

Hey Google, send 20€ to Mum!?

An introduction to voice assistants and banking APIs

Side Projects

Side Projects



December 2018

Internet of Stuff



Using your voice!



This talk





PSD2 : In short

The Payment Services Directive¹ (2015/2366) is an EU Directive, administered by the European Commission (Directorate General Internal Market) to regulate payment services and payment service providers throughout the European Union (EU) and European Economic Area (EEA). The Directive's purpose was to increase pan-European competition and participation in the payments industry also from non-banks, and to provide for a level playing field by harmonizing consumer protection and the rights and obligations for ... payment providers and users.[2]

PSD2 : Cryptic name, simple idea

- 14 September 2019
- Increase competition
- Increase participation non-bank industries
- Harmonize customer protection rights and obligation

3 big APIs

Account Information Services

Overview of your bank accounts and payments

Confirmation of Available Funds

Can I actually buy this car right now?

Payment Initiation Services

**Execute payment on your behalf (Alternative to
Paypal)**

Generics about voice assistants

Vocabulary:

- **Action**: 'App'. Something Assistant can do
- **Intent** : User request. What does the user want
- **Context** : Where is the user at in his conversation ?
- **Fulfillment** : What are we gonna do? What's happening.

Entities

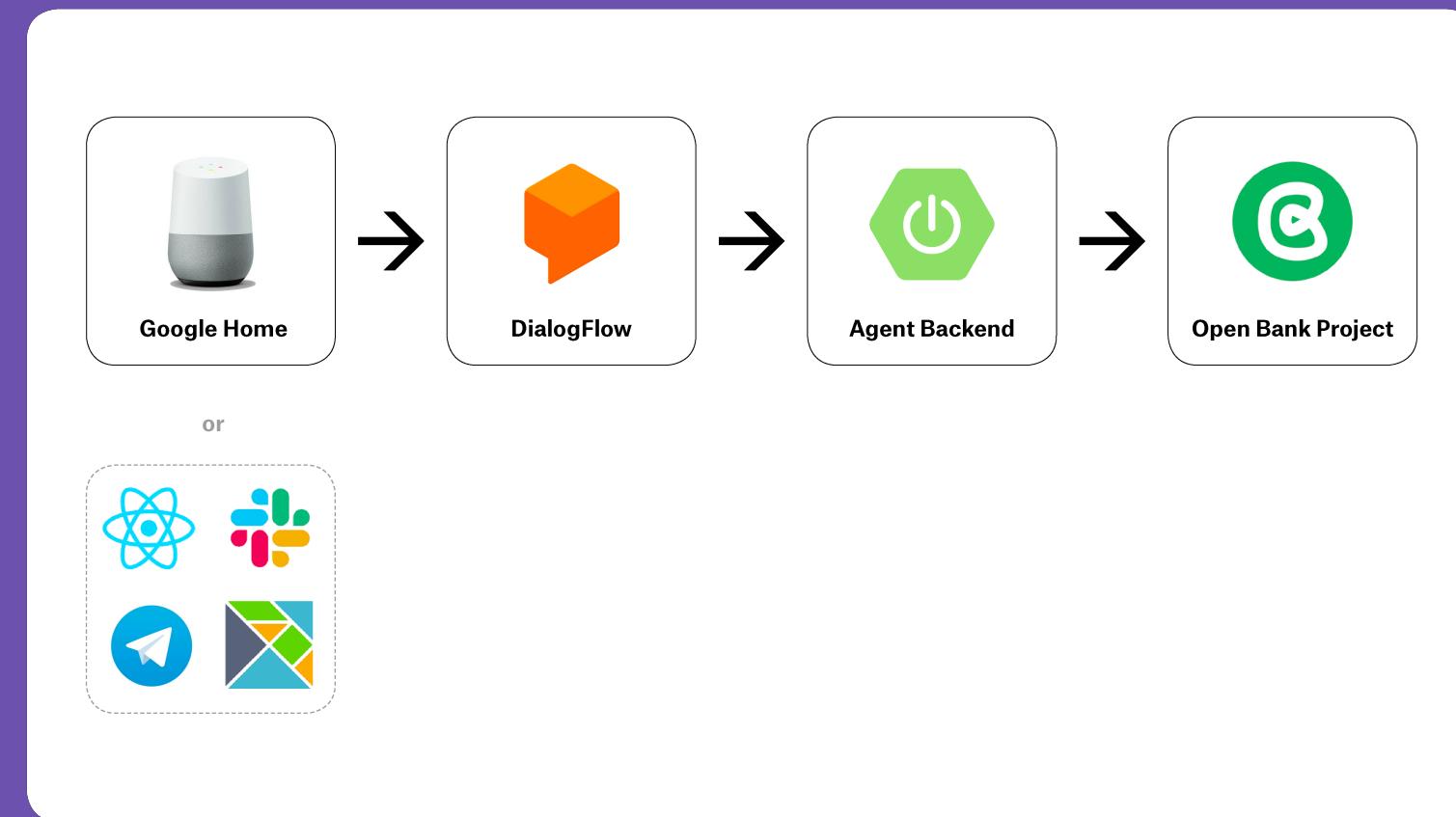
- Parts of the **intent** needed to fulfill it
- Size, type, options, amount, person, location, ...
- Can also help personalize the experience

Demo time!

Our goal

- Hey Google, what was my last transaction?
- Hey Google, Send 20€ to my mum using My Money Agent.

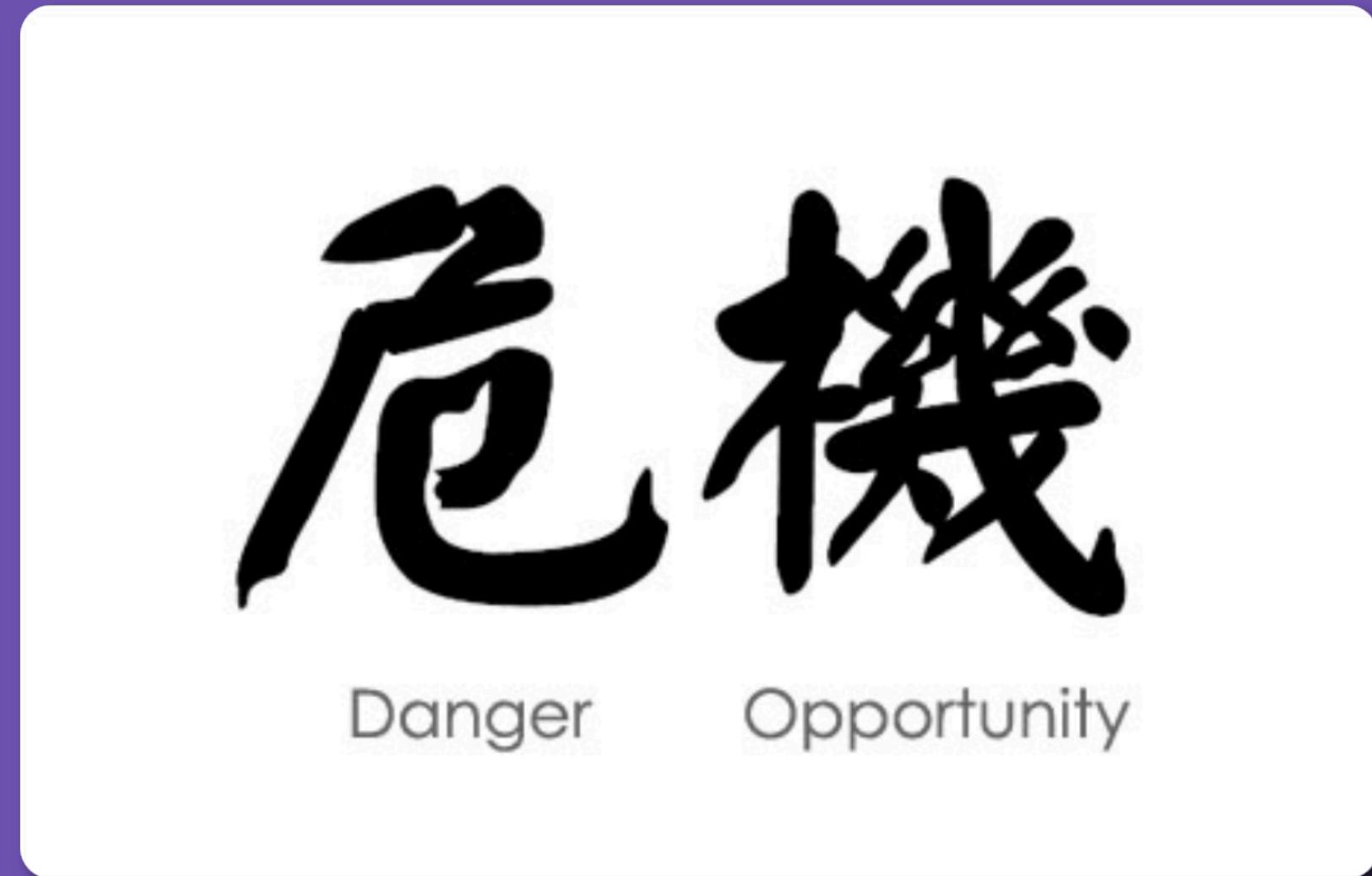
How it looks like



Interlude

Some thoughts

PSD2 : Danger of opportunity?



Strong Customer Authentication¹



**SOMETHING THE
CUSTOMER **KNOWS****
(e.g., password or PIN)



**SOMETHING THE
CUSTOMER **HAS****
(e.g., phone or hardware token)



**SOMETHING THE
CUSTOMER **IS****
(e.g., fingerprint or face
recognition)

¹ Image from [Stripe](#)

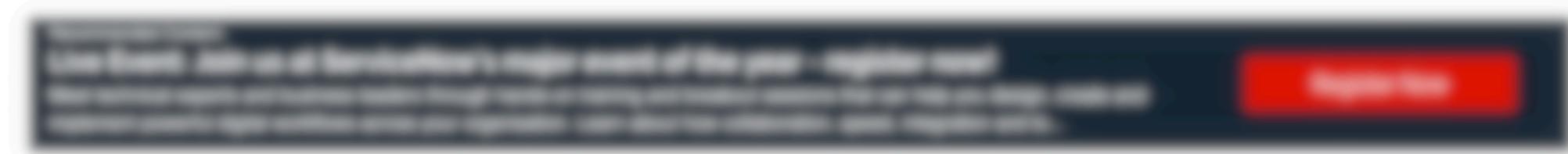
Who's listening to me? ²

Google exec says you should warn guests about your spy speakers

Rick Osterloh says he's never really thought about it before, but people should really tell their visitors in advance about their smart speakers.

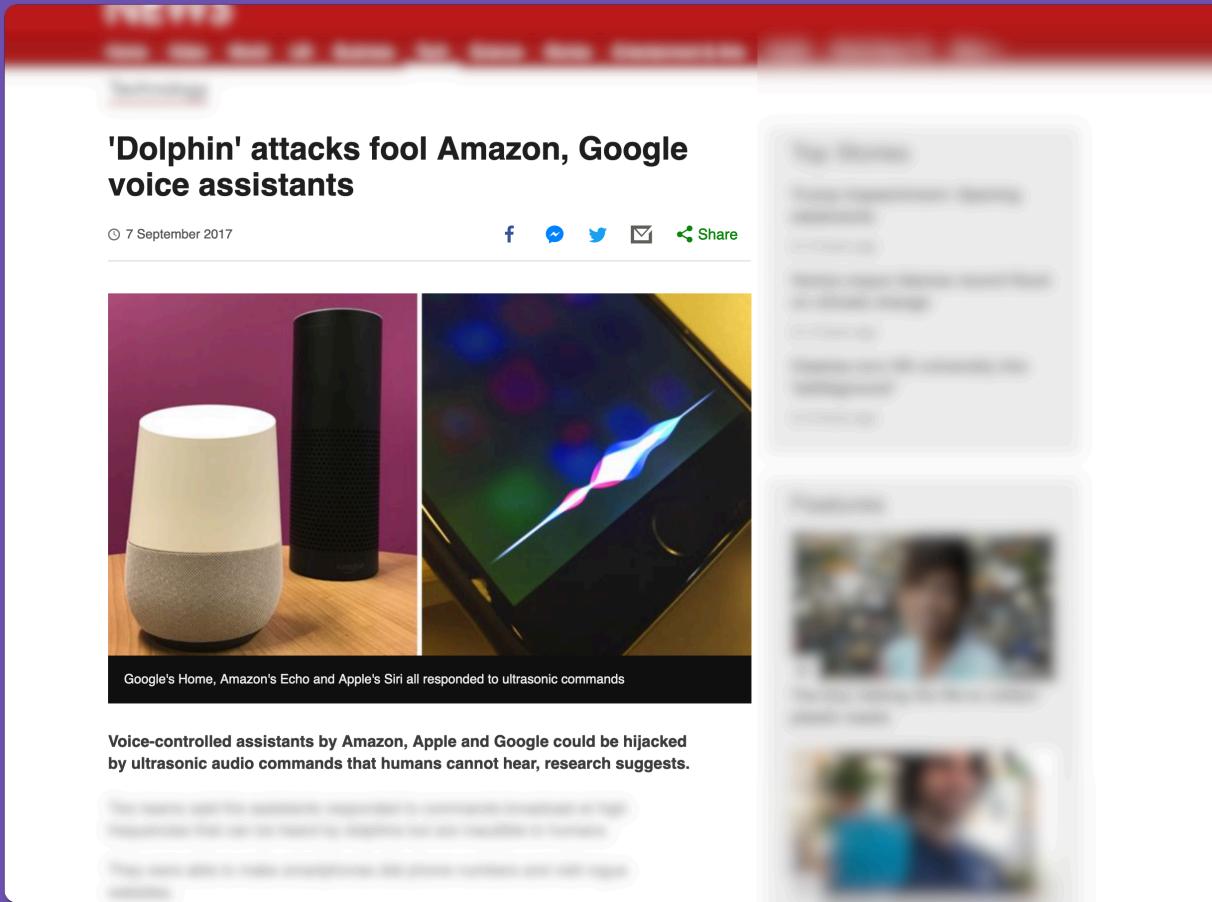


By [Chris Matyszczyk](#) for [Technically Incorrect](#) | October 16, 2019 -- 12:58 GMT (13:58 BST) | Topic: [Google](#)



²Apparently someone is

Voice assistants : security³



³ Dolphin attacks are a thing

FANG, Data and Banking

 **DHH**  @dhh · Nov 7, 2019

The [@AppleCard](#) is such a fucking sexist program. My wife and I filed joint tax returns, live in a community-property state, and have been married for a long time. Yet Apple's black box algorithm thinks I deserve 20x the credit limit she does. No appeals work.

1.5K 9.4K 29K 

 **Steve Wozniak**  @stevewoz · Nov 10, 2019

The same thing happened to us. I got 10x the credit limit. We have no separate bank or credit card accounts or any separate assets. Hard to get to a human for a correction though. It's big tech in 2019.

126 680 4.1K 

FANG, Data and Banking ⁴

Google says it won't use your Fitbit data to target you with ads. But what else will it do?

The search giant's \$2.1 billion acquisition of Fitbit raises questions about data privacy and antitrust.

By Shirin Ghaffary and Rani Molla | Nov 1, 2019, 2:30pm EDT

f t SHARE

Google to offer checking accounts in partnership with banks starting next year

Darrell Etherington @etherington 1:21 pm CET • November 13, 2019

Comment

⁴ Fitbit acquisition

Would you like to know more?



Would you like to know more?

- Code for this project and Slides
- PSD2
- Open Bank Project
- Dialogflow

Thanks! - Questions?



@jlengrand

**If you see this,
something really
wrong happened**

Fetching the last transaction

A screenshot of the Dialogflow interface in a Google Chrome browser window. The URL in the address bar is <https://dialogflow-fun.appspot.com/>. The page shows the 'Intents' section for the agent 'dialogflow-fun-agent-live' (en). The sidebar on the left includes links for Intents, Entities, Knowledge [beta], Fulfillment, Integrations, Training, Validation [beta], History, Analytics, Prebuilt Agents, Small Talk, Docs (Standard Free), Upgrade, Support, Account, and Logout. The main content area displays the 'Intents' heading, a search bar, and two listed intents: 'Default Fallback Intent' and 'Default Welcome Intent'. A message indicates 'No regular intents yet.' with a link to 'Create the first one.'. Below this, a description of intents as mappings between user queries and actions is provided, along with a link to 'Read more here.'. A 'CREATE INTENT' button is located at the top right of the intent list. To the right, a 'Try it now' section shows a user input 'hey there!' and a default response 'Greetings! How can I assist?'. The section also includes tabs for 'Agent', 'INTENT' (set to 'Default Welcome Intent'), 'ACTION' (set to 'input.welcome'), and 'DIAGNOSTIC INFO'.

Sending monies to Mum

The screenshot shows the Dialogflow web interface in a Chrome browser. The URL is <https://dialogflow-fun.appspot.com/>. The page title is "Dialogflow". The left sidebar shows navigation links: "dialogflow-fun-agent-live" (selected), "Intents" (selected), "Entities", "Knowledge [beta]", "Fulfillment", "Integrations", "Training", "Validation [beta]" (selected), "History", "Analytics", "Prebuilt Agents", "Small Talk", "Docs" (with a "Standard Free" plan and "Upgrade" link), "Support", "Account", and "Logout". The main content area is titled "Intent name" with a blue "SAVE" button. It includes sections for "Contexts", "Events", and "Training phrases" (with a search bar). Below that is the "Action and parameters" section, which is currently empty. The "Responses" section shows a "Text Response" card with a "1 Enter a text response" input field. A "Try it now" button and a microphone icon are at the top right, and a note "Please use test console above to try a sentence." is present.

Integrations and Goodies

The screenshot shows the Dialogflow interface in a Chrome browser window. The URL is <https://dialogflow.cloud.google.com/#/agent/a1411fd6-a8de-4370-aa8b-0c9f94cd5136/intents>. The left sidebar shows navigation options like Intents, Entities, Knowledge, Fulfillment, Integrations, Training, Validation, History, Analytics, Prebuilt Agents, Small Talk, Docs, Standard (Free), Upgrade, Support, and Account. The main area is titled "Intents" and contains a "CREATE INTENT" button. It lists intents: Default Fallback Intent, Default Welcome Intent, last.transaction, and send.money. On the right, there's a "Try it now" section with a microphone icon, a link to "See how it works in Google Assistant", and a "Agent" section showing a user input "last transaction?" and a default response about a transaction. Below that are sections for "INTENT", "ACTION", and "DIAGNOSTIC INFO".