

# iCXM: l'intelligenza artificiale e la semantica per conoscere, coinvolgere e soddisfare i clienti

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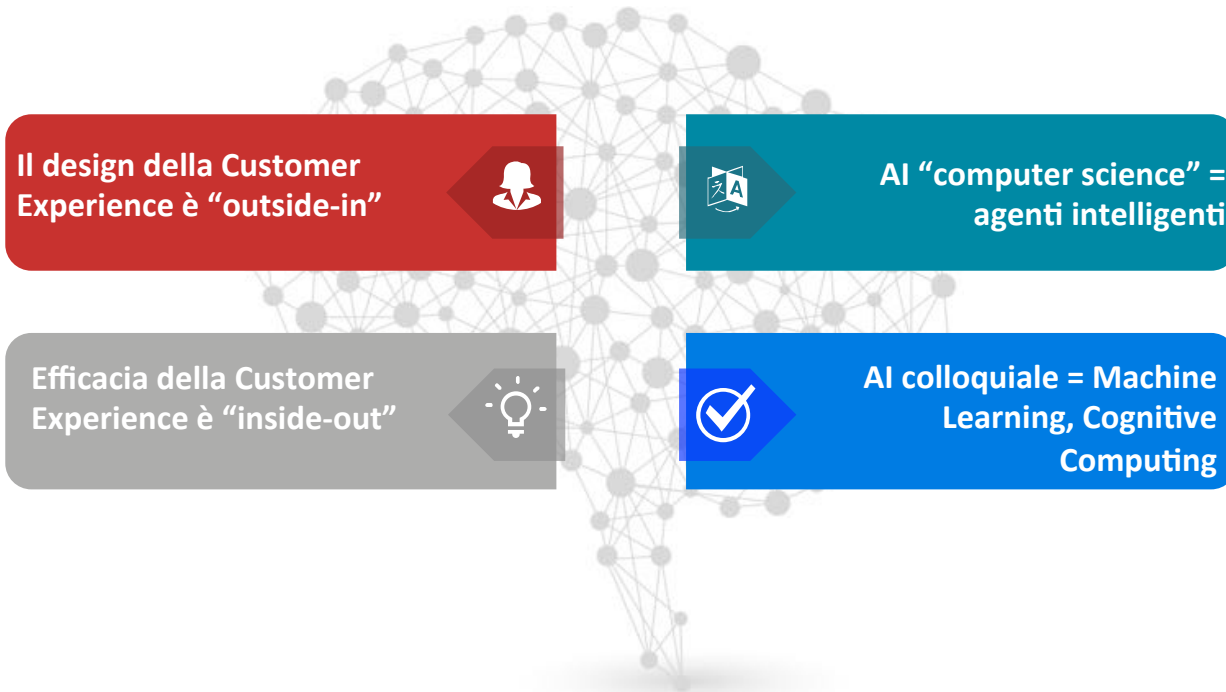
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L'intelligenza artificiale consente di automatizzare processi “**cognitivi**” che prima erano esclusivamente “**umani**”



# CXM & AI: qualche chiarimento



## CX & AI: evoluzione possibile

*The good news is that AI has matured to the point where it's feasible **to design experiences that deliver a good experience while also reducing costs and driving ROI.***  
(Gartner)

Natural Language is the ultimate interface

94,1%\*



\*Accuratezza raggiunta nel **riconoscimento vocale**

Fonte: Accenture



Coinvolgere e soddisfare i clienti con le nuove  
**interfacce conversazionali**

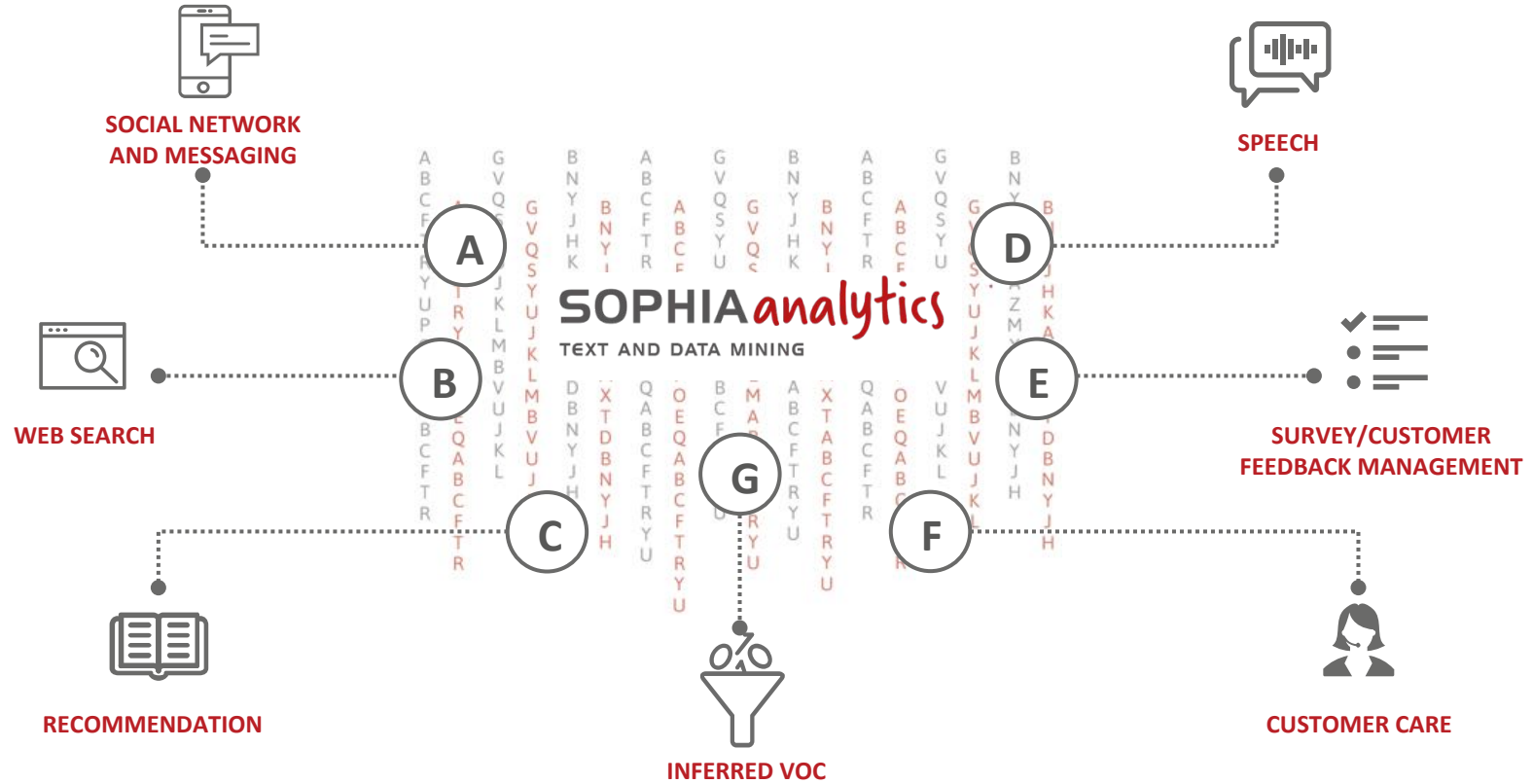
# Perché Speech e Text Analytics



Trying to understand your customer without applying text analysis is like choosing a paint color in the dark. If you want to know what your customer wants, needs, prefers, and expects, then **you need to listen to the Voice of your Customer.**



# Conoscere i clienti



# Come applichiamo l'AI per gli analytics?

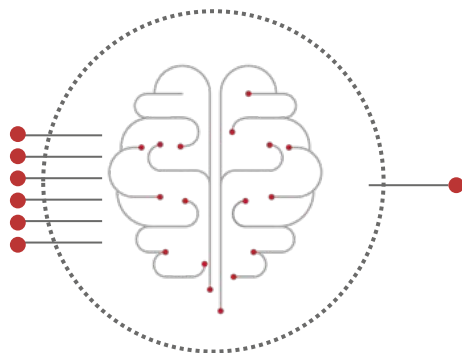
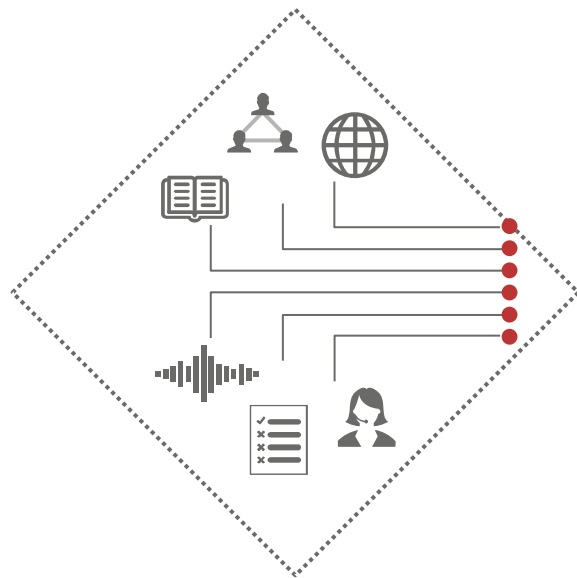
Existing channels



Artificial Intelligence



Results





## SUPPORTO ALLE DECISIONI STRATEGICHE

Attraverso l'integrazione tra Sophia Analytics e NTE (Nuance Transcription Engine) è possibile:

- analizzare la VOC in un unico ambiente
- creare classificazioni azionabili
- analizzare il sentiment

**SOPHIA**analytics  
TEXT AND DATA MINING



## PREVENIRE IL CHURN

Le analisi predittive sui campi note del CRM hanno consentito di:

- classificazione delle interazioni ad uno o più argomenti significativi
- generazione di variabili pertinenti senza supervisione umana.

## TARGETTIZZARE CAMPAGNE DI MARKETING

**SOPHIA**analytics  
TEXT AND DATA MINING

Le analisi su dati testuali transazionali hanno permesso:

- arricchimento dei cluster pre-esistenti con variabili attitudinali e comportamentali
- definizione di personas più precise.



## INDIRIZZARE LO SFORZO REDAZIONALE


- Analisi degli articoli pubblicati sul sito web del cliente
- Individuazione dei principali temi
- Mappatura dei temi su Google Analytics
- Determinazione del valore della raccolta pubblicitaria per brand, prodotto e VIP.




## Social media intelligence

blogmeter

THE SOCIAL MEDIA INTELLIGENCE COMPANY



**The “Human Factor”  
Machine Learning per Text & Speech  
Analytics: quali aspetti richiedono ancora  
l'intelligenza umana?**

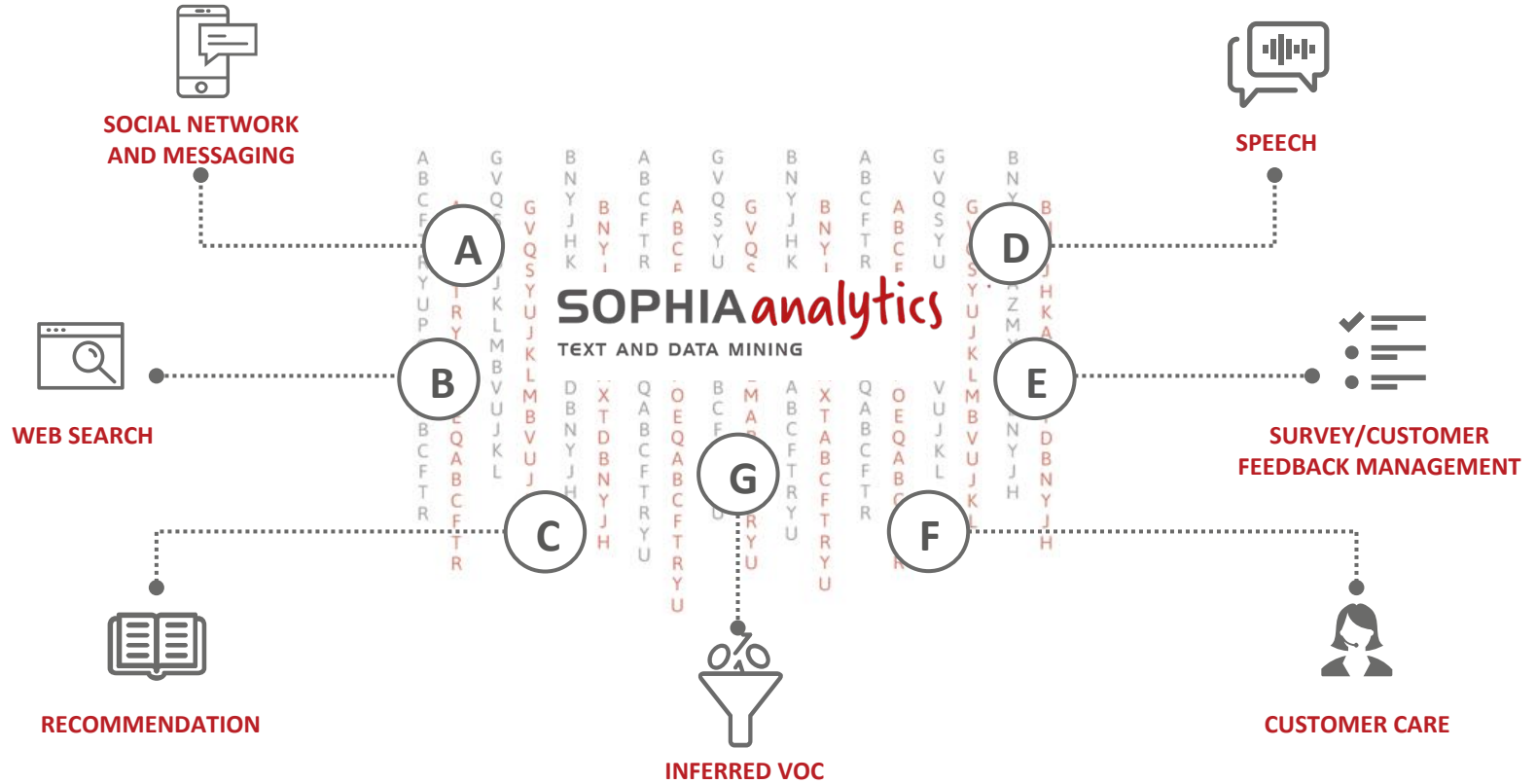


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# Sophia Analytics



# Sophia Analytics: i punti di forza



## AUTONOMIA E SEMPLICITÀ

Consente il caricamento dei dati (manuale o automatico) in modo facile ed intuitivo, attraverso un processo guidato



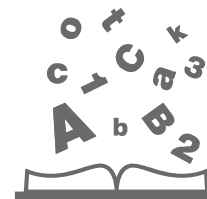
## AUTOAPPRENDIMENTO

Apprende dalle parole del cliente: individua temi predominanti grazie ad algoritmi di Intelligenza Artificiale e Deep Learning



## VELOCITÀ DI ESECUZIONE

Fornisce i risultati dell'analisi rapidamente. Consente di aggiornare velocemente le tassonomie e categorie



## RISORSE LINGUISTICHE

Sfrutta risorse linguistiche specifiche per l'italiano. E' inoltre disponibile per più di 15 lingue

# Il processo di analisi



## DATI

CARICAMENTO

CONFIGURAZIONE

RISORSE

## INTELLIGENZA ARTIFICIALE

### COMPrensione DEL DOMINIO

MACHINE LEARNING

APPRENDIMENTO CATEGORIE

CREAZIONE REGOLE DI CATEGORIZZAZIONE

### COMPrensione DEL LINGUAGGIO

CORREZIONE ERRORI

TEXT MINING

ESTRAZIONE CONCETTI E RELAZIONI

SENTIMENT ANALYSIS

## INTELLIGENZA UMANA

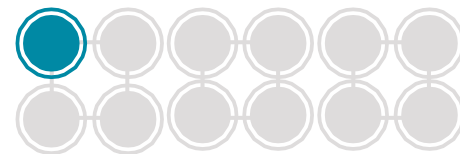
REVISIONE REGOLE

VALIDAZIONE

ANALISI



# Normalization



## ORIGINAL TEXT

Only a fool **lerns** from his **ownn** mistakes. The wise man learns from the **mistaekes** of others.



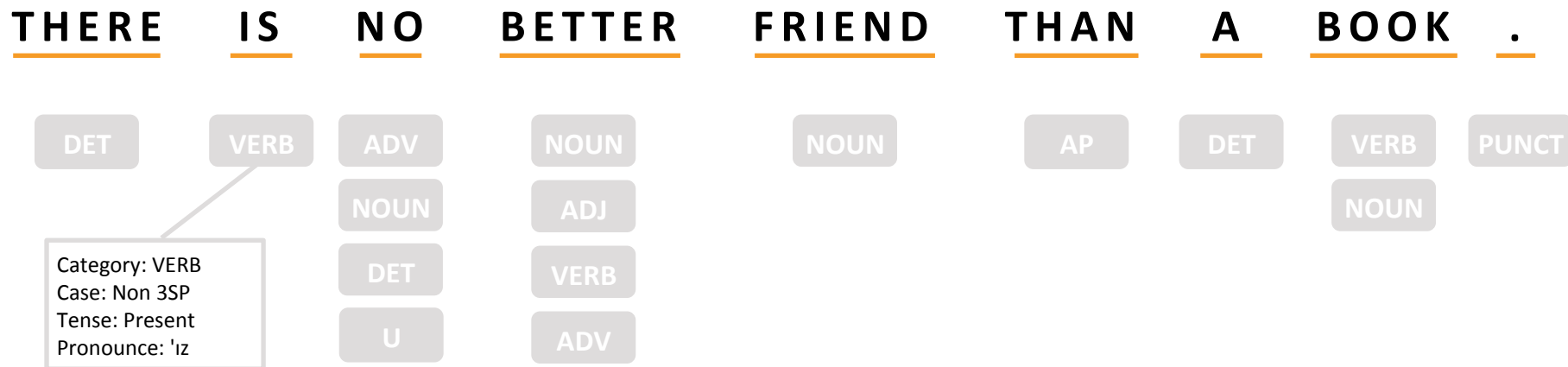
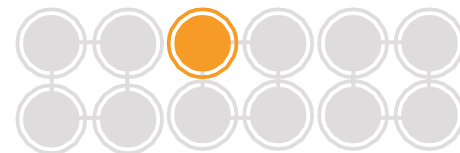
## CORRECTED TEXT

Only a fool **learns** from his **own** mistakes. The wise man learns from the **mistakes** of others.

Process of input text transformation in order to make it more consistent and to allow, or facilitate, all other NLP analyses to be carried out

- removes format inconsistencies
- manages text encoding
- removes lower and upper case differences
- normalizes spelling variants, i.e. considers different word forms as one single term: "don't" = "do not"

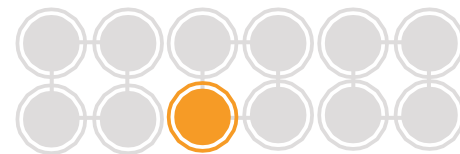
# Morphological Analysis



Identification and description of morphemes (units of meaning), i.e. assigning grammatical information to words: category, gender, case, tense, etc., identifying word segments: prefixes, suffixes, lemmas.

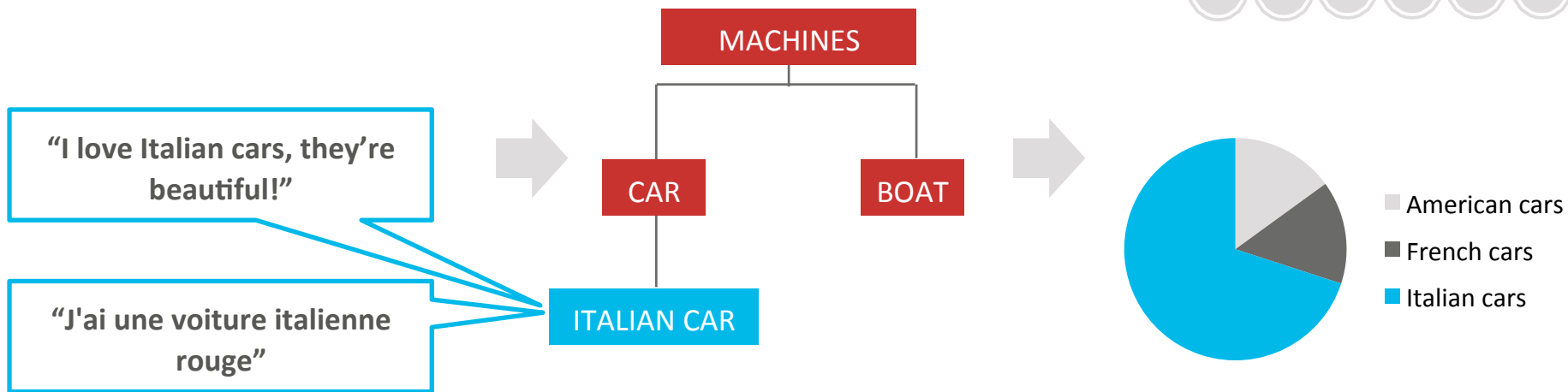
The morphological analyzer returns all potential interpretations for each word. It is composed of a morpheme database and algorithms for morpheme composition. It allows not only PoS tagging but also lemmatization and word de-composition essential in Germanic languages. The morphological databases also contain information about pronunciation.

# Disambiguation



The disambiguation component has the role of analyzing sentence context. It chooses, for each word, the only correct interpretation, and consequently, also the corresponding additional information about pronunciation and grammar.

# Automatic Classification

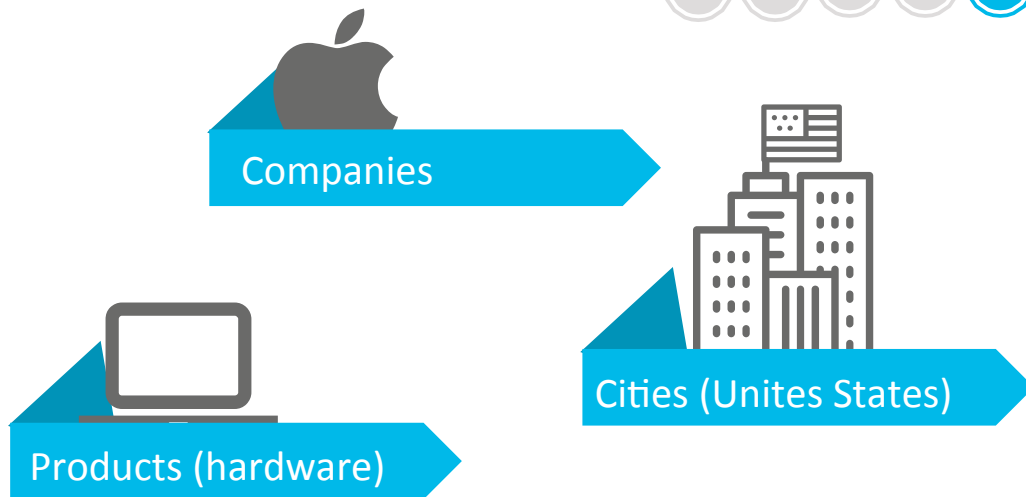


Assigning text portions to one or more predefined classes or categories. Content organization into macro-concepts. Automatic classification supports top-down analysis approach.

Classification can be based on generic, domain-dependent or client-specific taxonomy.

## Named Entities

“I love Apple products. My desk right now has on it my MacBook Pro and a beautiful postcard of Cupertino”

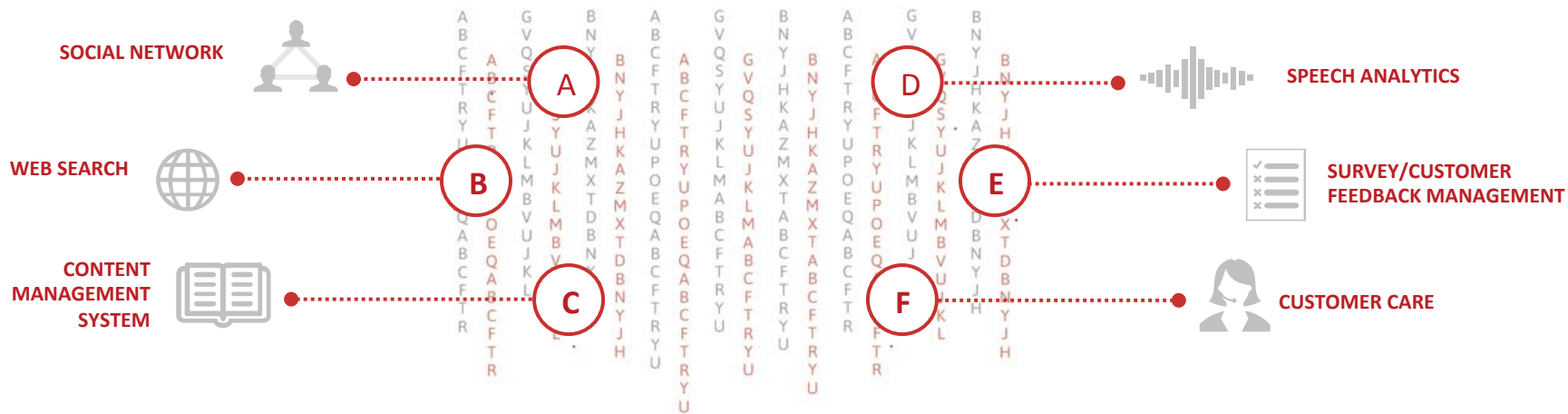
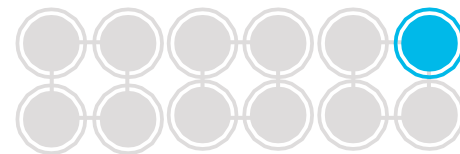


Identification of names and assigning them into predefined categories such as people, places, organizations, quantities, expression of time.

NER is of key importance for opinion mining.

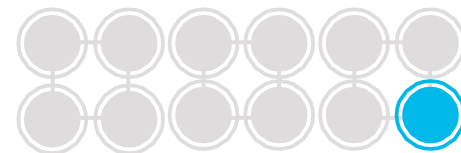


# Opinion mining and Sentiment analysis



Sentiment Analysis consists in the process of determining the attitude of the customer (or, in general: of the speaker/writer) with respect to some topic. The analysis of affective states and subjective information is widely applied to voice of the customer materials (e.g. reviews, survey responses, online and social media interactions, etc...) for a wide range of applications.

# Semantic Clustering



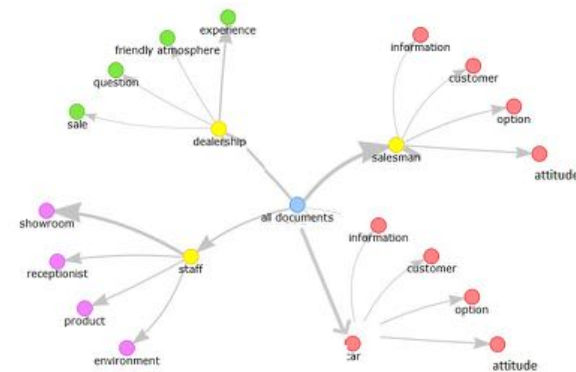
## Data



## Keywords



## Clusters



Semantic grouping of information. Consists in partitioning keyword sets into semantically similar groups or clusters. Each cluster reveals a different concept. It is a bottom-up analysis approach, particularly useful to discover new and unpredicted phenomena.

# Bilanciamento

## Intelligenza Artificiale



- DISPONIBILITA' DATI ANNOTATI
- ANALISI DATI ESPLORATIVA
- INDIPENDENZA DALLA LINGUA
- SCALABILITA'
- UNSUPERVISED CLUSTERING

## Intelligenza Umana



- COMPRESIONE DEL DOMIIO
- ANALISI DEL SENTIMENT
- DISAMBIGUAZIONE
- SCELTE ALGORITMICHE
- FINE TUNING
- RISORSE ELABORATIVE

 **DA INTERPRETARE!!!**

That's all folks!



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