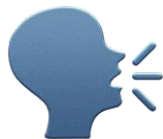
Voice AI pilots between hardware & software vendors

NEOM continuously expand its voice assistant offerings

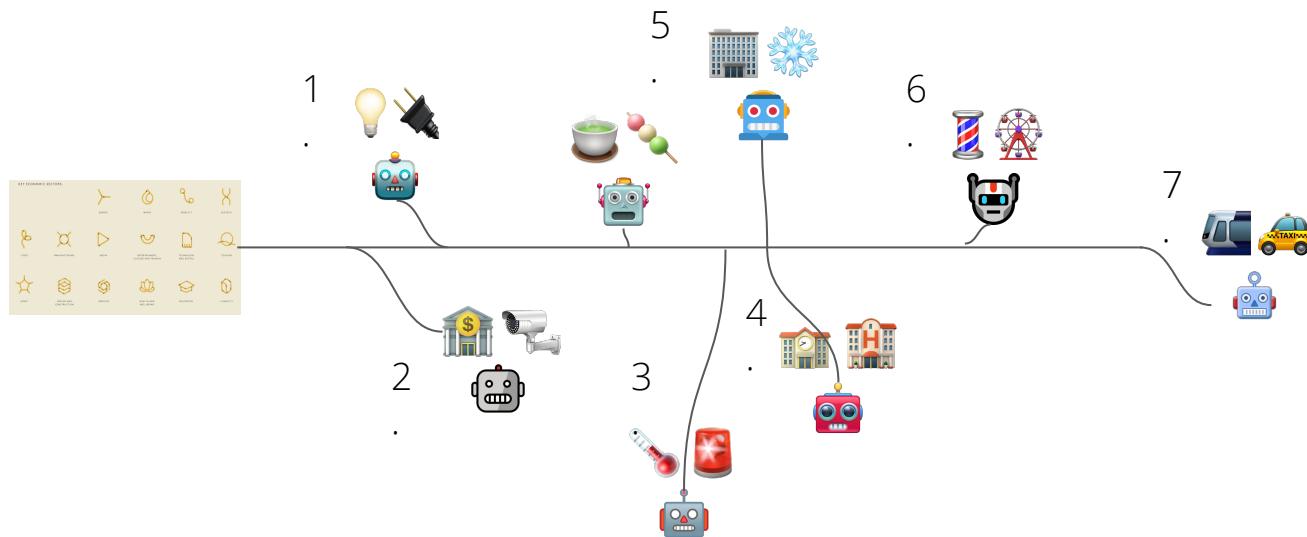


Roll-out of voice AI at city-scale

NEOM citizens can ask whatever they want and find the best AI available



Hey NEOM, please turn on the relax light. (1) Make sure to track the deposit for our new rental. (2) Please check our children regularly for Covid. (3) Make sure their classes include French. (4) I want all rooms to have 24 degree constantly from now on. (5) Please book a hotel and entertainment activities (6) as well as a transport from the airport for our guest from Asia. (7)



Teaser product: Smart speaker giveaway
"Bring NEOM home"



نيوم NEOM

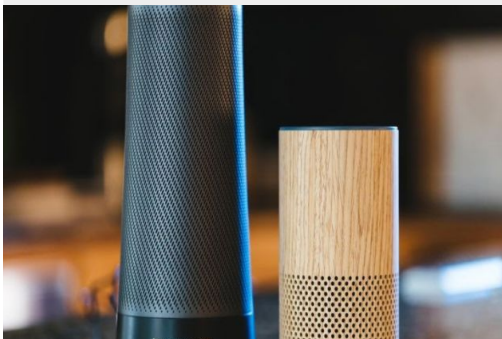
AI interoperability is a new battleground for business models

In September 2019 Amazon announced an own voice AI interoperability initiative

Amazon, Salesforce, Microsoft & 30 more launch voice consortium

Amazon works at voice dominance by bankrolling a vendor alliance

[Voicebot AI](#)



Voice interoperability initiative w/o Google, Apple or Samsung

The initiative makes only sense for companies without own devices

[ZDNET](#)



Details: Amazon's API lobbyism

The Alexa consortium agreed that wake words control which AI responds to a user request: "Alexa" (Amazon), "Einstein" (Salesforce), "Cortana" (Microsoft) etc. Such logic favors voice AIs with the biggest brand names.

In reality it is however unlikely, that competing companies will be able to agree on the ownership of terms: Does "Hey Taxi AI!" belong to BMW or Mercedes?

Furthermore do users remember only a handful of names (average: 3,7). Consumer are unable to recall a different name for every other AI.

Public standards for voice AI interoperability are therefore needed to guarantee marketplace fairness. As non-public standard initiatives the Amazon consortium is as well still bound to competition laws.

Amazon Alexa Initiative vs. DIN SPEC 2343

Vendor-agnostic standards guarantee an equal playing field for voice AI innovation

Alexa interoperability initiative



Hey Alexa..
Hey Einstein..
Hey BMW..
Hey Cortana..

Trigger words control which AI is activated and should respond

≠ Consumers do not want to remember multiple trigger words

DIN SPEC 2343



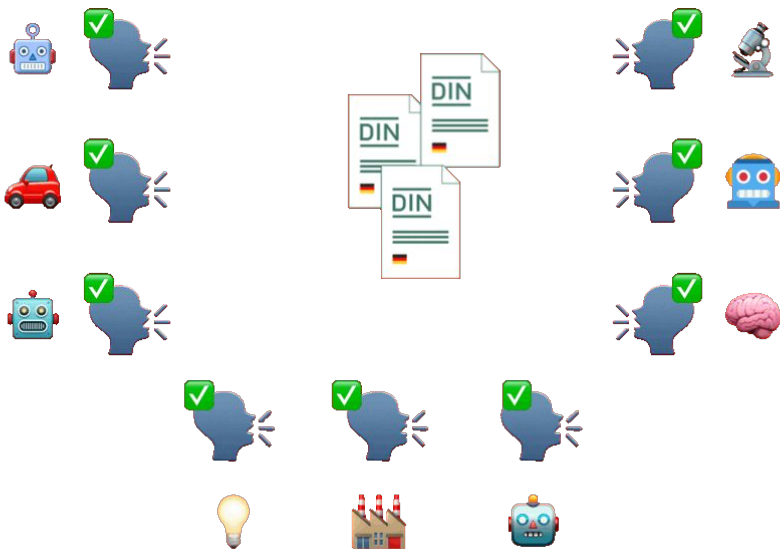
Intent
Speech to Text
Locale
Request ID

Technical specification of NLP AI API requirements

= OEMs keep control over voice interface and AI implementation

How do industry standard consortium work?

Ongoing workshop of NLPs, OEMs, and researchers to specify API requirements



Standard development process

Industry norms are developed at standard setting organisations such as ISO (Germany: DIN), IEEE, or W3C.

Initiators (e.g. whoelse UG) propose a new specification process to the standards reviewing committees and publish a call to industry experts and researcher as workshop partners.

This workshop meets 4-6x per year to develop shared standard specifications and liaises with coordination committees and other standards initiatives.

The appeal of (public) industry standards is equality of votes. Even small vendors can influence discussions and agreements.

Public vs. private standards

Industry standard adoption was historically driven by manufacturing supply chains (e.g. car industry).

“Standard” is not a protected term. Everybody can launch a standard group or call a product “the standard for X”. But some standards like the ISO regime are considered public standards as government institutions usually require compliance from vendors in buying processes.

The DIN SPEC 2343 for NLP API Interoperability will be released in August 2020 and can be internationally used from this moment on. The development into an ISO standard is expected to take 36-48 months.