

Il mondo dei chatbot: dalle ricette all'Intelligenza Artificiale

Alessia Bianchini – Key Account Manager

Mariella Borghi – Business Development Manager



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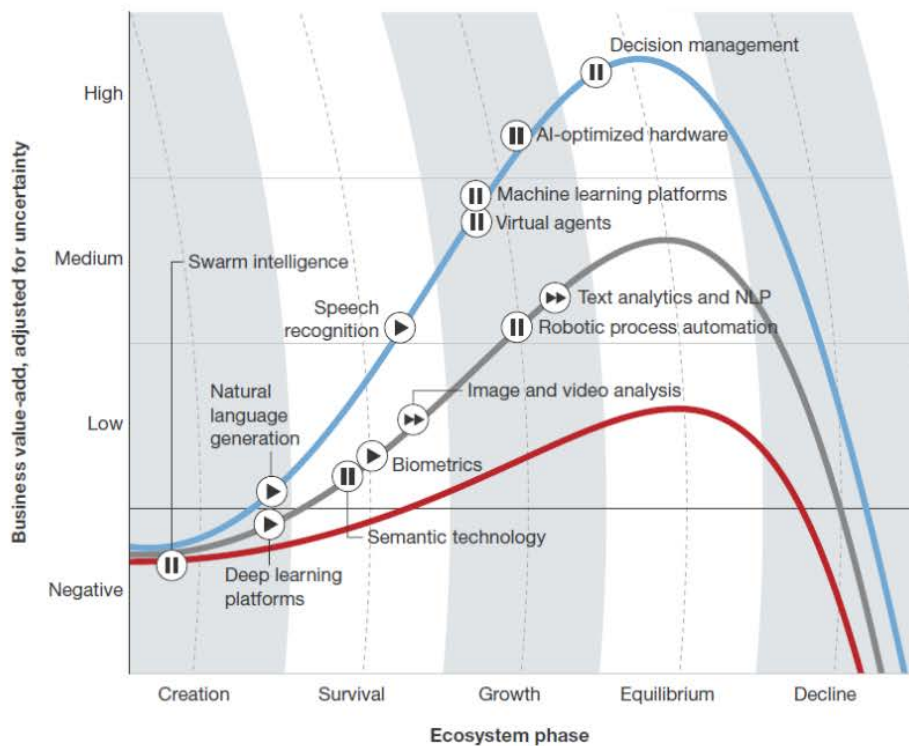
Artificial Intelligence: Using algorithms and computers to figure out complex (human) tasks

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](#)

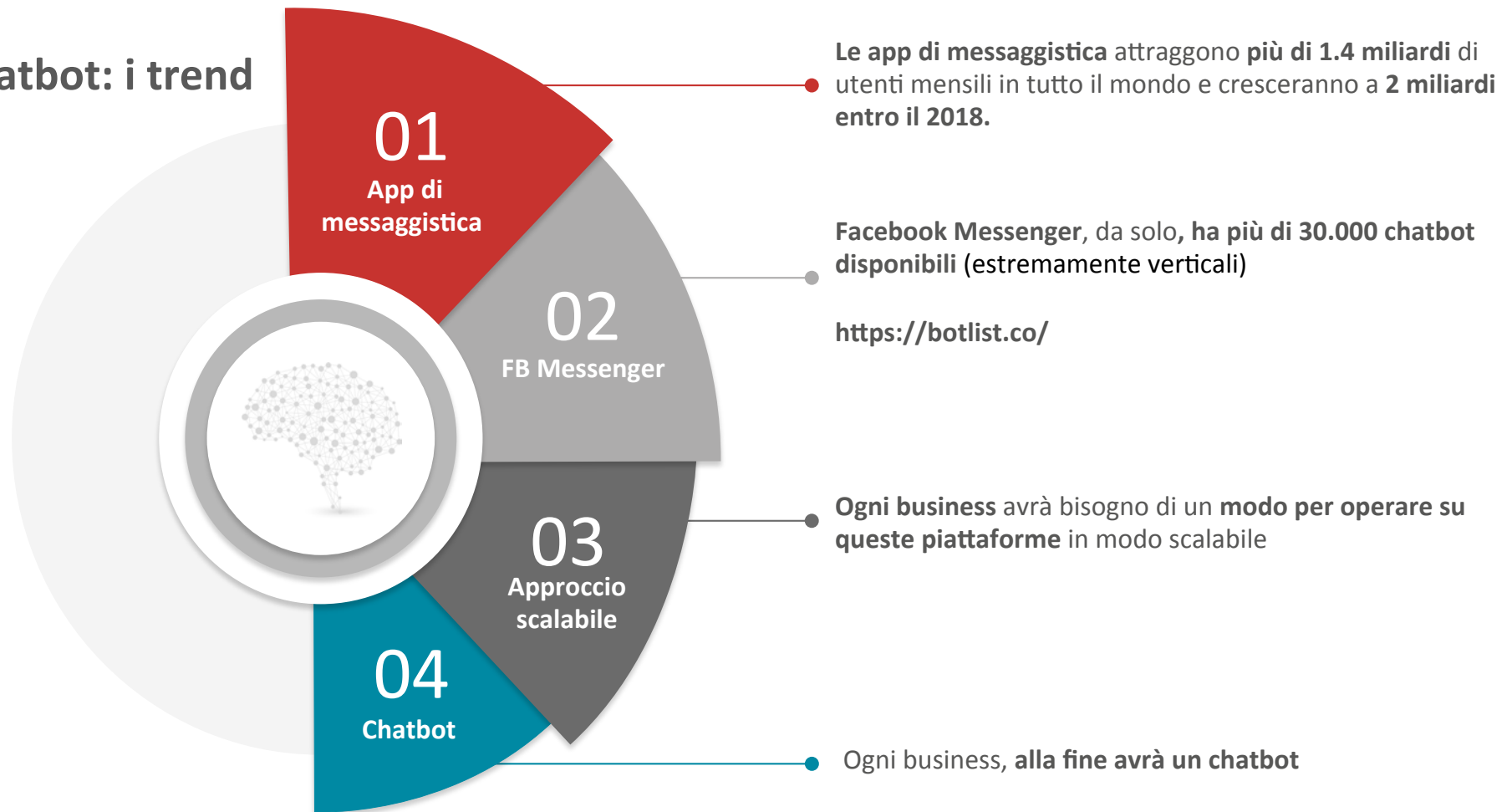
** [Forrester Research](#)

*** [IDC](#)



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

Chatbot: i trend





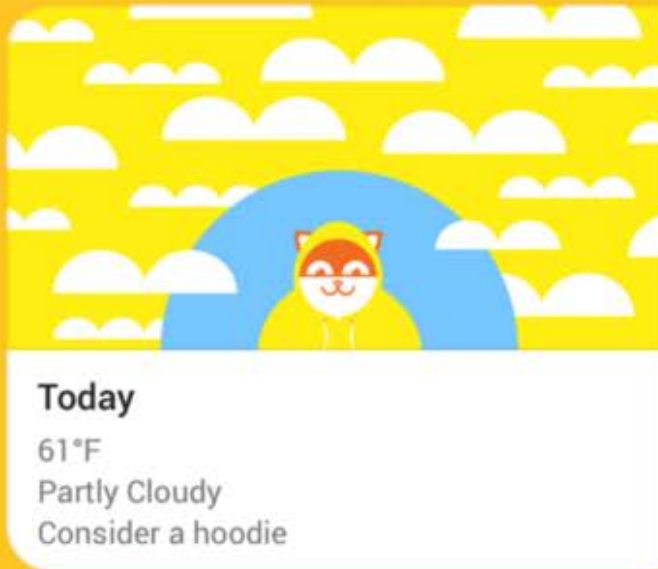
78%

**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!

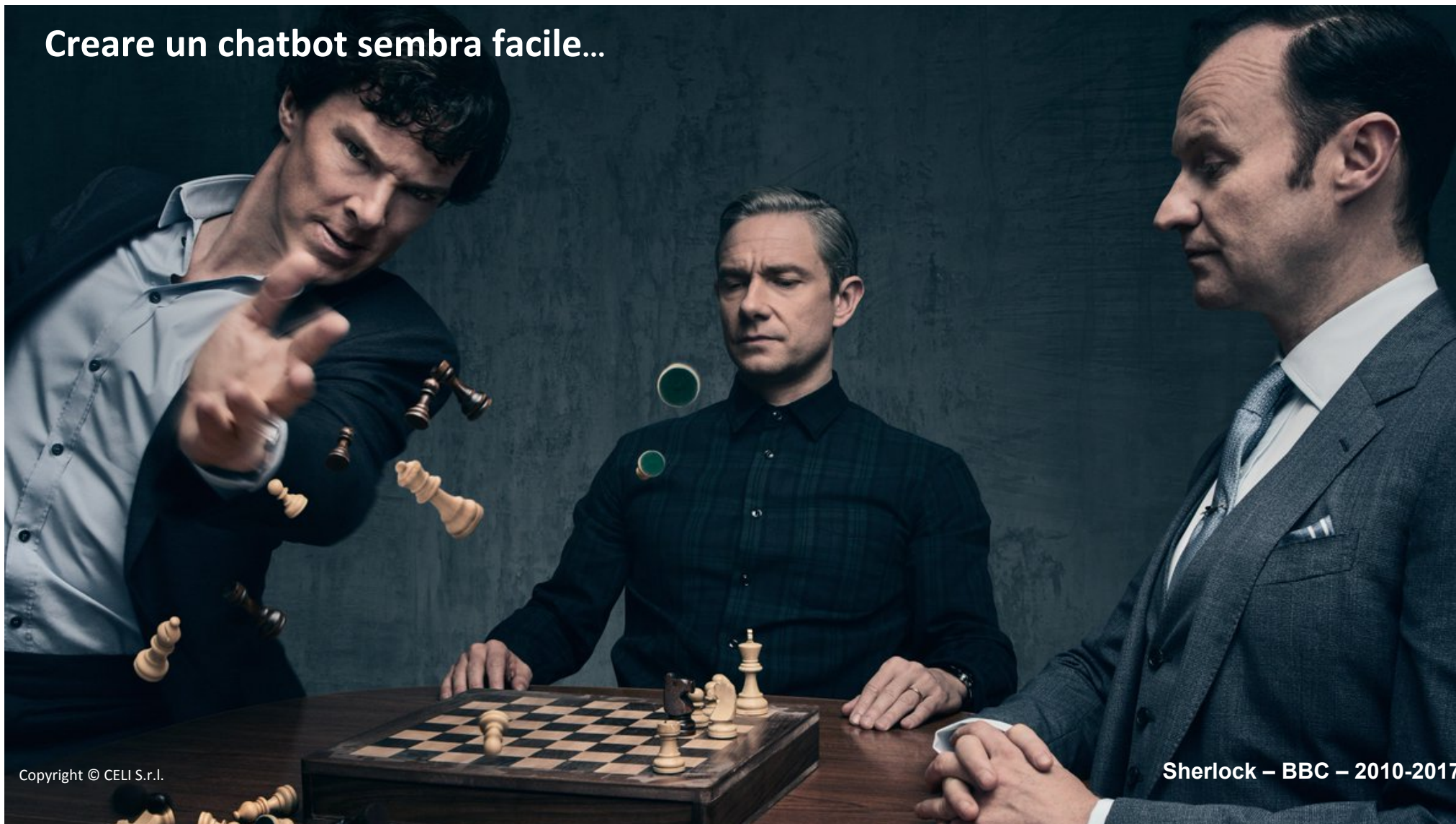


Purrrrrrrrrrrrr

“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...

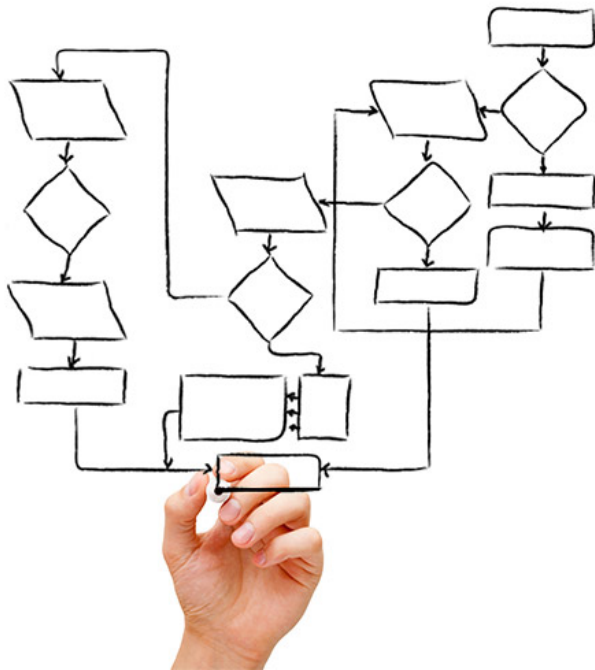


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Sherlock – BBC – 2010-2017

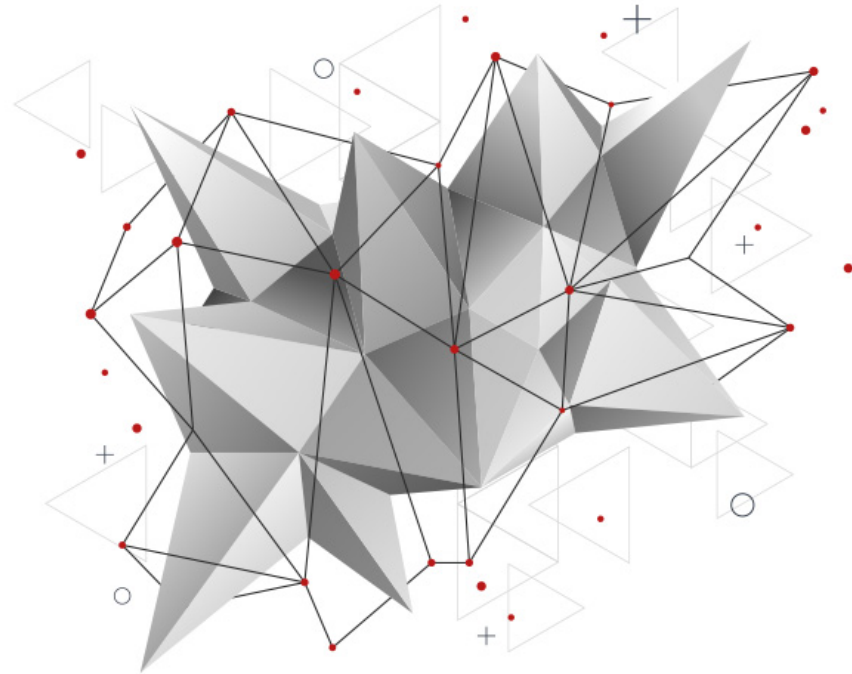
STANDARD (OVERSIMPLIFIED) APPROACH

Gestisce interazioni semplificate

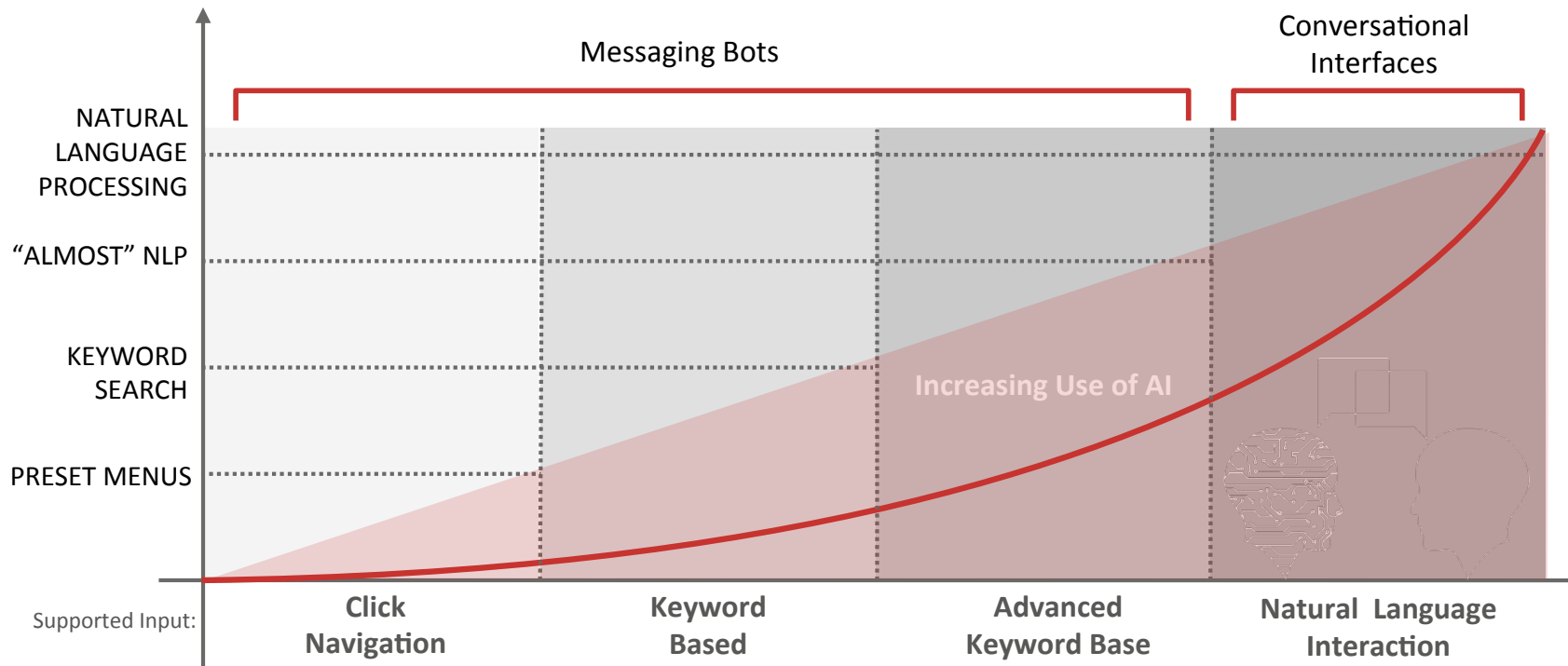


MULTIDIMENSIONAL AI MODEL

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

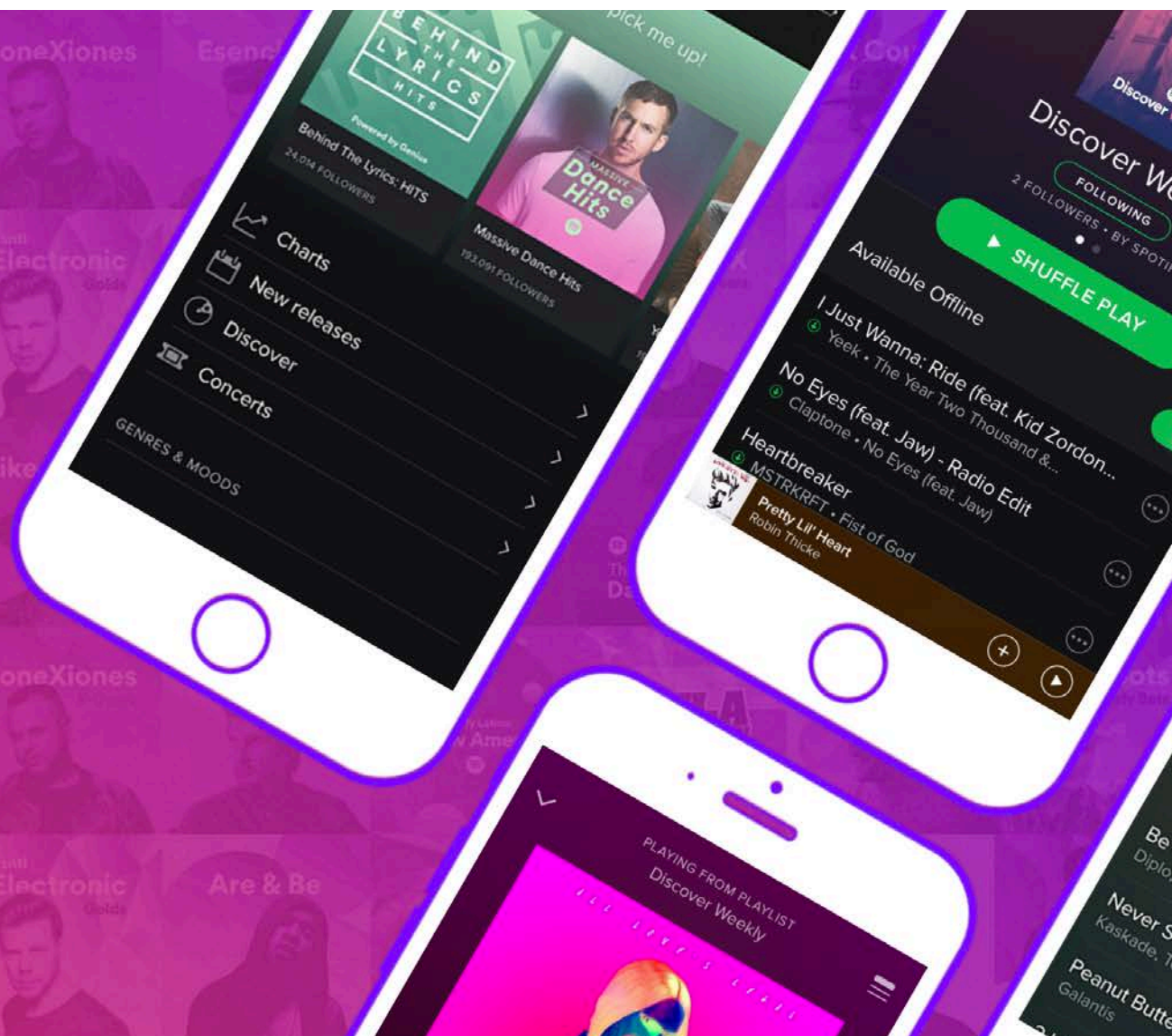
Vuoi ascoltare un brano o un album? Basta cercarlo e premere Play.

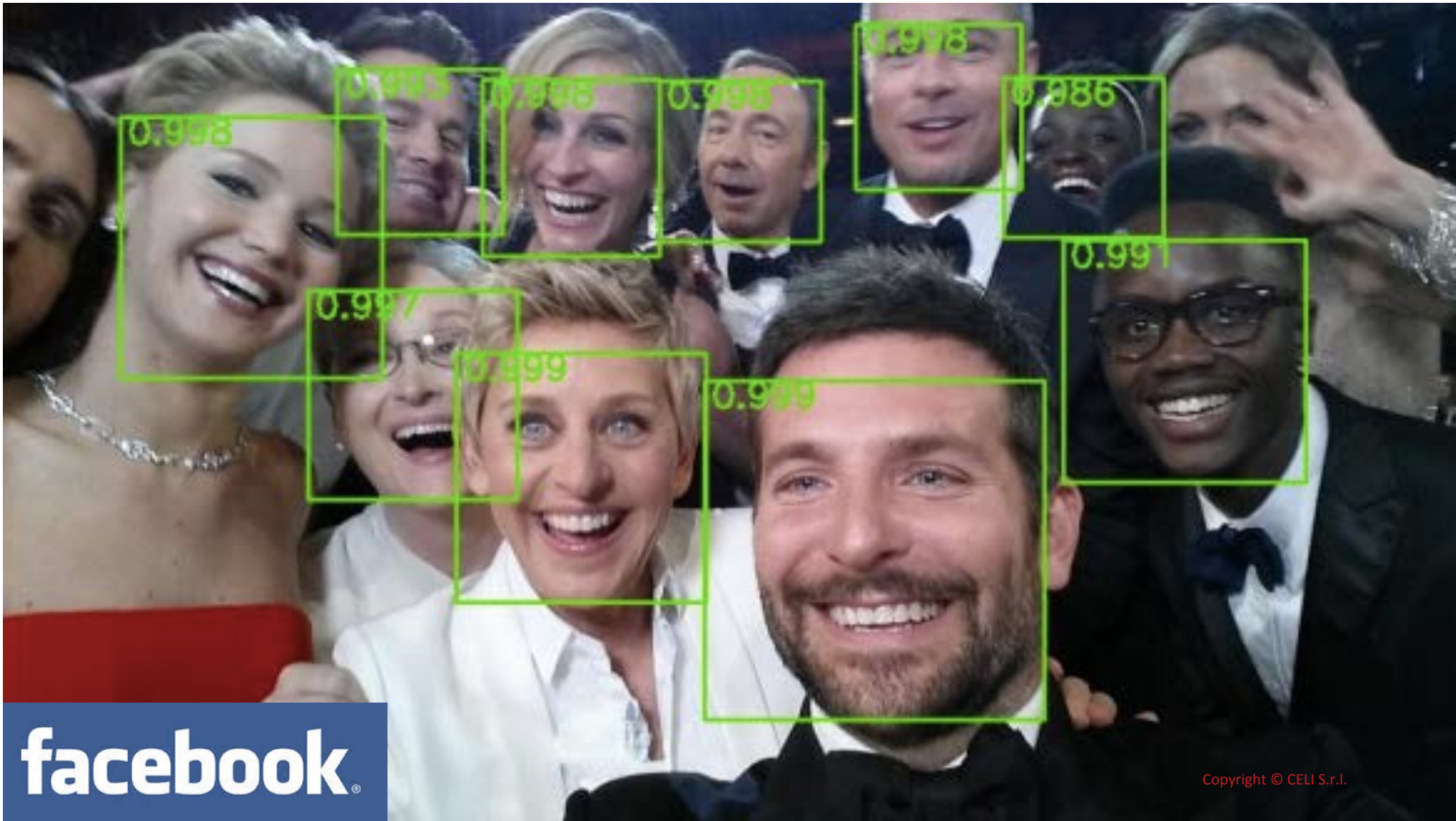
Naviga

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.





0.998

0.995

0.998

0.998

0.998

0.986

0.997

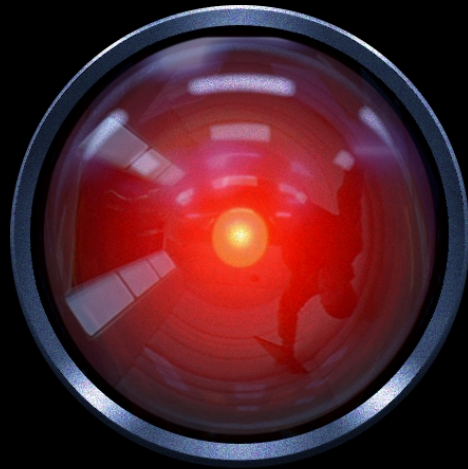
0.999

0.999

0.991

facebook®

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2001: A SPACE ODYSSEY



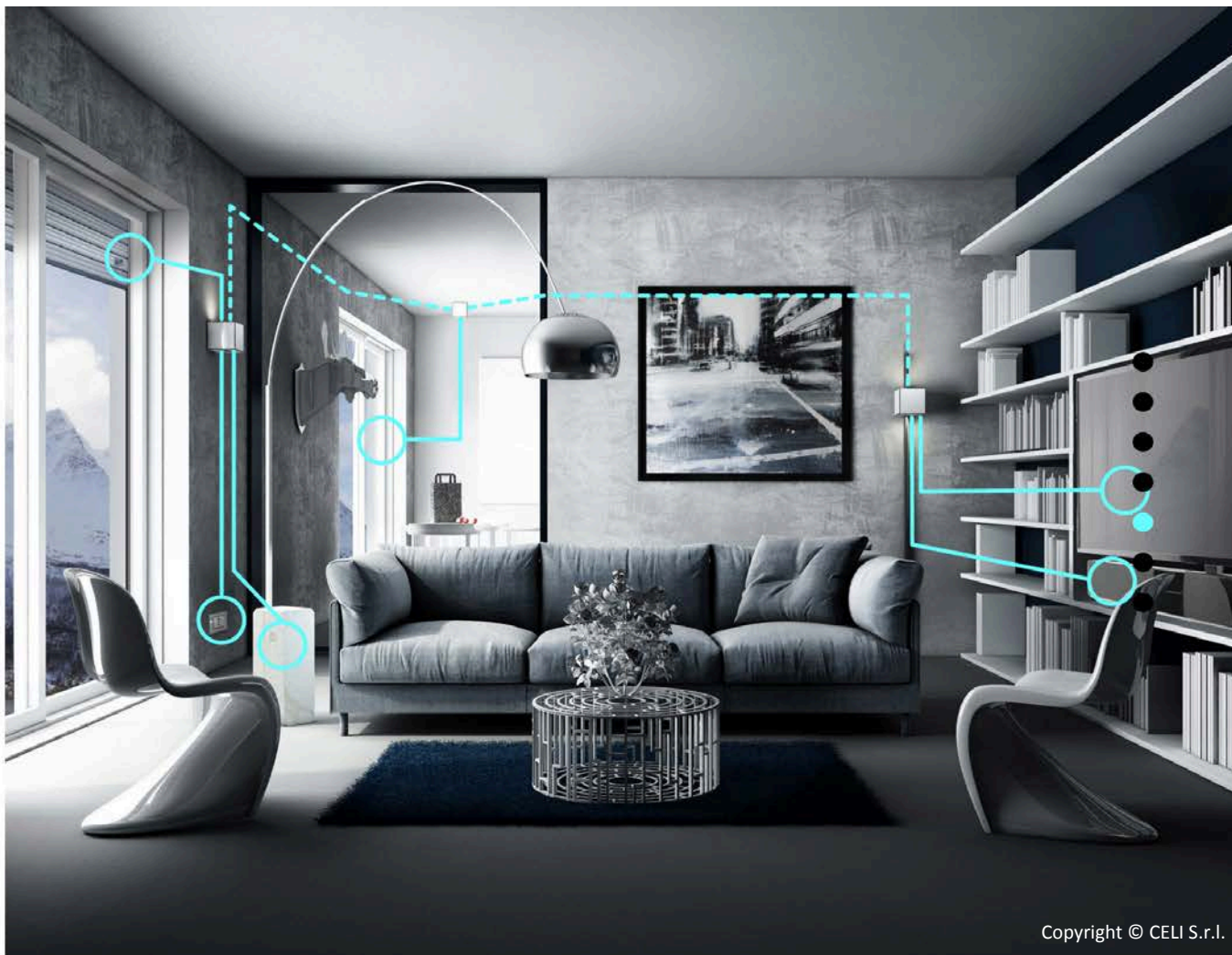
ACTIVATES

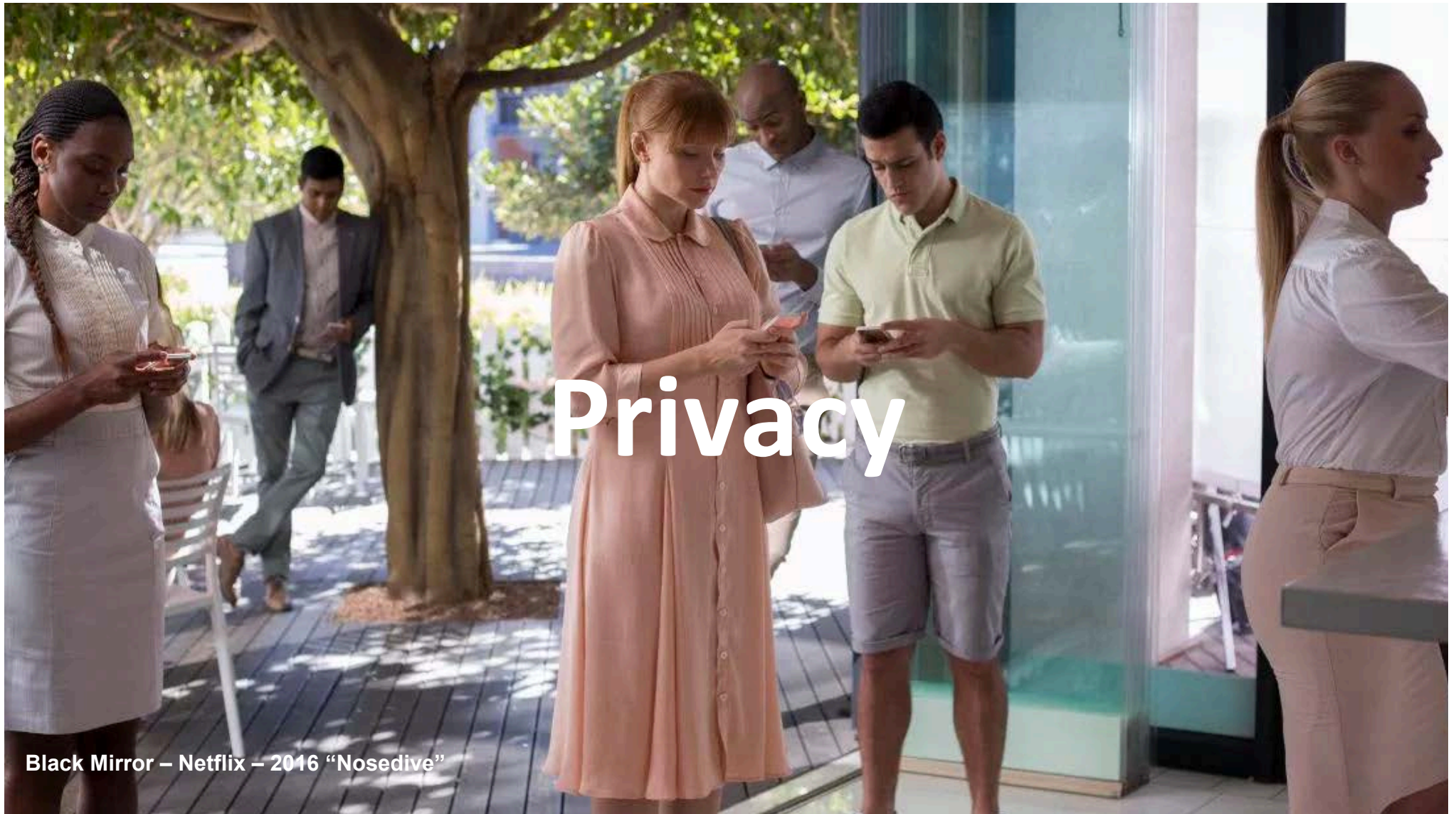
MIND ACTIVATES, TURNS ON, MANAGES, CONTROLS, SWITCHES OFF THE TECHNOLOGY AND THE DEVICES AT HOME TO CREATE THE MOST COMFORTABLE SPACE.

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**



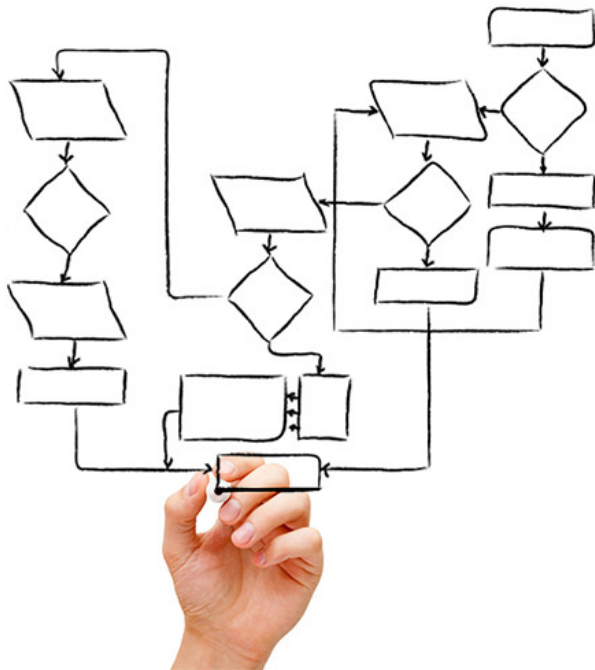
Prove tecniche di chatbot: come costruirli e farli funzionare

Alessia Bianchini – Key Account Manager

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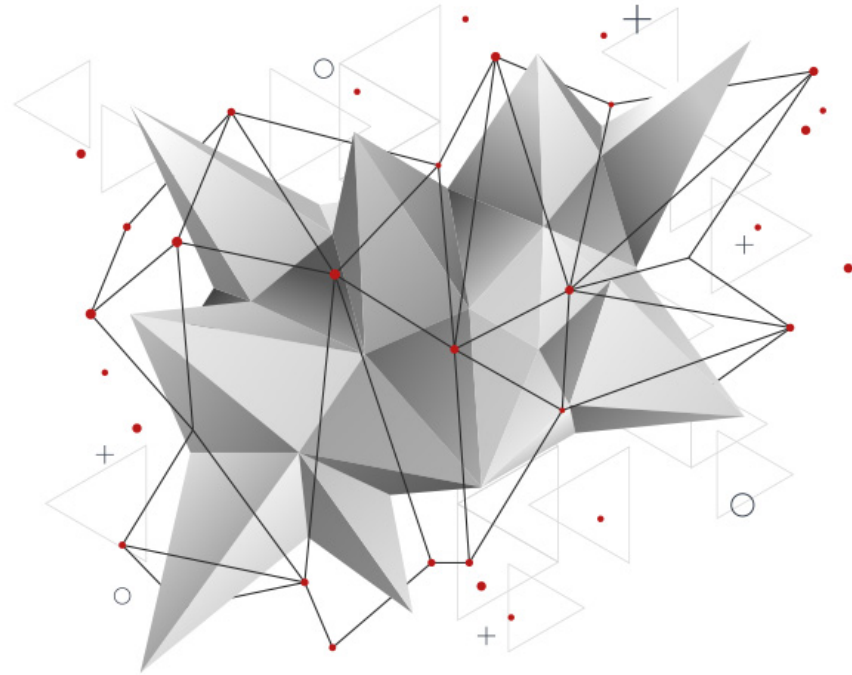
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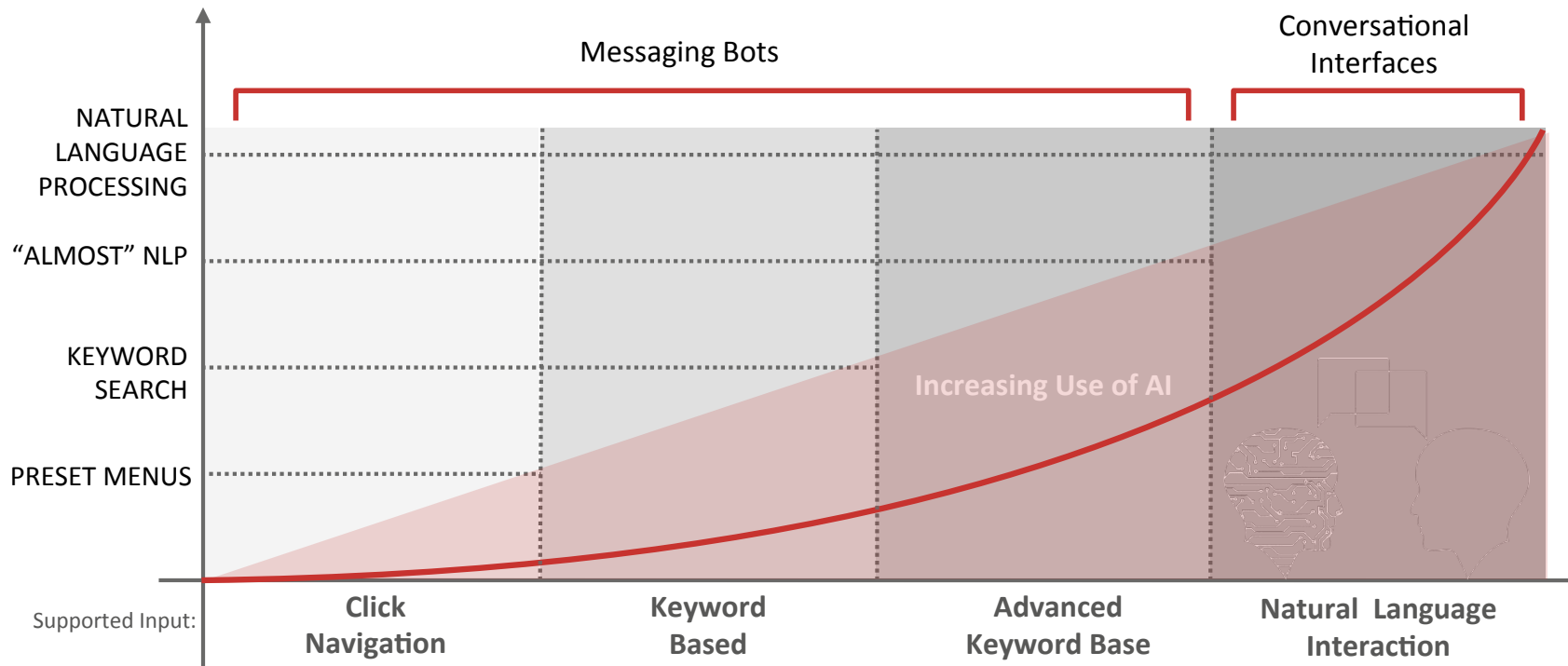


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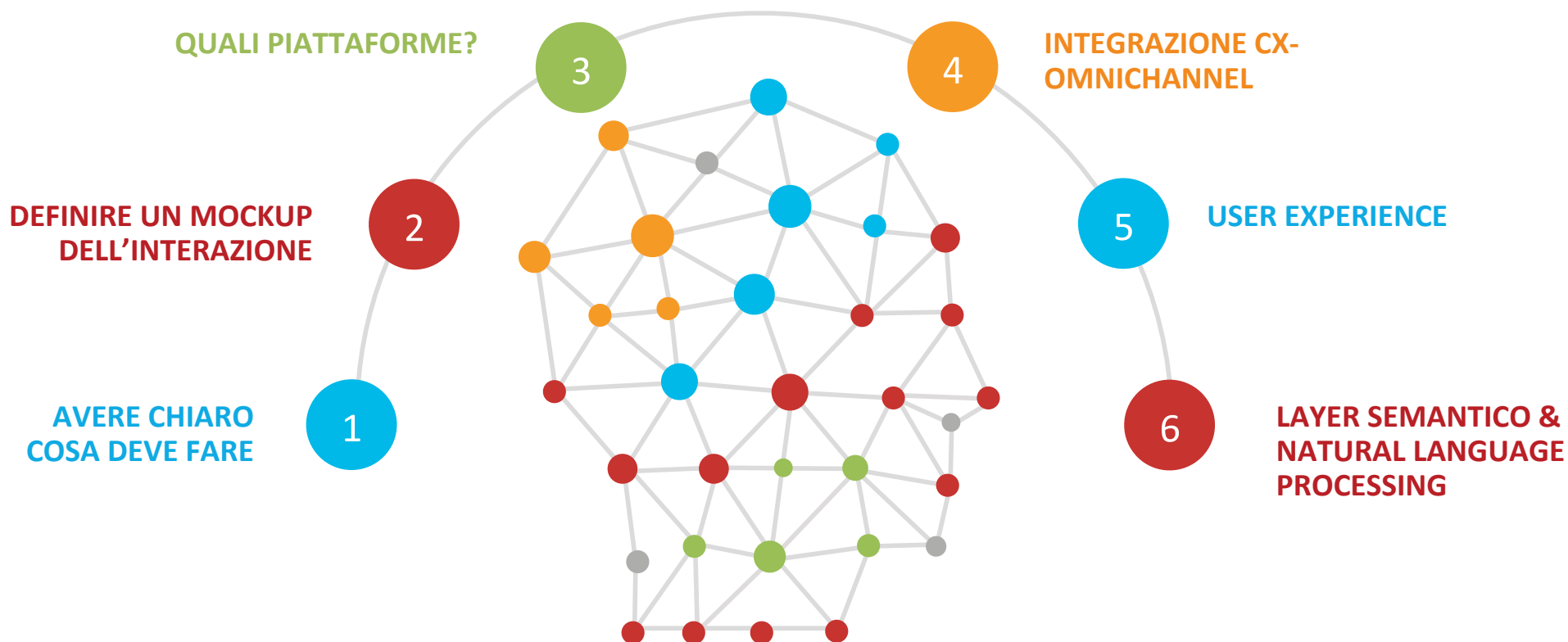


Chatbot: classificazione



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

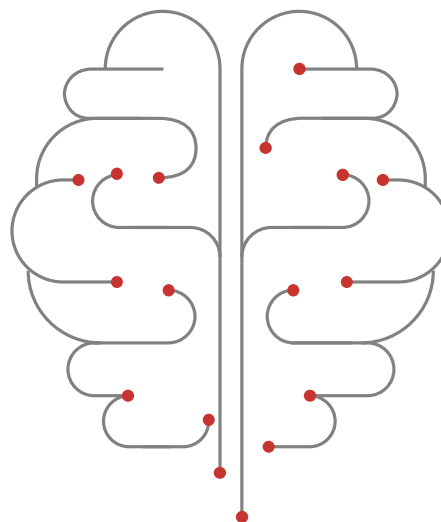
EFFICACIA

Risolvere il problema



SEMPLICITÀ

Gestire processi (complessi) in modo semplice



COMPRESIONE

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

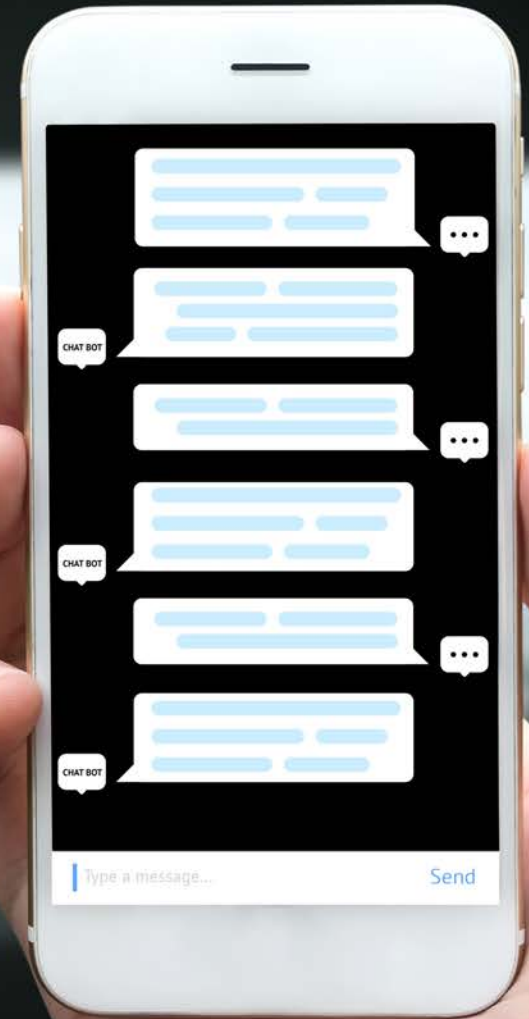
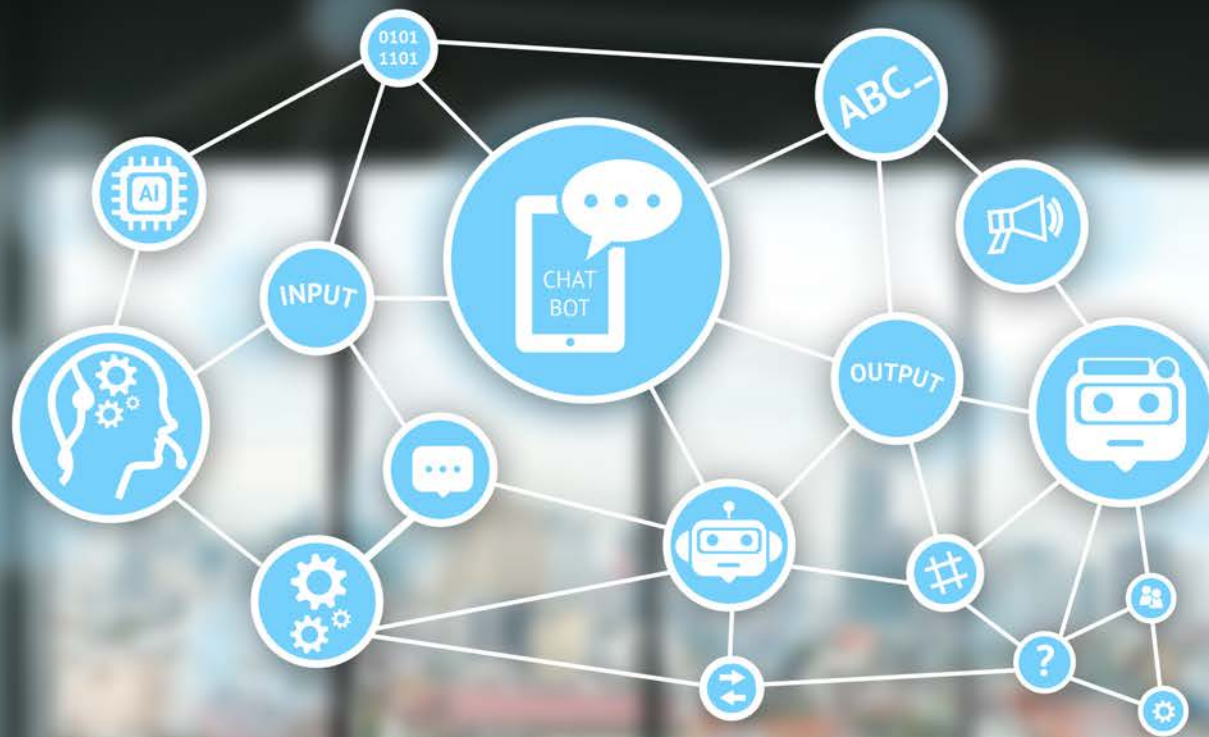
**DEFINIRE UN MOCKUP
DELL'INTERAZIONE**

2



QUALI PIATTAFORME?

3



Chatbot e Digital Customer Journey

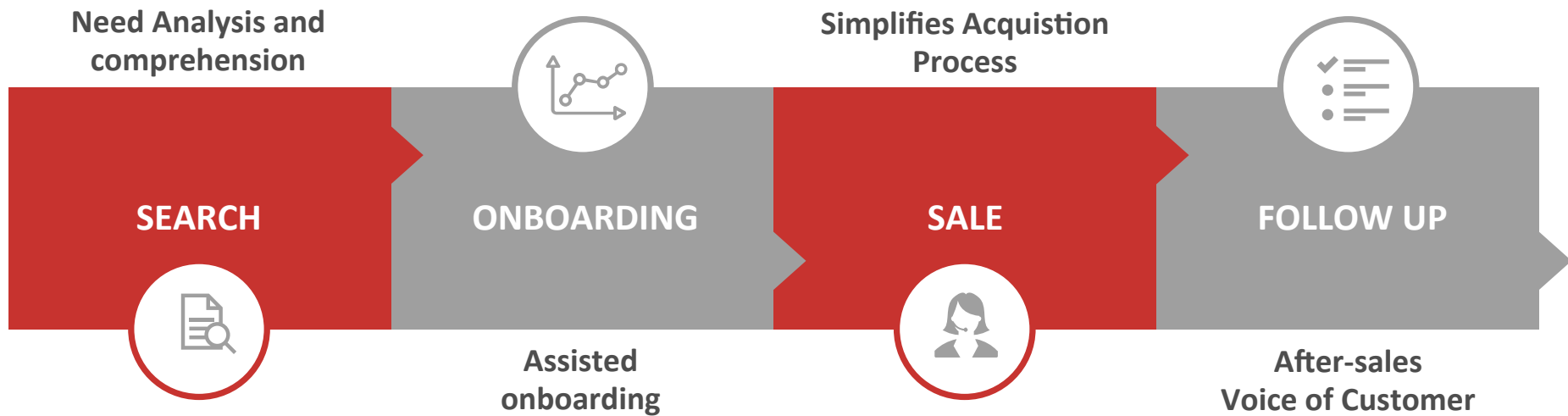
4

INTEGRAZIONE CX-
OMNICHANNEL

Information and choice

Onboarding

Memory & feedback





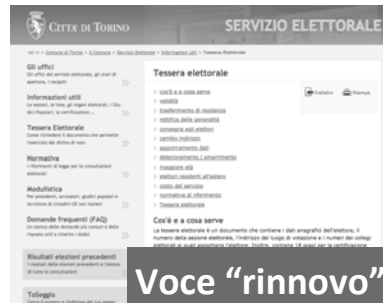
Design

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

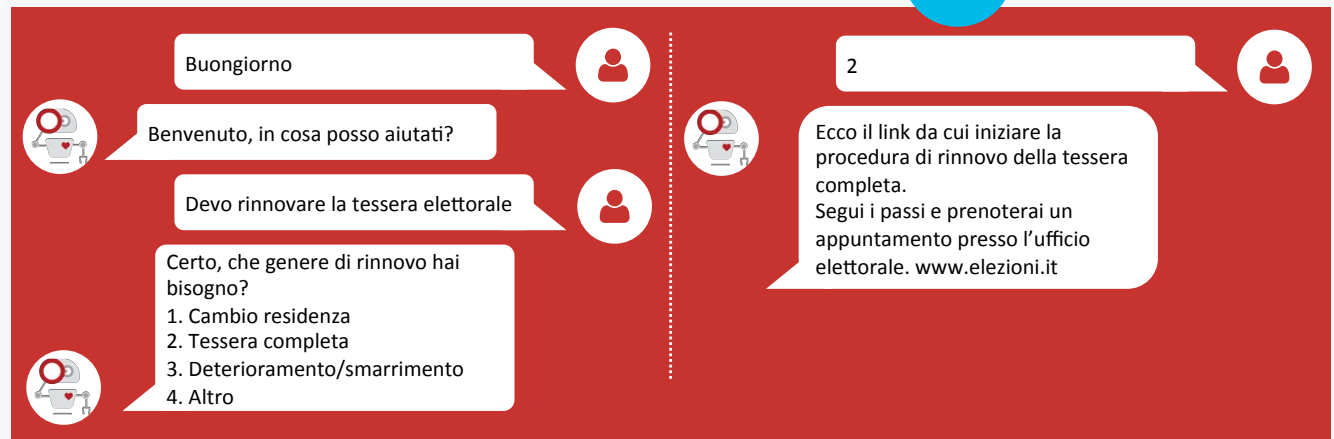
Come cambierebbe con un chatbot?

5

USER EXPERIENCE



1. Chatbot sul sito



2. Identificazione via SMS



3. Dati Anagrafici e codice SMS



4. Prenotazione



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6

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 a

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

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



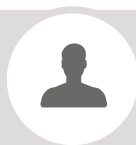
INTELLIGENZA UMANA



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

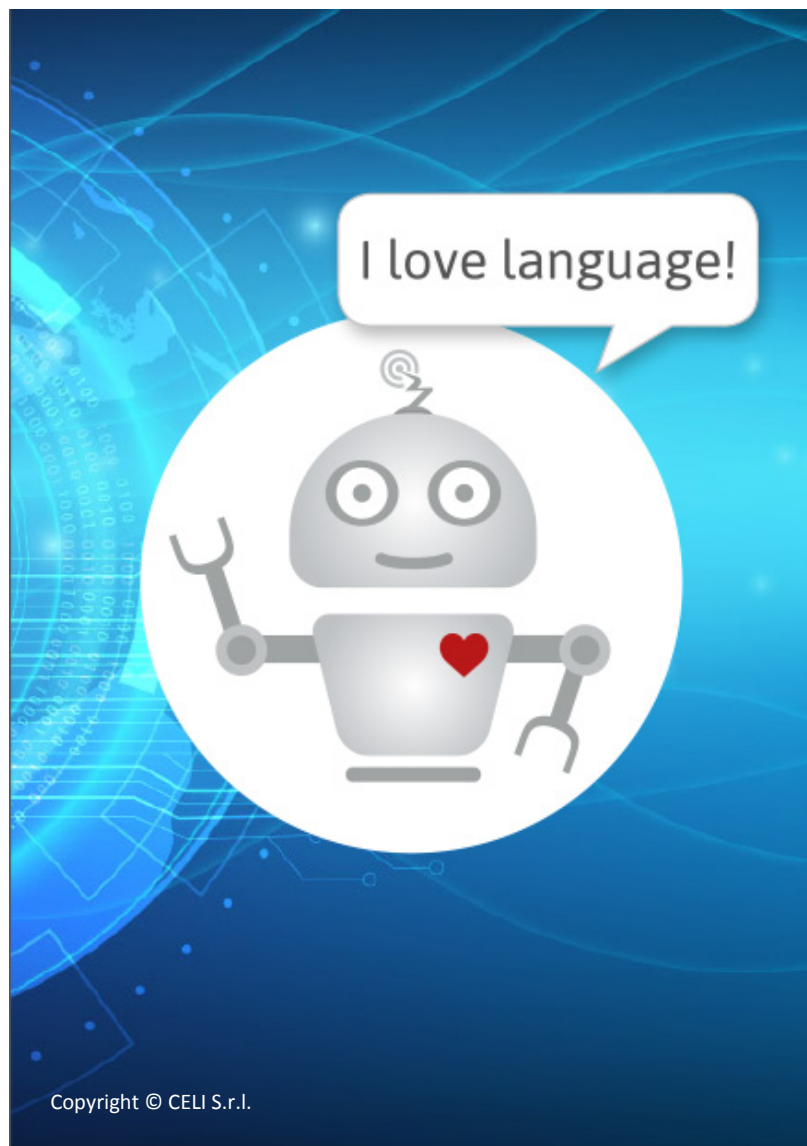
Arricchimento dei cluster con variabili attitudinali e comportamentali derivanti da analisi di dati testuali

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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