Disruptive Innovation *at* ocado

"Alexa: ask Ocado to add milk"

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Conversational Commerce
Intercontinental Hotel London
8 May 2018

Amazon Web Services Conference
ICC EXCEL
London Excel 10 May 2018

amazon alexa

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Contents

- Introduction to Ocado
- The Ocado Alexa Skill
- The Future

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World's largest online-only grocer[2017]

- £1.3 billion retail sales
- 260,000 orders per week
- 50 items per order
- 13m grocery items picked per week
- 49,000 items in catalogue
- 99% order accuracy

Two Massive Warehouses with automated goods-to-man picking + Two more being built/ramped up E.g. Erith = 563,000 sq feet (>7.5 football pitches)

Using Ocado's technology from Jan 2014,
UK retailer Morrisons grew turnover
Year 1: £0 to **£200m** …
Year 2: £200 to **£300m** ...

World's most advanced online grocery solution

- Software for online grocery
- New design for dense, scalable warehouses

GROUPE Casino
NOURRIR UN MONDE DE DIVERSITÉ

Sobeys

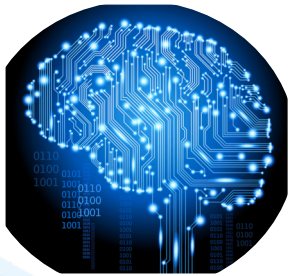
ICA GRUPPEN

ocado SMART PLATFORM™

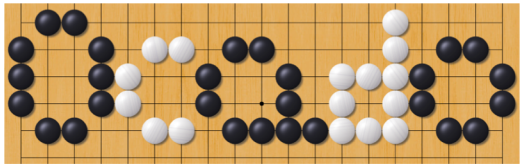
AA-CS4 SP1

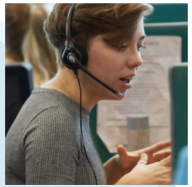
Robotic picking

Ocado Technology 10x scope



Data analysis
Smart algorithms
AI / machine learning





Customer service

Robotics

Warehouse
Technologies
+
optimization

Last mile

Interaction

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The Ocado Alexa Skill

- Ingredients
- Examples
- Challenges

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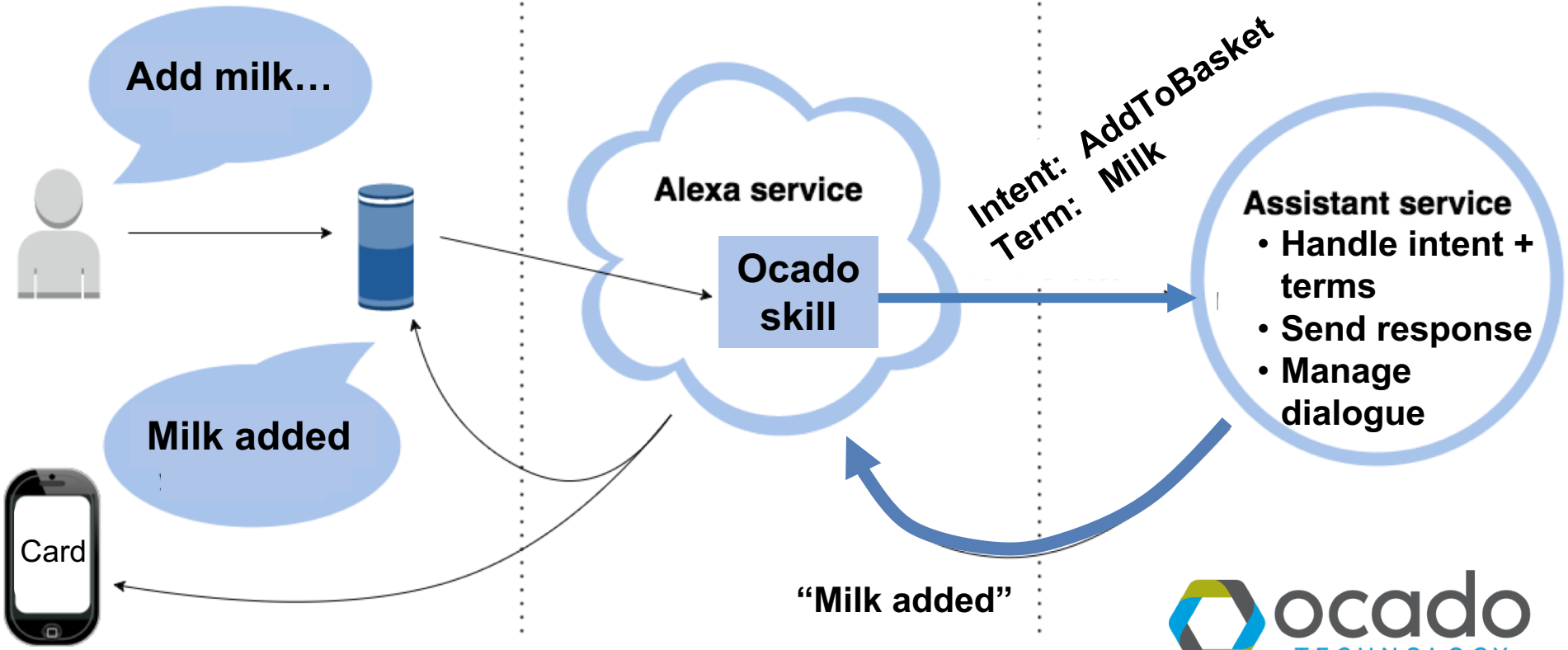
Alexa Skills: Ocado assistant service



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Examples of Intents and slots

Alexa, ask Ocado to…

- **Add** a **grocery item…. Add {N} more**
- **Remove** a **grocery item…. Remove {that}**
- **Suggest an alternative**
- **Check** if a **grocery item** is in the basket
- **Confirm** if a delivery is on time
- **Find** when when an order can be edited until

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For each intent, give examples

Add a **grocery item…**

- **“Please add some {grocery item}”**
- **“Please can I have some {grocery item}”**
- **“Please put some {grocery item} in my basket”**
- **“I need a {grocery item}”**

- And give a list of terms that can be **{grocery item}**

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Role play to formulate your “Assistant service” dialogue…

“Alexa, ask Ocado to add milk”

I added milk

Can I help with anything else?

“Remove that”

No thank you

“Suggest another”

“Yes please”

Add two more

The Ocado Alexa Skill

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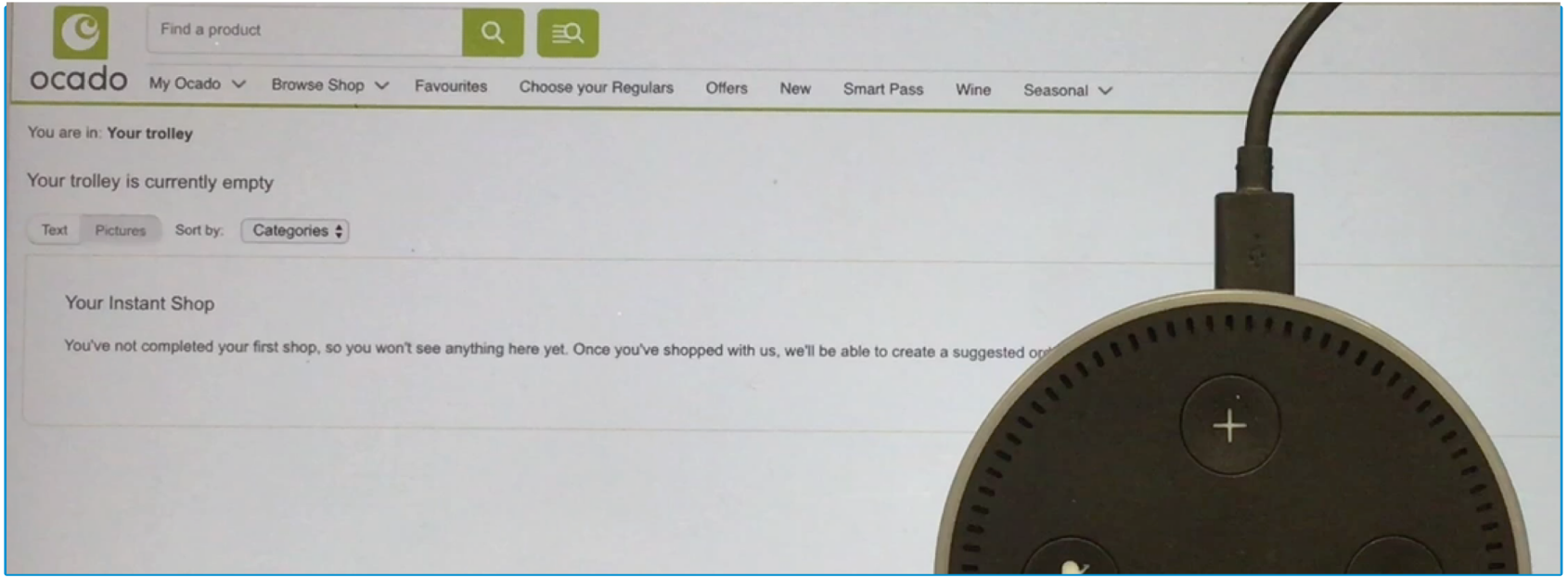
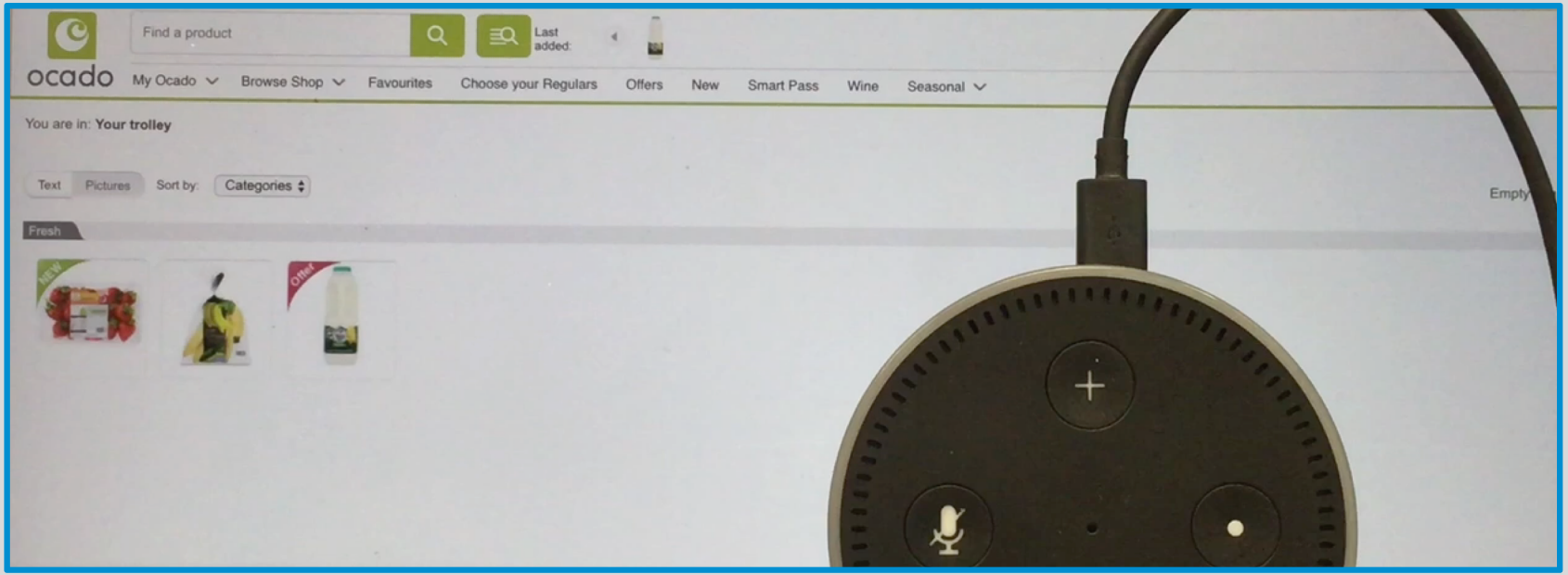
Example 1: Add milk: personalise



“Alexa, ask Ocado to add milk”

“OK, I’ve added Yeo Valley Organic Semi-skimmed milk at £1.15 to your Ocado trolley. Can I help with anything else?

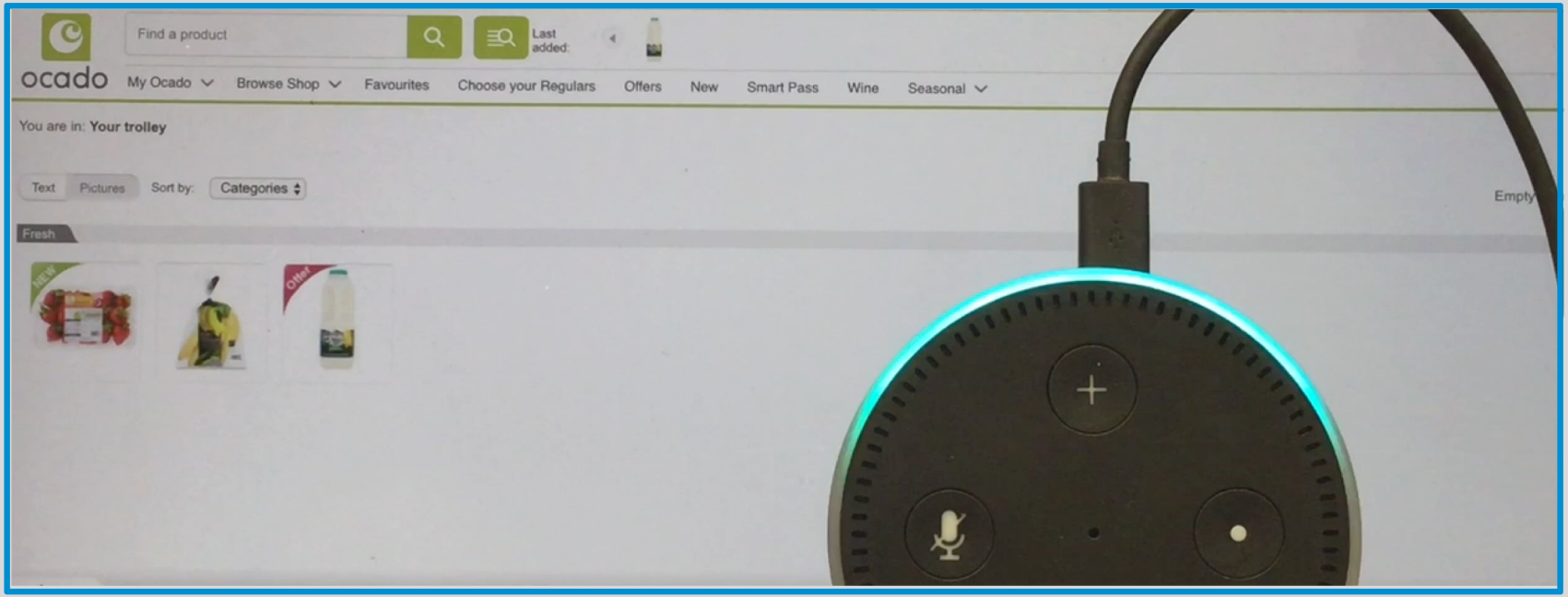
Example 2: What's in my trolley? Summarise



"Alexa, ask Ocado what's in my trolley?"

"You have three items in your trolley totalling £5.90. To check for a specific item say 'Do I have cheese in my trolley'. Do you need help with anything else?"

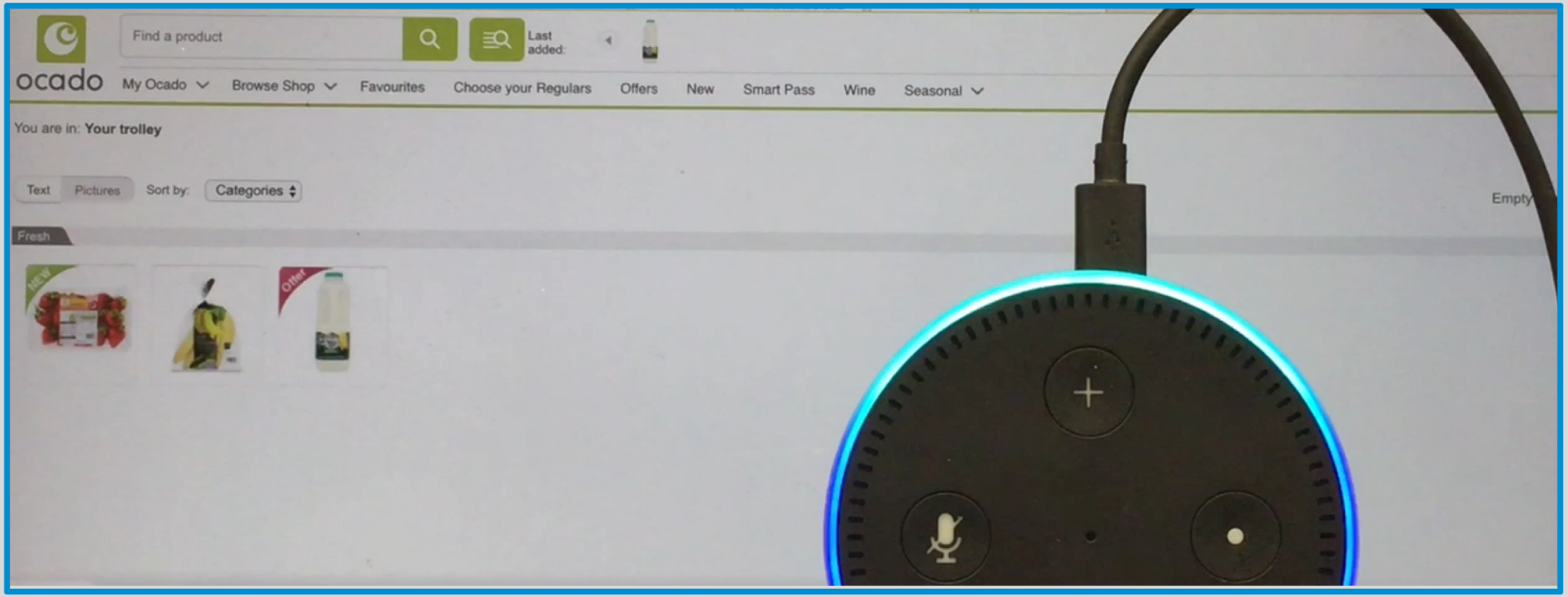
Example 3: Do I have milk? Be specific



"Do I have milk in my trolley?"

"Yes I found Yeo Valley Organic Semi-Skimmed milk in your Ocado trolley. Can I help with anything else?"

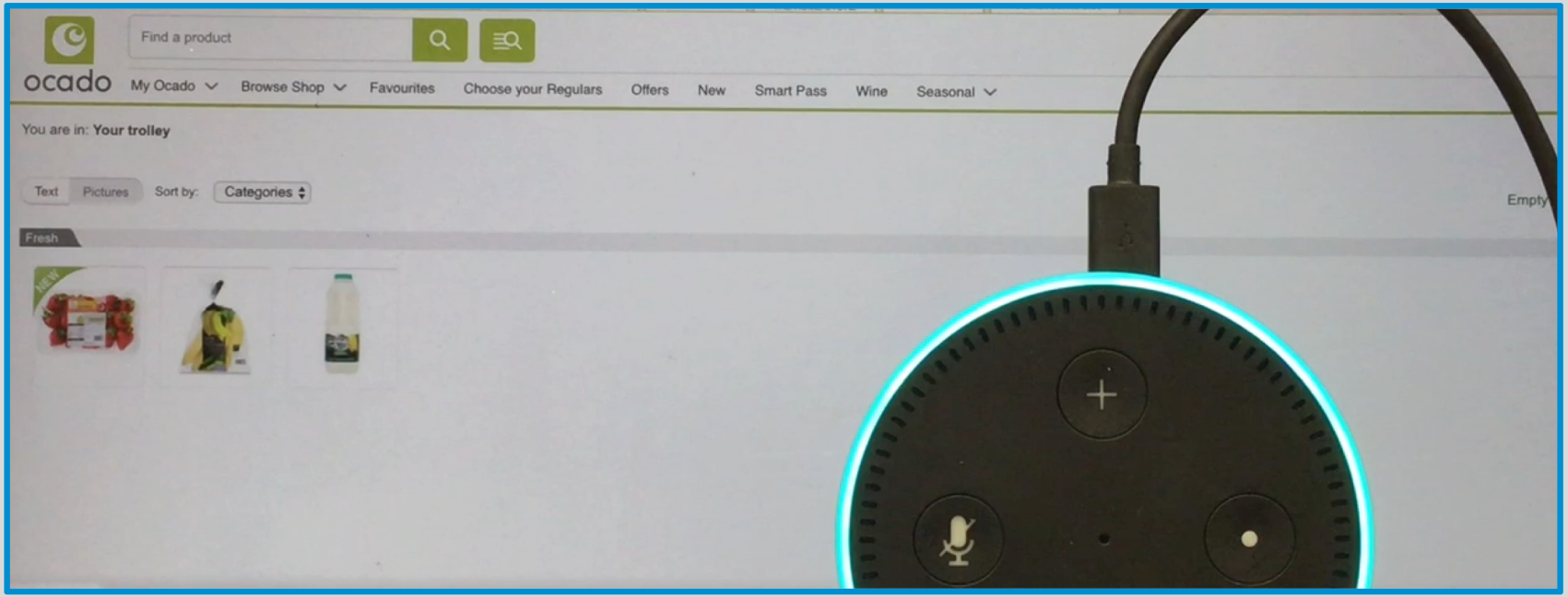
Example 4: “Remove that”: Context aware



“Remove that”

“No problem, I’ve removed the Yeo Valley Organic Semi-Skimmed milk. Please ask again.”

Example 5: Add wine: Check if unsure



"Add wine please"

The Ocado Alexa Skill

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Challenges (1 of 5): Typos -> Voicos

“Alexa, ask Ocado to add cheese…”

“I’ve added **Chilies** …”

Need for personalised data

Give back phonemes & probabilities

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Challenges (2 of 5): Failure to connect to Ocado

"Alexa, add milk…" or

"Alexa add milk to my Ocado trolley"

"I've added milk to your [non-Ocado] shopping list …"

Set up a default grocery provider

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Challenges (3 of 5): “Intent” modeling is limited

“Did I add cheese to my order yesterday?”

“I’ve added Waitrose Mature Cheddar to your Ocado order…”

Provide full text from Alexa for deeper conceptual analysis than intents + slots

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Challenges (4 of 5): Common Sense Reasoning

"Add ten fish fingers, three bunches of bananas and some dishwasher tablets but not the lemon ones"

[???? 10 packs or one pack of ten? How may bananas? Which dishwasher tablets are not lemon-scented?]

Cleverer Machine Intelligence

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Challenges (5 of 5): Resolving Ambiguity

- “Thank you…”
- “I’ve added Lindt Thank You

  Assorted Chocolate Pralines….”

Smarter product knowledge

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Customer Feedback is Positive

“It's a very good idea to be able to add items to your basket while you're cooking”

“One thing I really like about Alexa is when she said there’s something already in my order. For me to find that out from the Ocado app is a painful process.”

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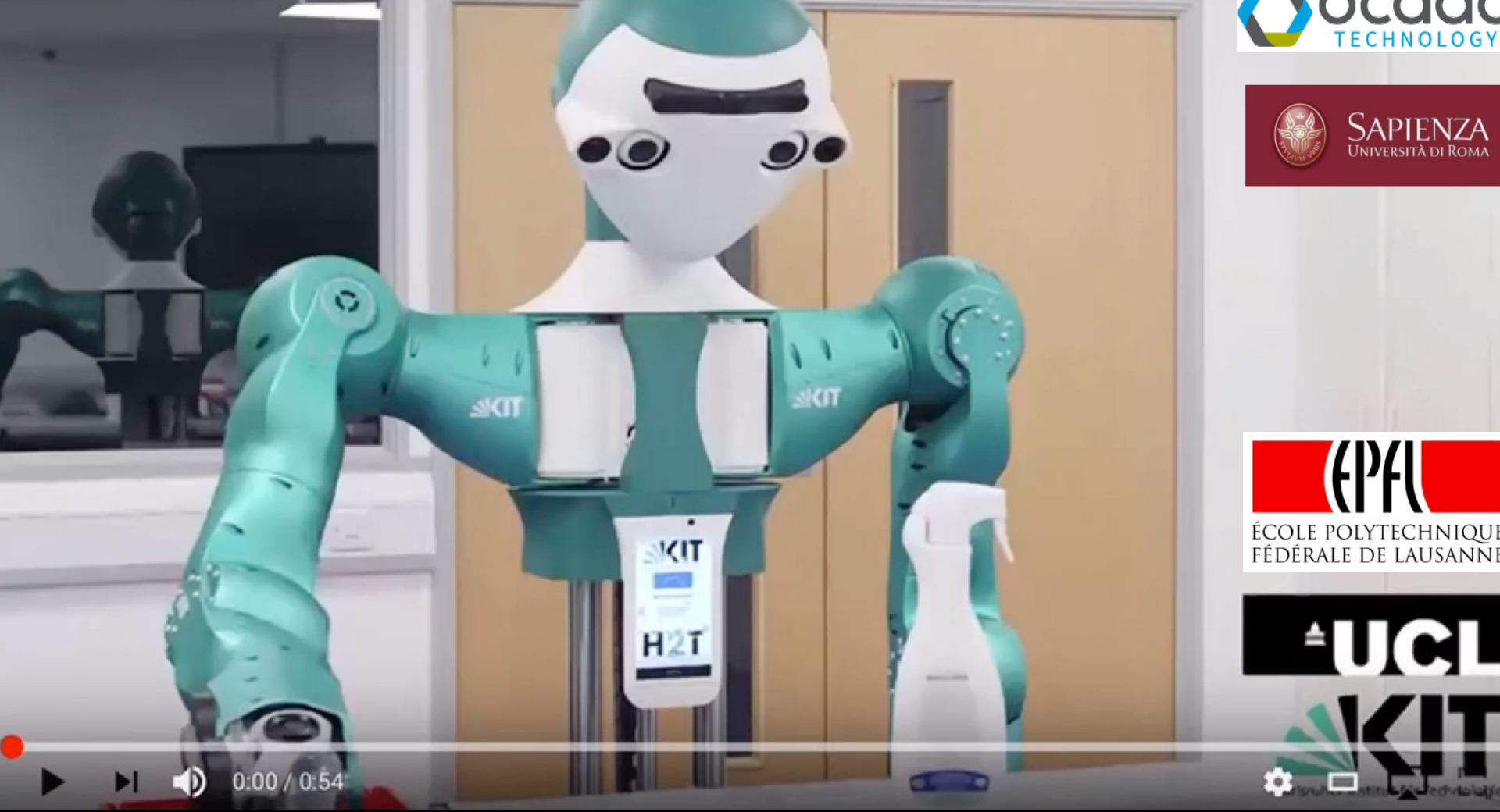
Alexa

“Please help to clean up the kitchen”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D^{i}s$_{r}$u^{p}t$_{i}$ve Innovation at Ocado

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