

# Il mondo dei chatbot: dalle ricette all'Intelligenza Artificiale

**Alessia Bianchini** – Key Account Manager

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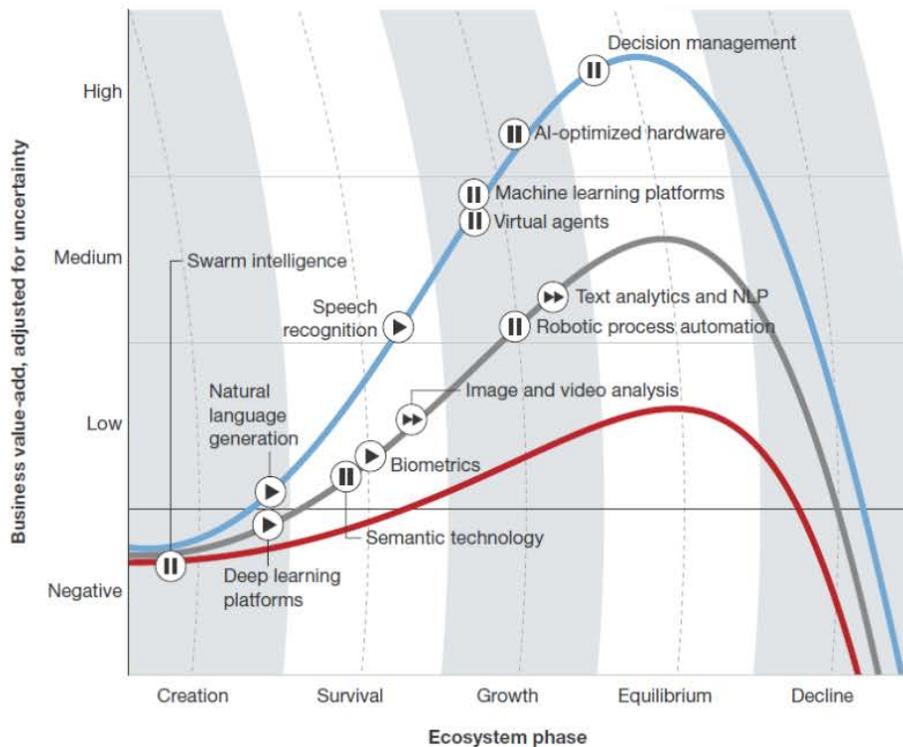
# Artificial Intelligence: Using algorithms and computers to figure out complex (human) tasks

Barack Obama, Joi Ito, Scott Dadich - Wired – Novembre 2016

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## II Contesto

### Il mercato delle tecnologie sull'Intelligenza Artificiale (AI) è fiorente



#### Trajectory:

- Significant success
- Moderate success
- Minimal success

#### Time to reach next phase:

- <1 year
- 1 to 3 years
- 3 to 5 years
- 5 to 10 years
- >10 years

- Il 38% delle imprese sta già utilizzando tecnologie d'intelligenza artificiale. Questo dato crescerà fino al 62% entro il 2018 \*
- Si stima un aumento di oltre il 300% degli investimenti in intelligenza artificiale nel 2017 rispetto al 2016 \*\*
- Si stima una crescita del mercato AI da \$8 miliardi di dollari nel 2016 a più di \$47 miliardi nel 2020 \*\*\*

\* [Narrative Science survey](#)

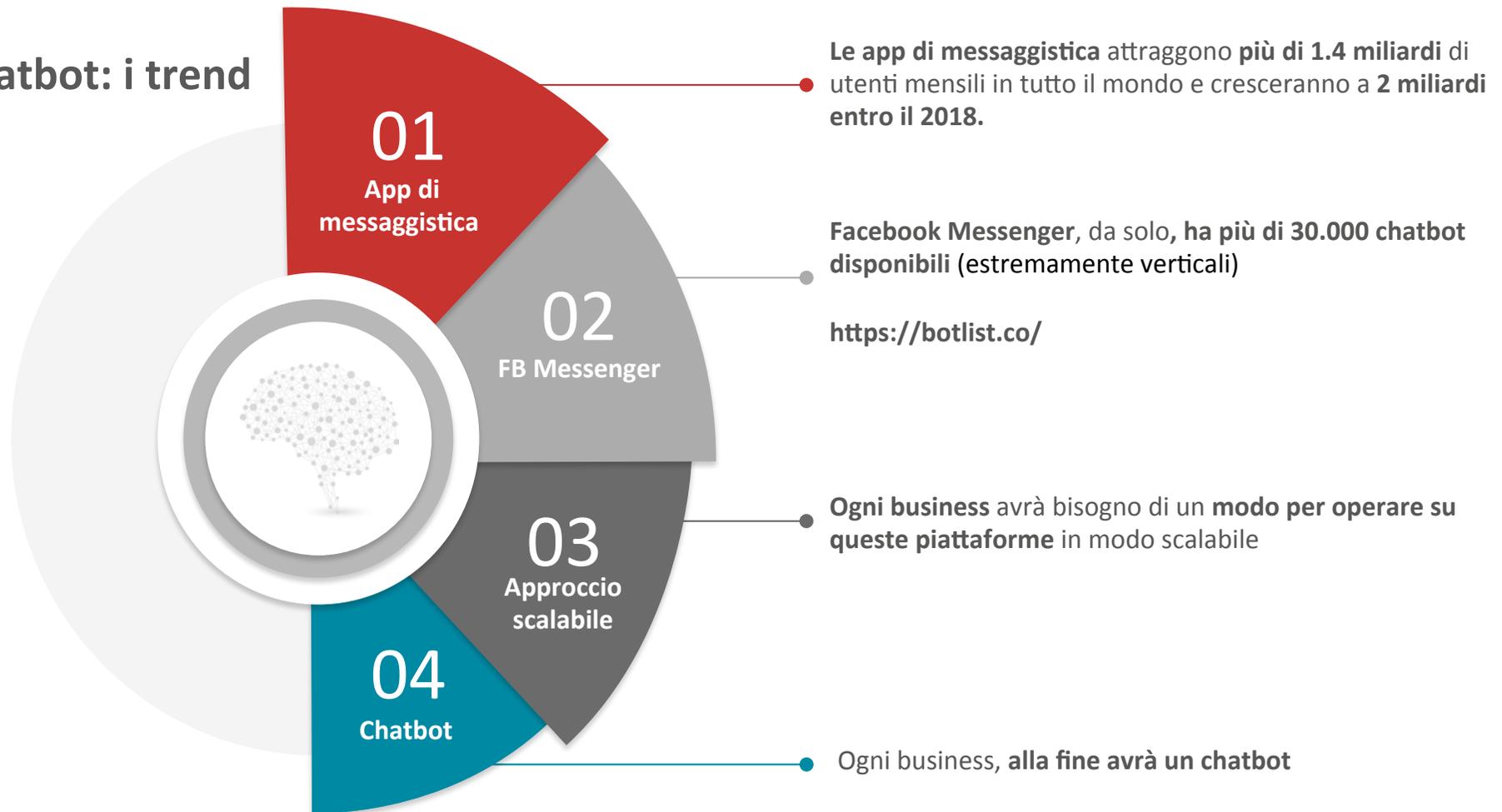
\*\* [Forrester Research](#)

\*\*\* [IDC](#)



“We apply **Artificial Intelligence** and **Natural Language Processing** to understand and engage customers.”

## Chatbot: i trend





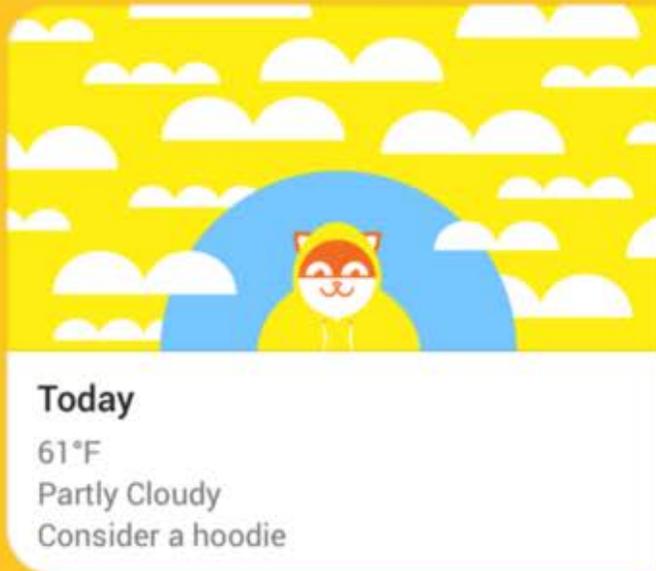
**78%**

**Degli americani adulti non sa cosa  
sia un chatbot\***

\*online survey that Publicis Groupe's Digitas LBi hired Harris Poll – Nov 2016

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Hourly forecast



The forecast card features a yellow background with white clouds and a blue arc. In the center is a cartoon cat wearing a yellow hoodie. Below the illustration, the text reads: "Today", "61°F", "Partly Cloudy", and "Consider a hoodie".

Today  
61°F  
Partly Cloudy  
Consider a hoodie



Thanks, Poncho!

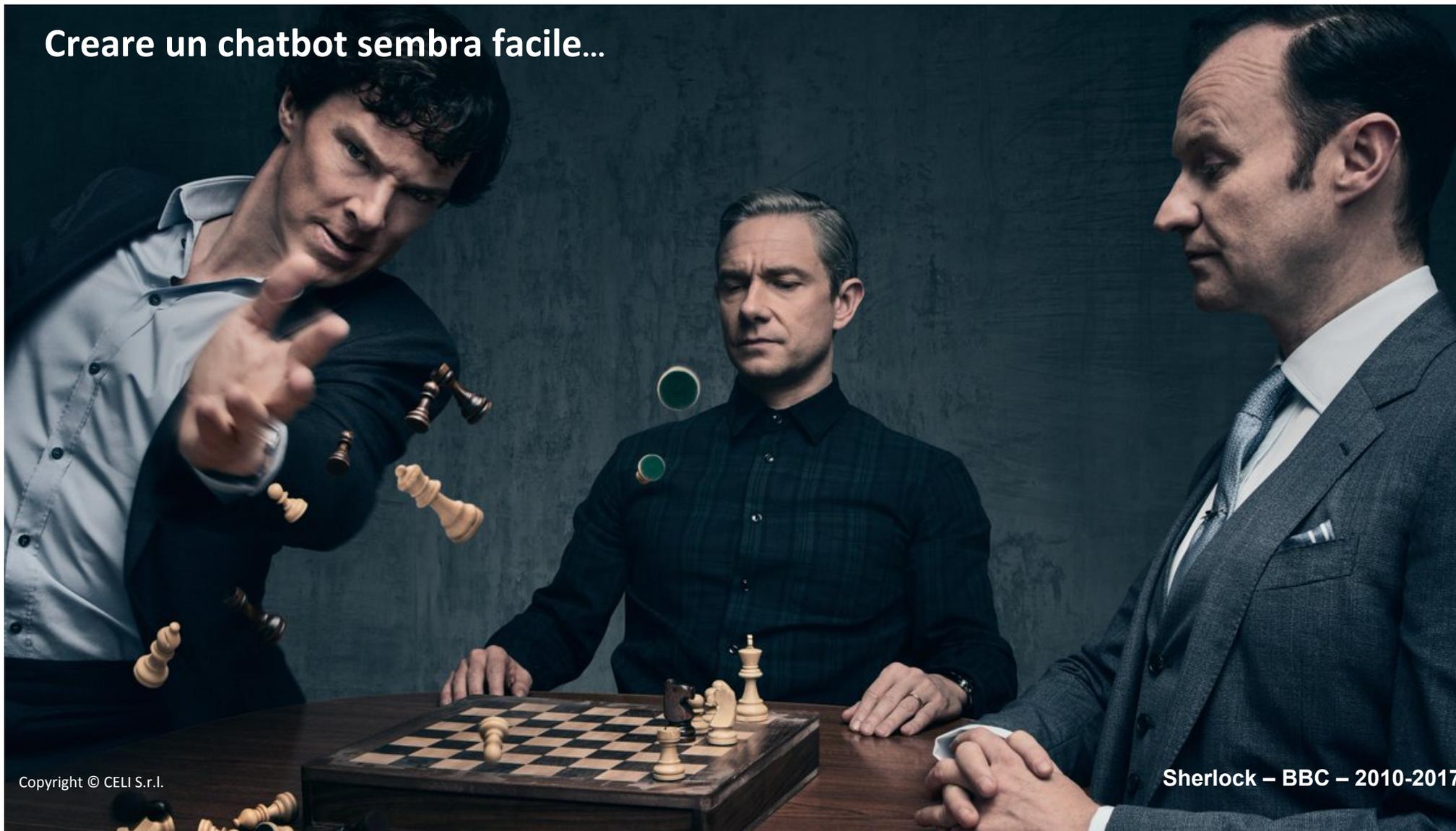


Purrrrrrrrrrrrr

“The first thing we learned almost as soon as we launched is that *users didn’t really know what they wanted to do with the bots, but to the extent they did they had an expectation that they would work like Siri and they could ask the bots to do anything*”

*Poncho CEO Sam Mandel*

Creare un chatbot sembra facile...

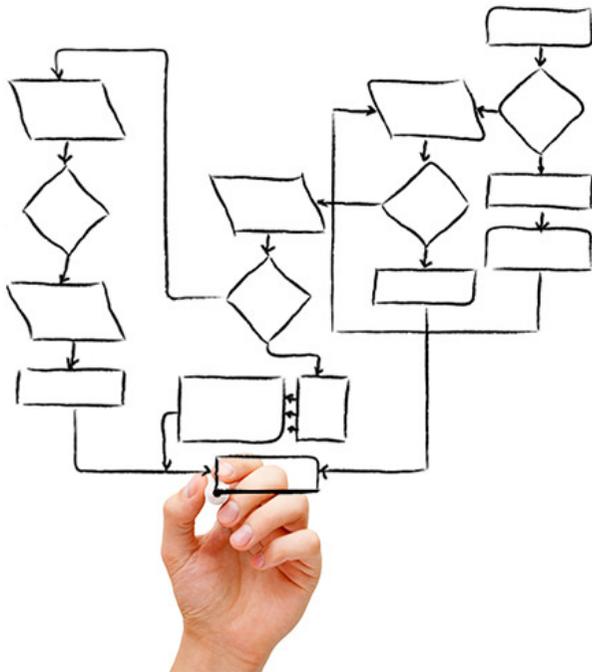


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Sherlock – BBC – 2010-2017

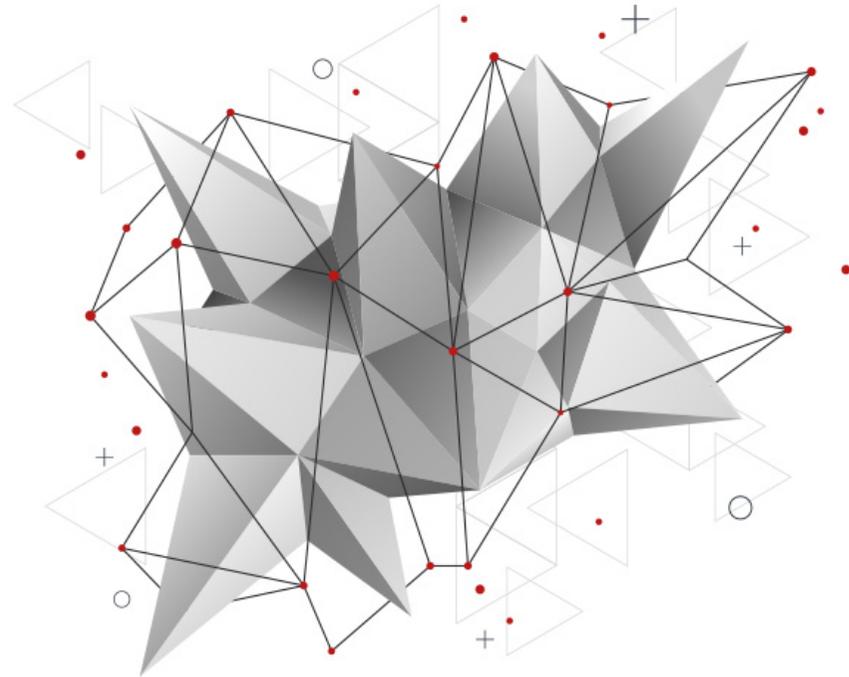
## STANDARD (OVERSIMPLIFIED) APPROACH

Gestisce interazioni semplificate

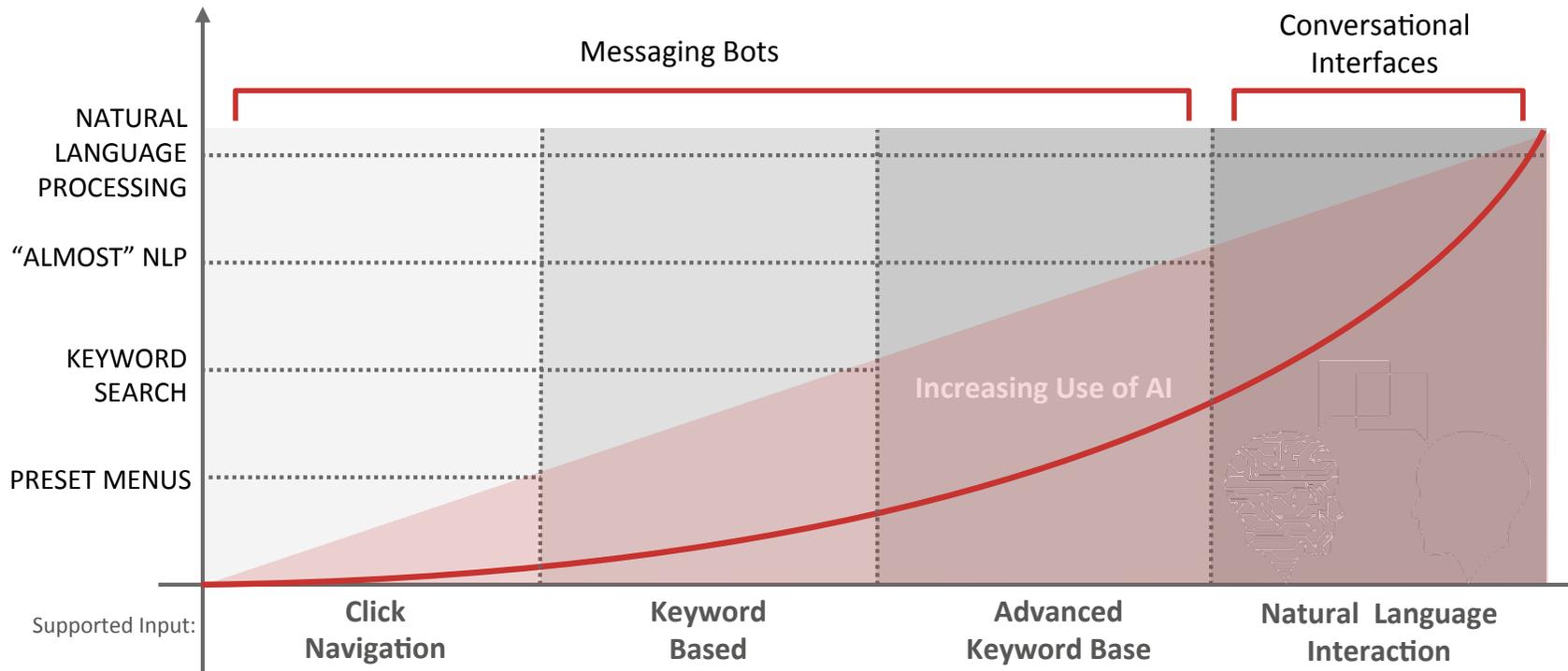


## MULTIDIMENSIONAL AI MODEL

Conversazionale, basato su linguaggio naturale, ambito definito, touchpoint specifici



## Chatbot: classificazione



**Cognitive Technology, Artificial Intelligence, Machine Learning per insegnare ai computer a comprendere le conversazioni in linguaggio naturale.**

**Decision making algorithms and AI**  
**are increasingly common in our**  
**everyday life**



**In moments of need, people turn to their  
phone and search**

# È facile.

## Cerca

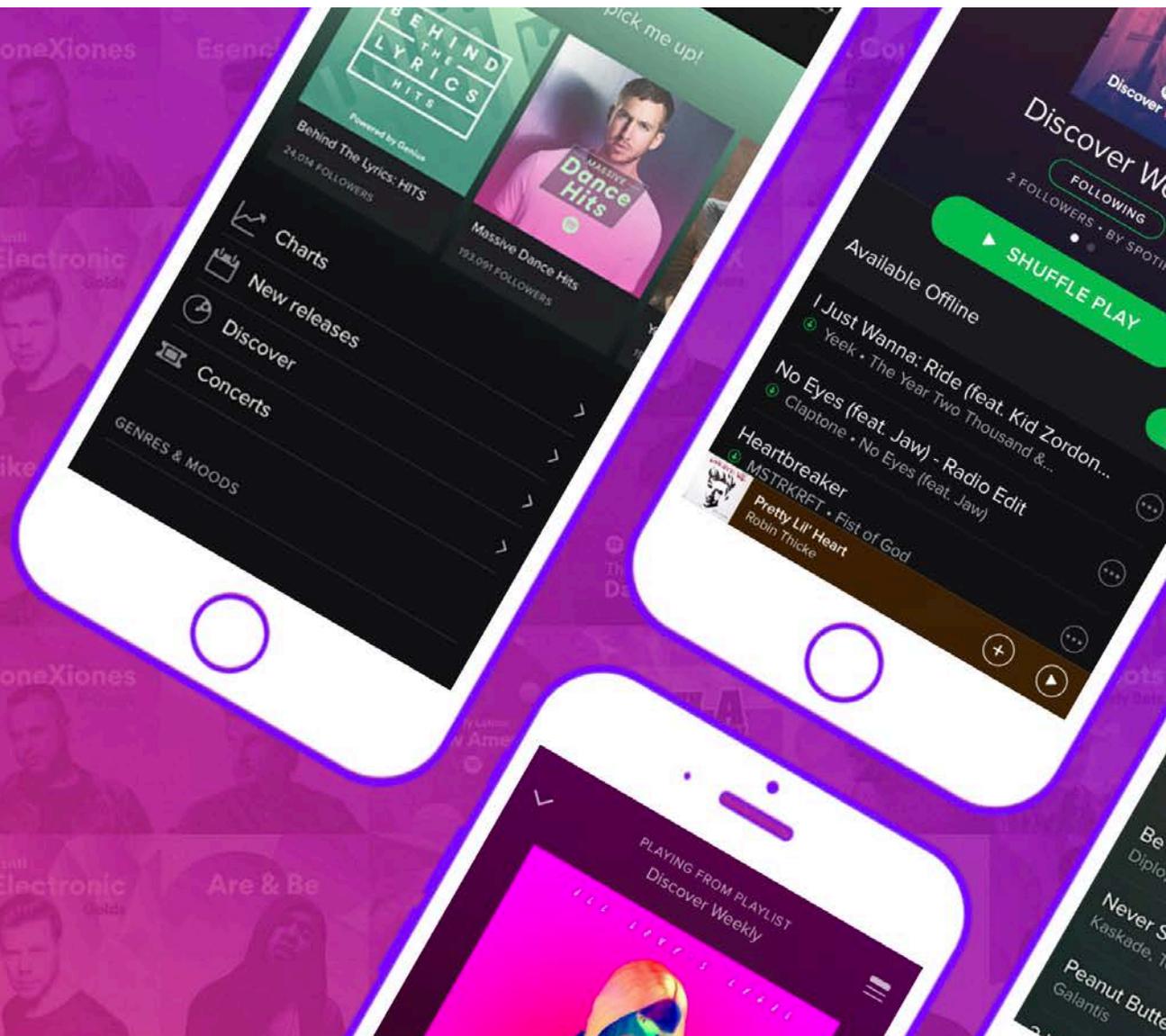
Vuoi ascoltare un brano o un album? Basta cercarlo e premere Play.

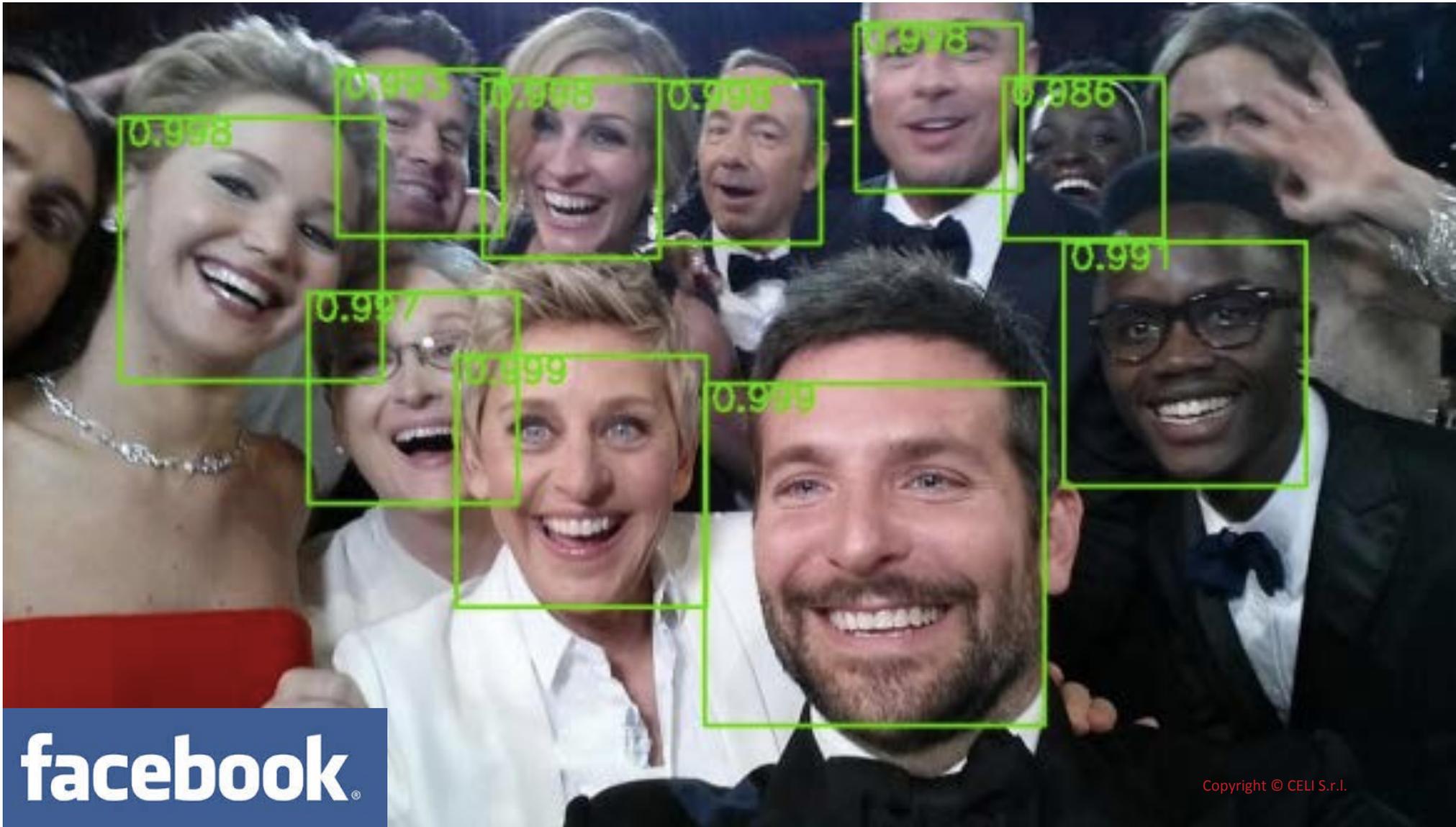
## Naviga

Scopri le ultime classifiche, le nuove uscite e le playlist perfette per ogni momento.

## Scopri

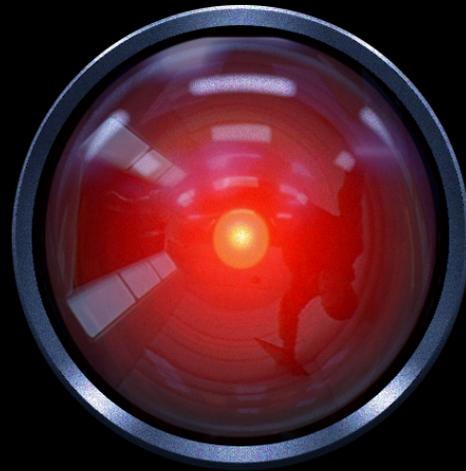
Ogni lunedì ti consiglieremo nuovi brani sulla base dei tuoi ascolti, ma se preferisci puoi ascoltare la Radio.





facebook®

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2001: A SPACE ODYSSEY



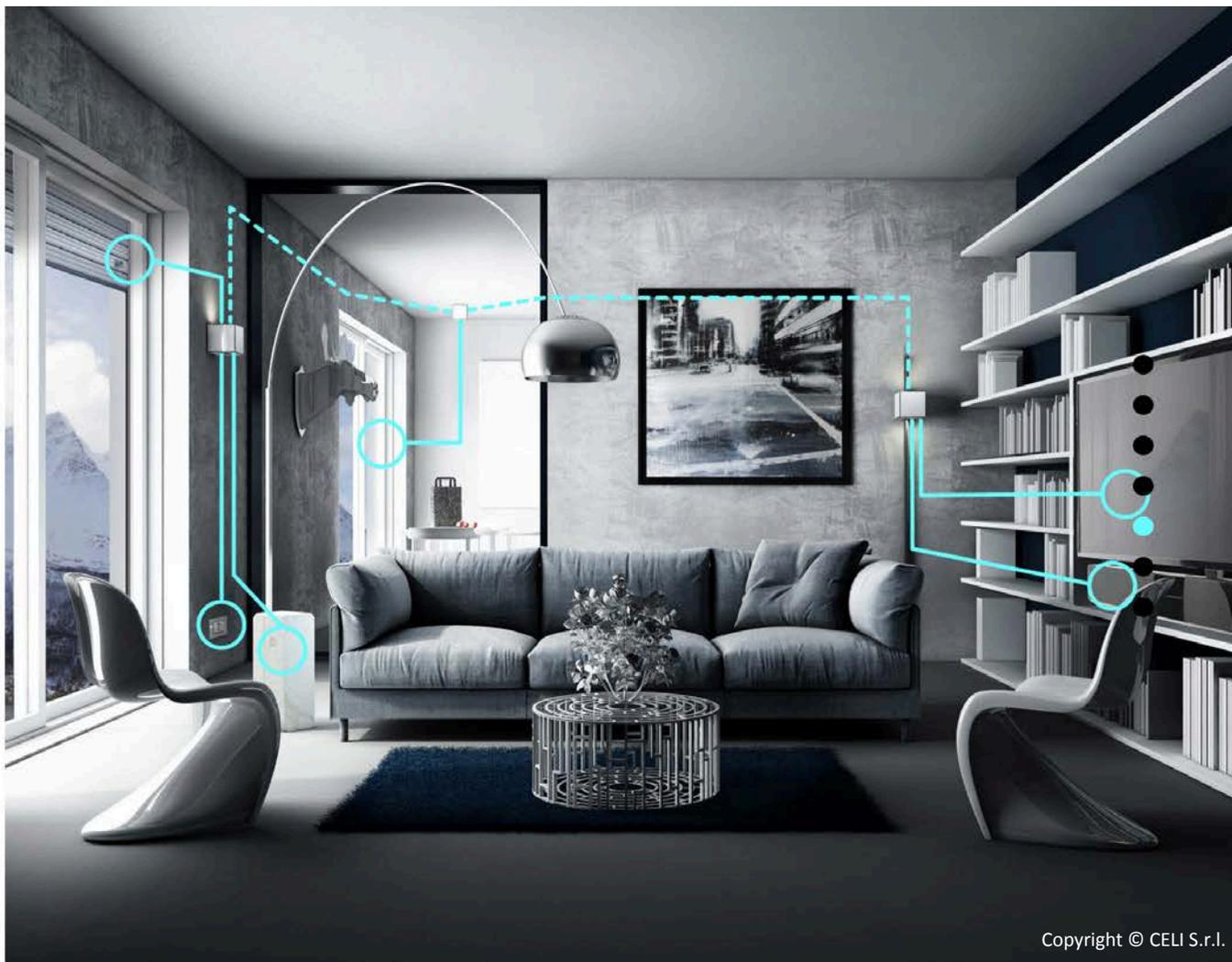
## ACTIVATES

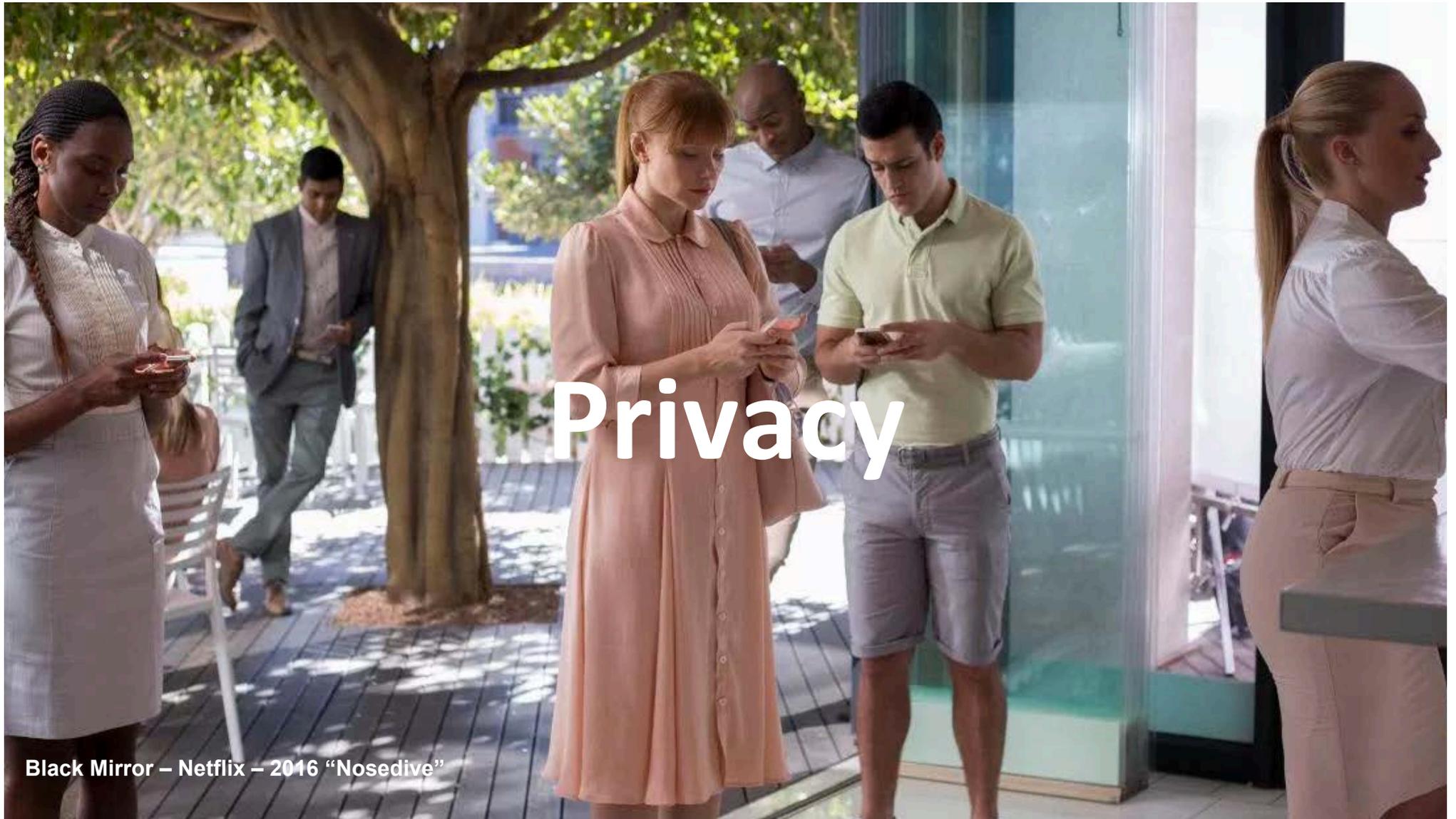
MIND ACTIVATES, TURNS ON, MANAGES, CONTROLS, SWITCHES OFF THE TECHNOLOGY AND THE DEVICES AT HOME TO CREATE THE MOST COMFORTABLE SPACE.

MIND CAN CONTROL ALL OF THE TECHNOLOGY AT HOME.

MIND'S INTELLIGENCE CREATES COMFORTABLE, SAFE, SUSTAINABLE AND PERSONALISED ENVIRONMENT.

**DON'T WORRY, MIND CAN BE TURNED OFF.**





Black Mirror – Netflix – 2016 “Nosedive”

<https://www.theguardian.com/world/2017/feb/17/german-parents-told-to-destroy-my-friend-cayla-doll-spy-on-children>



**Privacy:**

Cayla ist verboten in Deutschland

home > tech

Chatbots

# Chatbot lawyer overturns 160,000 parking tickets in London and New York

Free service DoNotPay helps appeal over \$4m in parking fines in just 21 months, but is just the tip of the legal AI iceberg for its 19-year-old creator



This article is 8 months old

12,084

Samuel Gibbs

Tuesday 28 June 2016 11.07 BST



DoNotPay has been helping Londoners and New Yorkers fight illegal parking fines, like this one from Lambeth in London. Photograph: Alamy

## Meno lavori?

**Non possiamo  
controllare ciò che  
non comprendiamo**



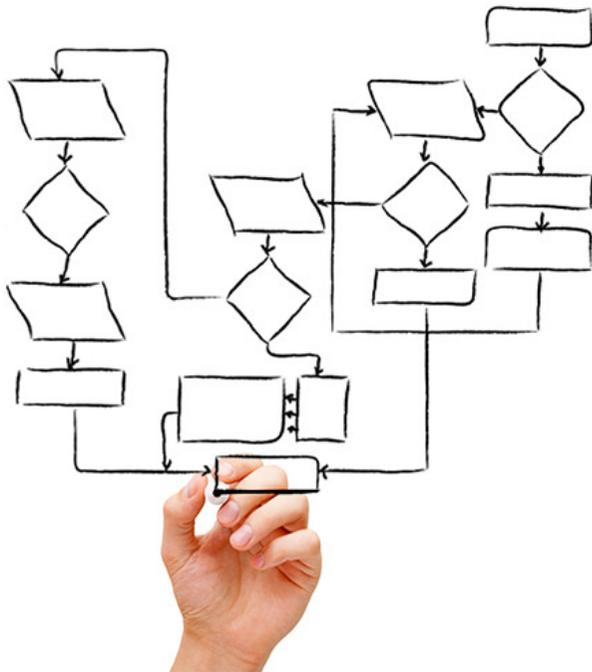
# Prove tecniche di chatbot: come costruirli e farli funzionare

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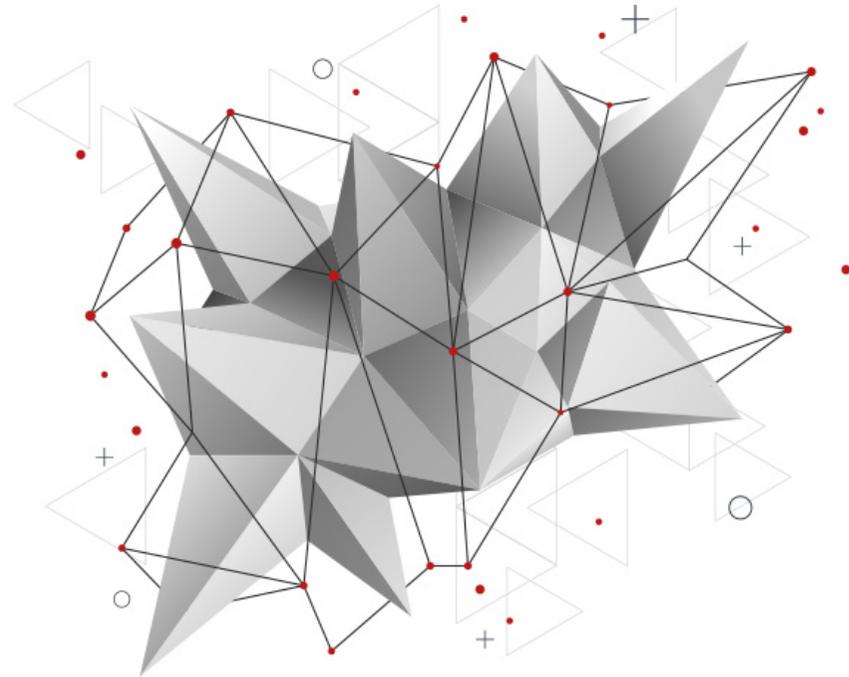
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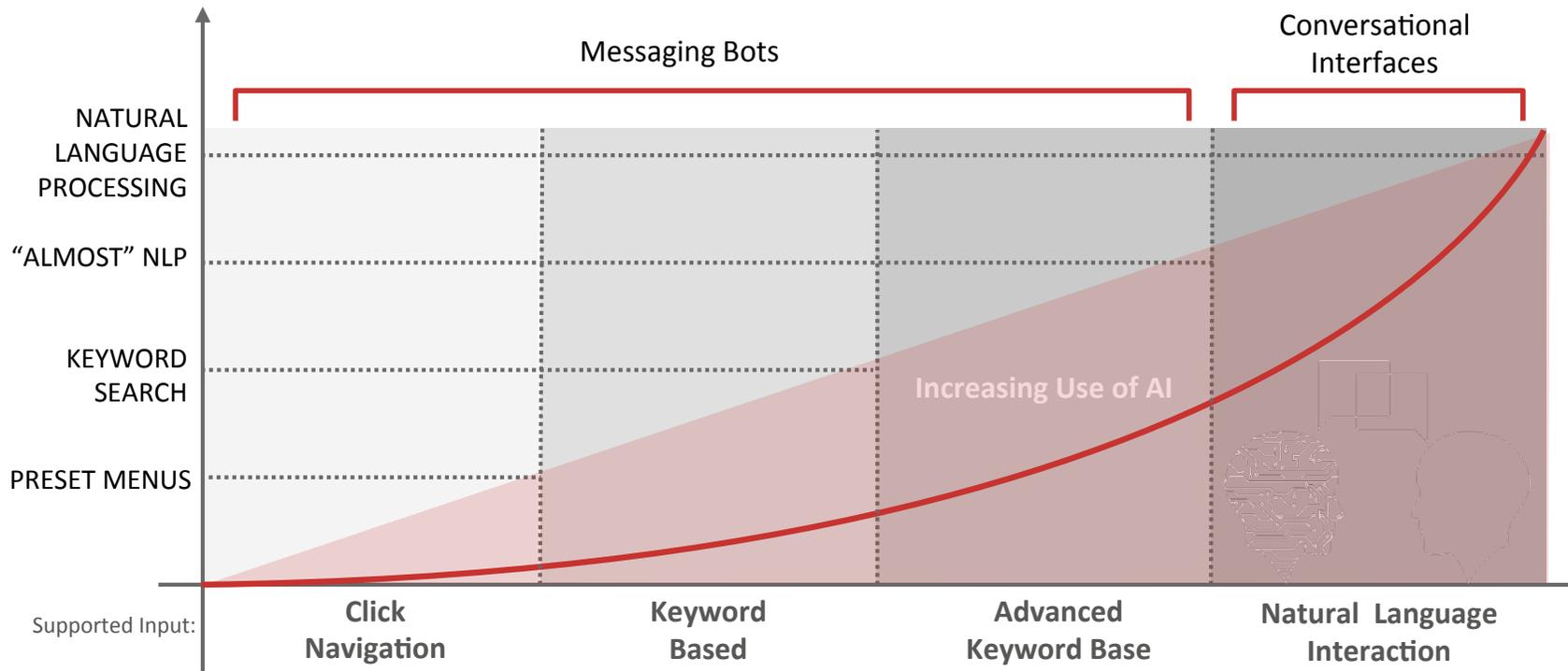


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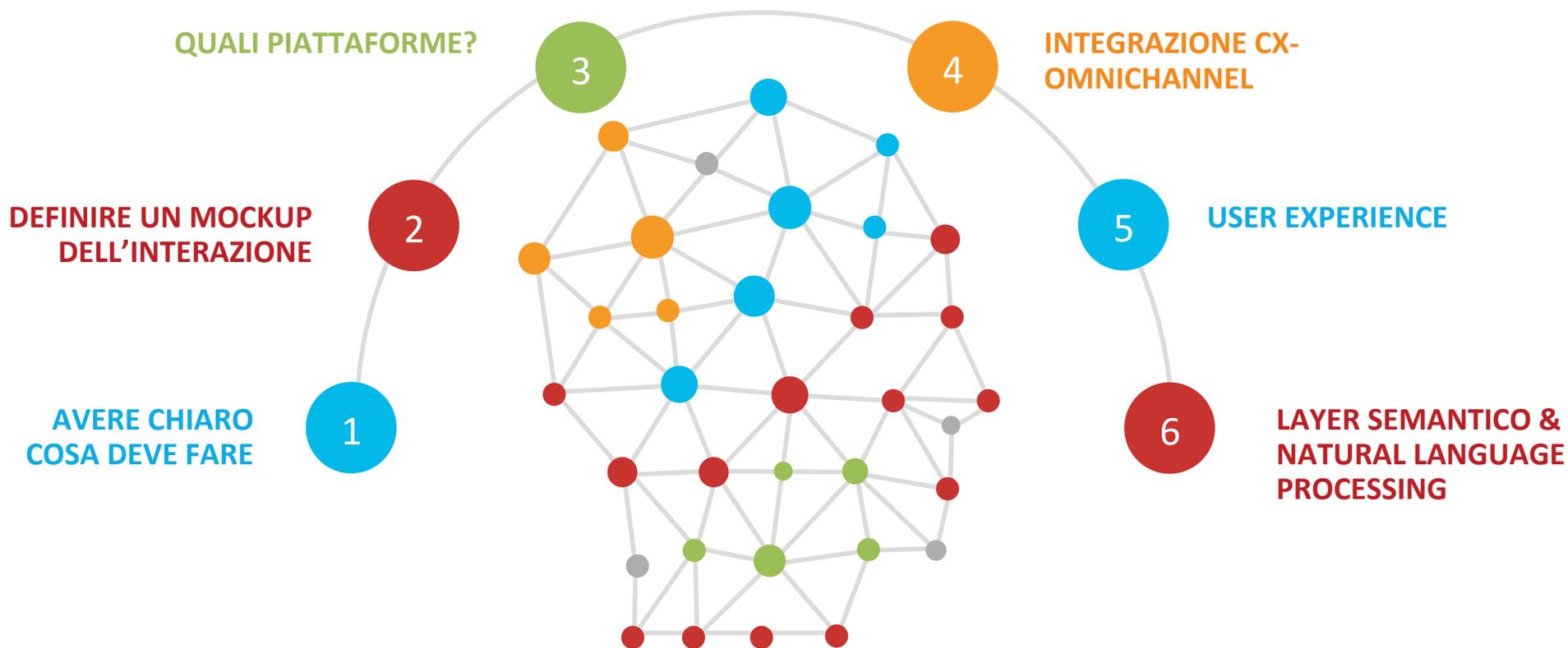


## Chatbot: classificazione



**Cognitive Technology, Artificial Intelligence, Machine Learning per insegnare ai computer a comprendere le conversazioni in linguaggio naturale.**

## Cosa ci vuole per fare un chatbot che funzioni?



# Chatbot: cosa devono fare?

AVERE CHIARO  
COSA DEVE FARE

1

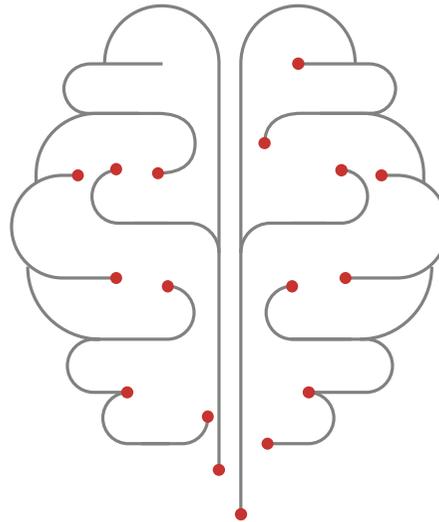
## EFFICACIA

Risolvere il problema



## SEMPLICITÀ

Gestire processi (complessi) in modo semplice



## COMPrensIONE

Utilizzare un linguaggio il più vicino possibile a quello umano



## COMPLIANCE

Rispettare policy e privacy

**Reinventare\* la relazione tra utente e tecnologia attraverso il linguaggio naturale (testo e voce)**

\*specialmente in presenza di sistemi complessi

**DEFINIRE UN MOCKUP  
DELL'INTERAZIONE**

2



## QUALI PIATTAFORME?

3





# Chatbot e Digital Customer Journey

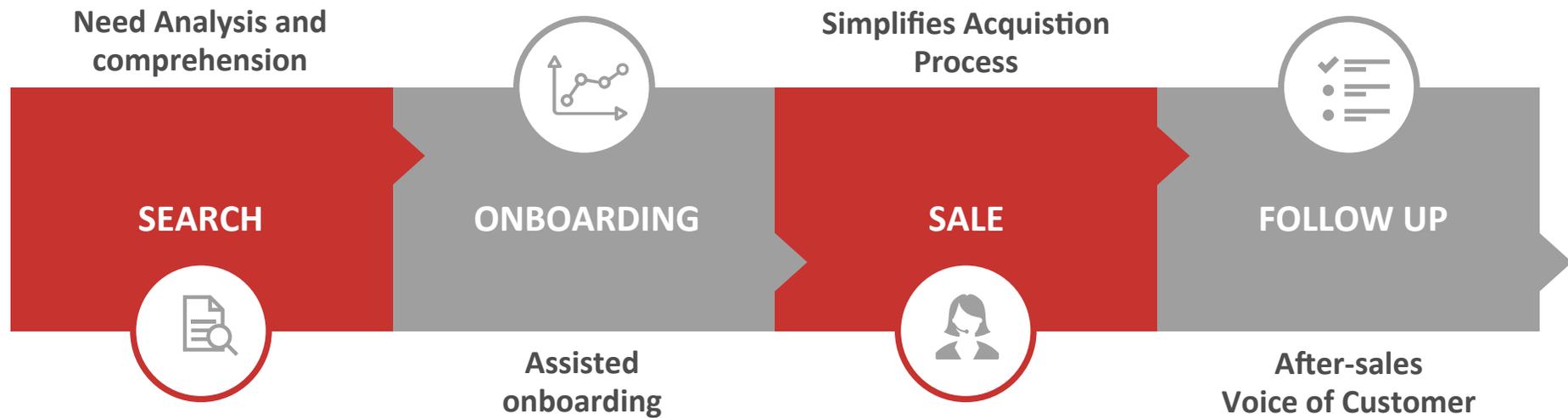
4

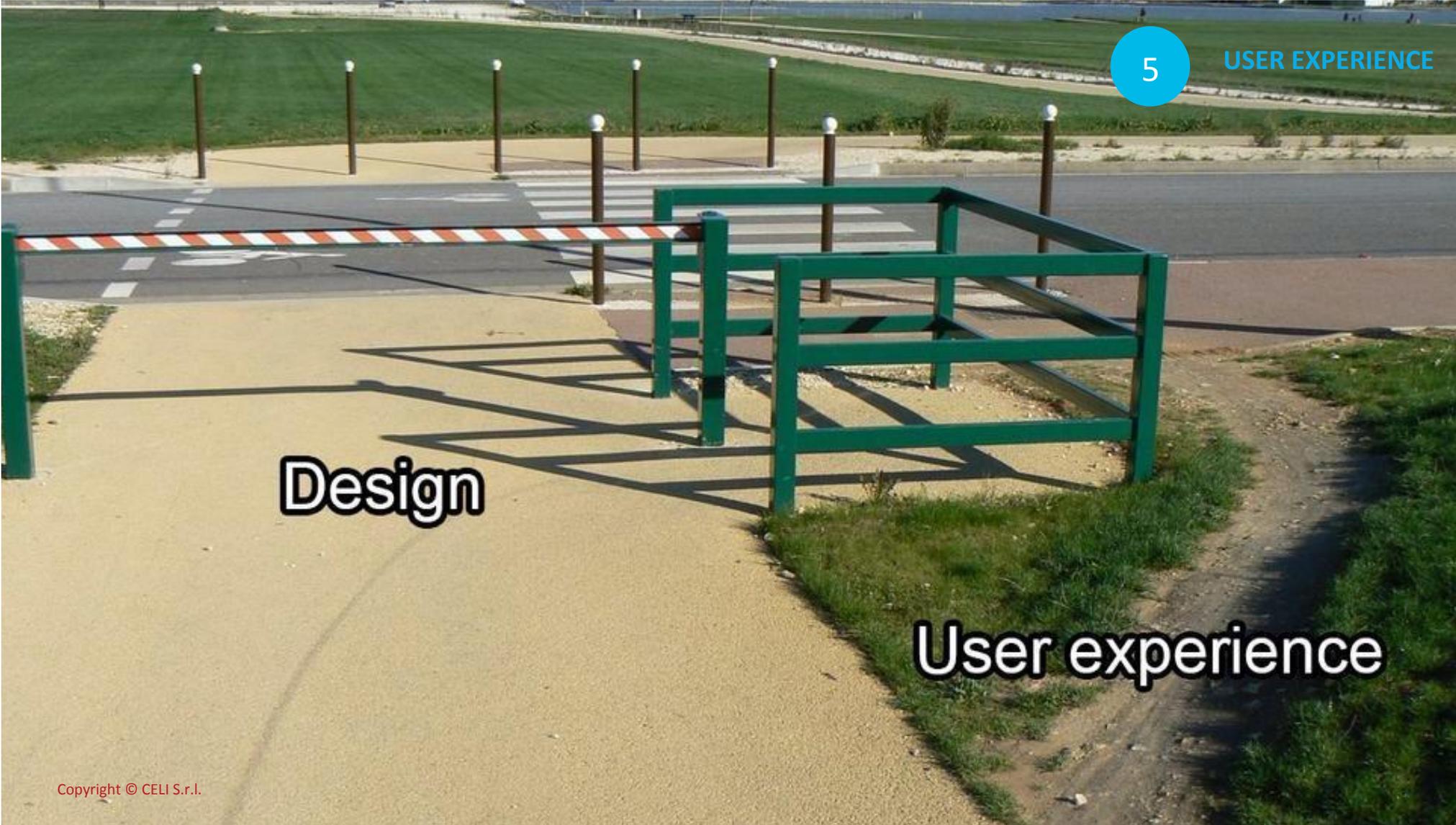
INTEGRAZIONE CX-OMNICHANNEL

Information and choice

Onboarding

Memory & feedback





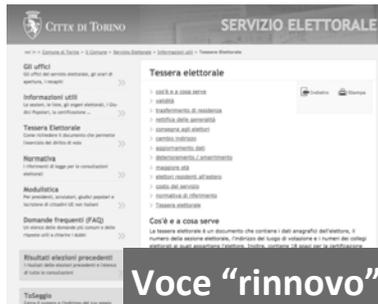
**Design**

**User experience**

# Come rinnovo la mia tessera elettorale online?



USER EXPERIENCE



Voce "rinnovo" mancante



1. Identificazione Via SMS



2. Dati Anagrafici



3. Captcha



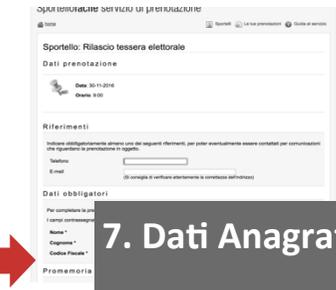
4. Inserimento codice di accesso SMS



5. Scelta della categoria\*



6. Quale servizio?\*



7. Dati Anagrafici\*

\*Step ripetuto

# Come cambierebbe con un chatbot?

5

USER EXPERIENCE



Buongiorno

Benvenuto, in cosa posso aiutarti?

Devo rinnovare la tessera elettorale

Certo, che genere di rinnovo hai bisogno?

1. Cambio residenza
2. Tessera completa
3. Deterioramento/smarrimento
4. Altro

2

Ecco il link da cui iniziare la procedura di rinnovo della tessera completa. Segui i passi e prenoterai un appuntamento presso l'ufficio elettorale. [www.elezioni.it](http://www.elezioni.it)



2. Identificazione via SMS



3. Dati Anagrafici e codice SMS



4. Prenotazione



TechCrunch

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LAYER SEMANTICO & NATURAL LANGUAGE PROCESSING

Liked Following Share

Sign Up

Message

Featured for you

Get in touch with TechCrunch



100% response rate  
Typically replies instantly

Message

Get tickets to TechCrunch Di



TechCrunch Disrupt New..  
15 May-17 May · Pier 36, Ne...

News/media website

TechCrunch

Very responsive

Invite friends to

Breaking technology n  
number one guide for

About

I am looking for an article

Just a sec, I'm looking that up...



I Am Cardboard Showing Newly Funded DSCVR Headset AT CES  
Jan 08, 2016 by Jay  
Discuss I Am Cardboard

# Natural Language Processing semplificato



**DATI**

**DIALOGUE COMPREHENSION**

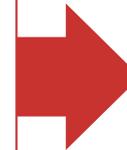
**DIALOGUE MANAGEMENT**

- SEMI-STATEFUL BOT
- RETRIEVAL-BASED MODEL
- CONTEXT AWARENESS
- MACHINE LEARNING

↕

**LINGUISTIC COMPREHENSION**

- TOKENIZATION
- SENTENCE SPLITTING
- MORPHOLOGICAL ANALYSIS
- DISAMBIGUATION



**INTELLIGENZA UMANA**



**LAYER SEMANTICO & NATURAL LANGUAGE PROCESSING**

## Come usare le fonti di Natural Language

Personas



Customer Feedback



Documenti interni



Gestione FAQ



Prevenzione churn



6

## LAYER SEMANTICO & NATURAL LANGUAGE PROCESSING

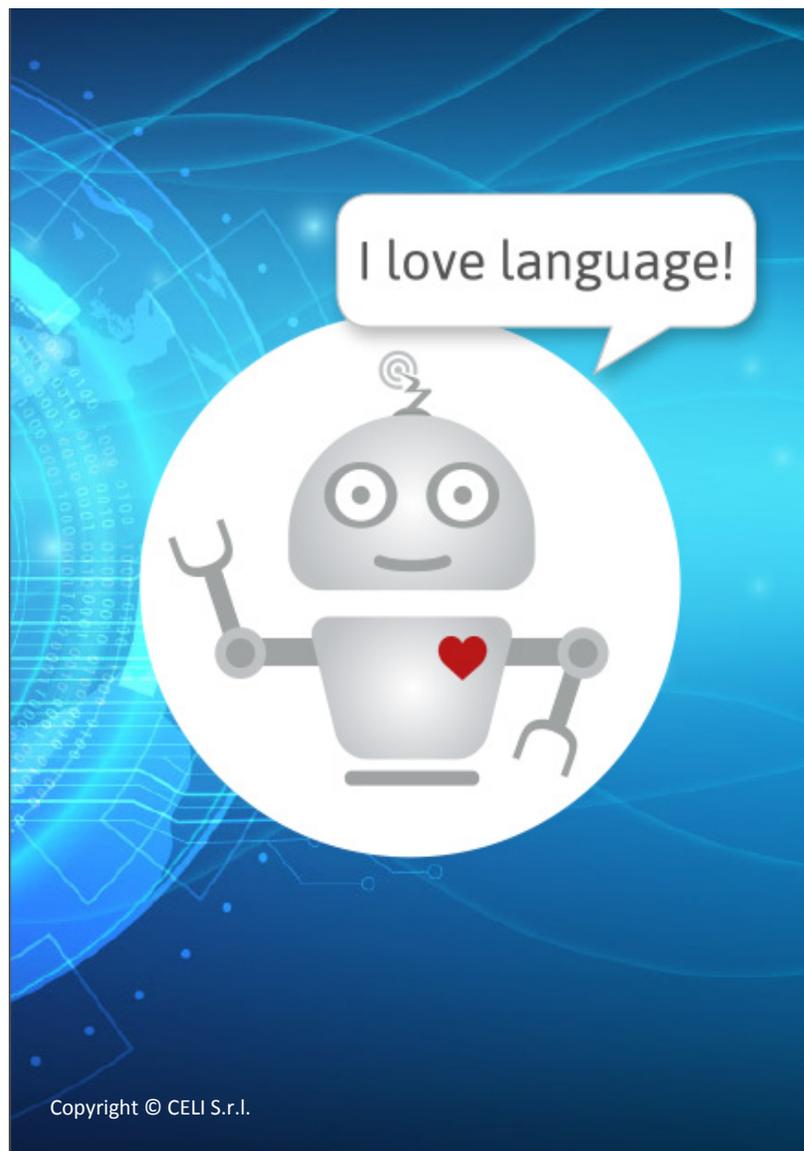
Arricchimento dei cluster con variabili attitudinali e comportamentali derivanti da analisi di dati testuali

Classificazione automatica e sentiment dei feedback di clienti in progetti di customer experience management

Arricchimento delle informazioni di profilazione dei clienti

Riduzione delle chiamate inbound per richieste di assistenza tramite un sistema evoluto di suggerimenti per la ricerca

Analisi dei campi note del CRM per arricchire e migliorare i modelli di prevenzione del churn



**E ora vediamo  
come funziona...**



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