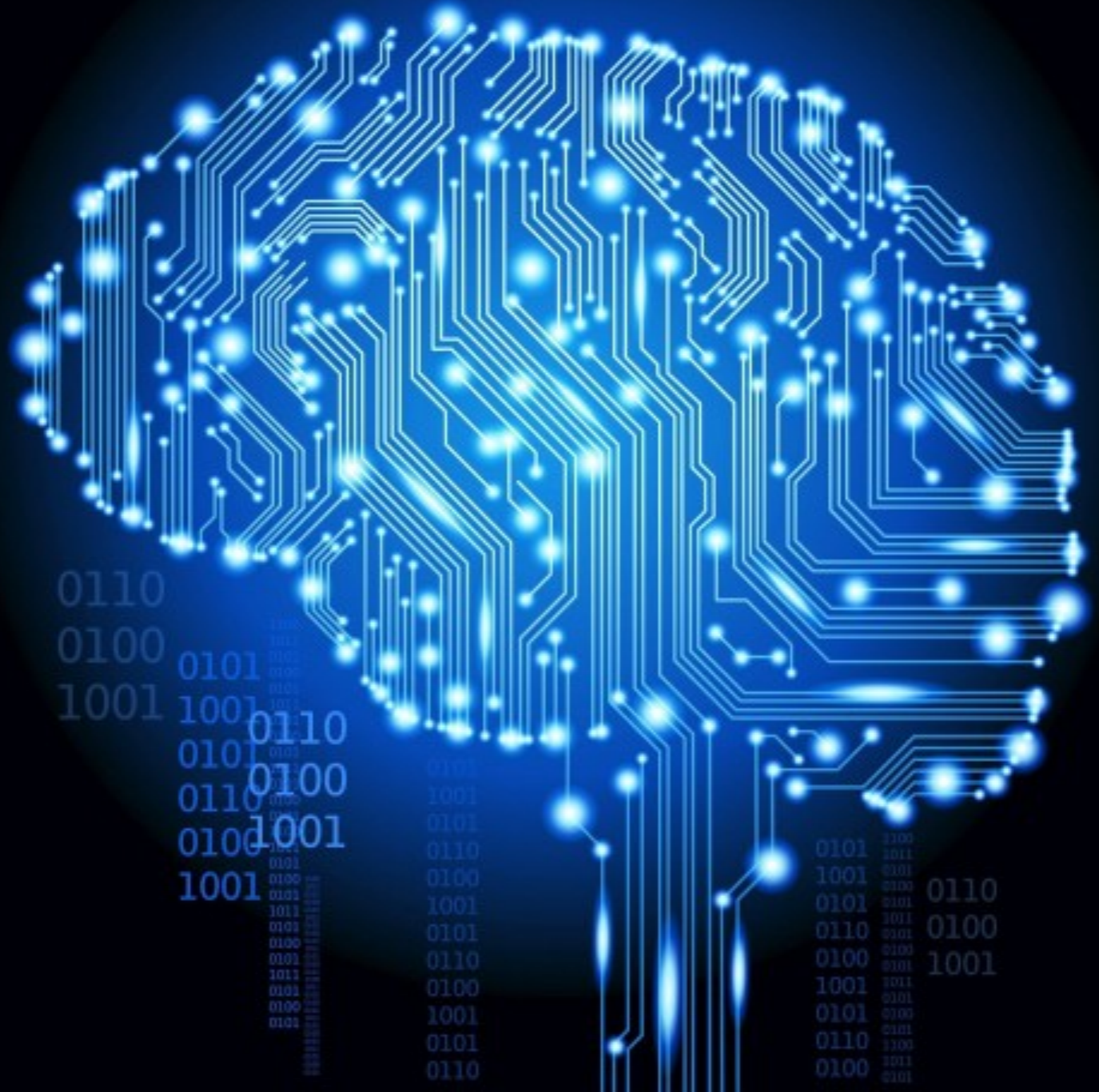


# 3 Strategies *for* Business Innovation *with* Sentiment Analysis (ML)

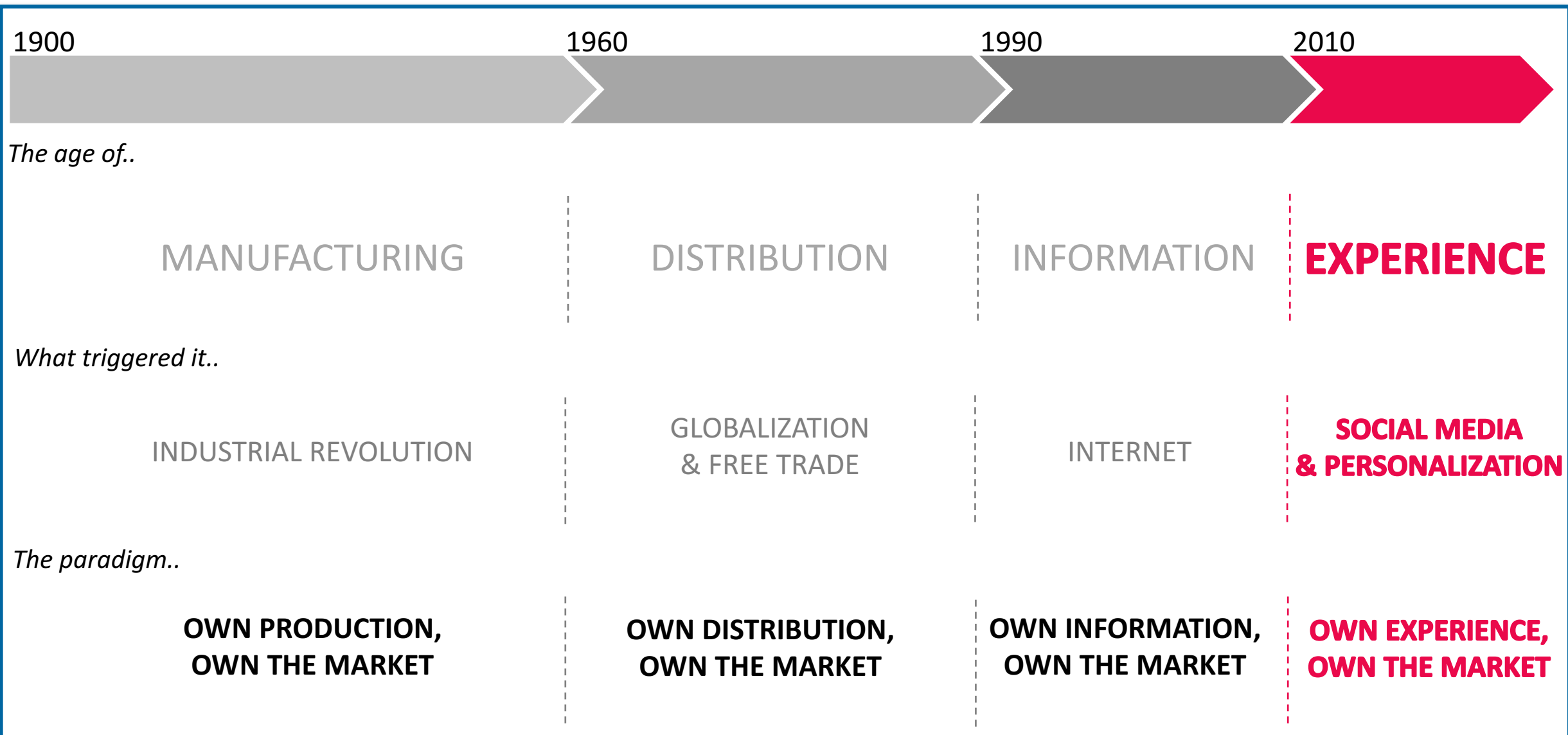
Cloud Days 2018, Luzern

Rahul Ramachandran, PMP®, MBA  
Amancio Bouza, PhD, ipt, Innovation Process Technology AG

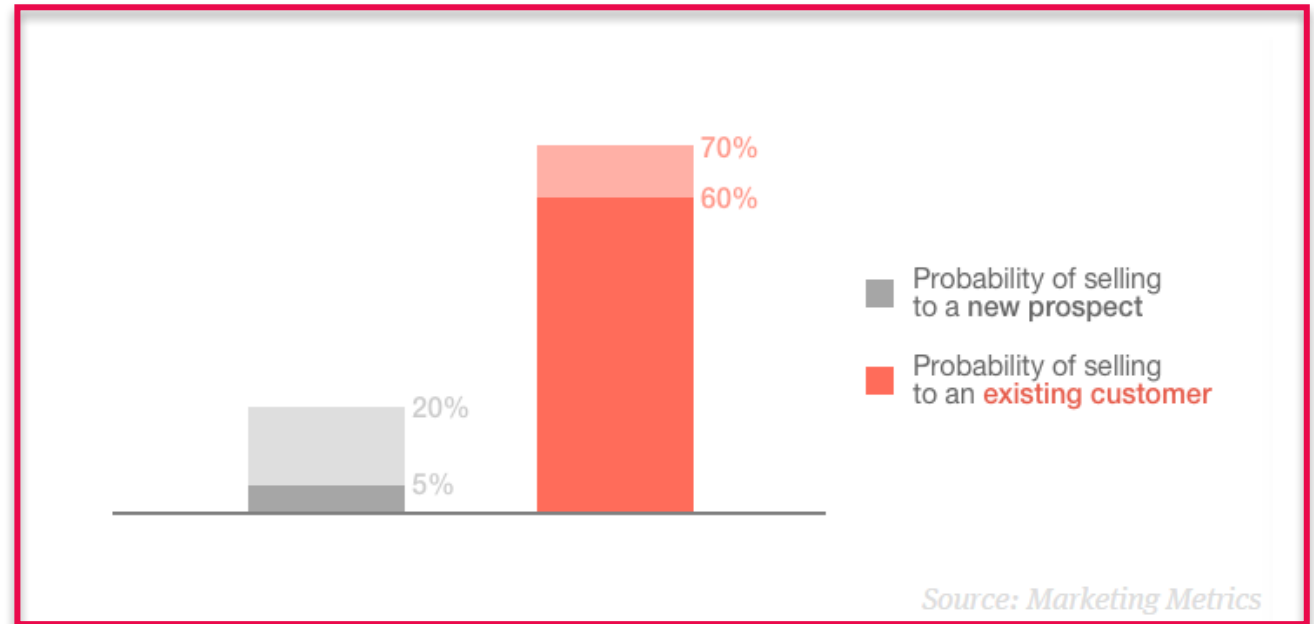
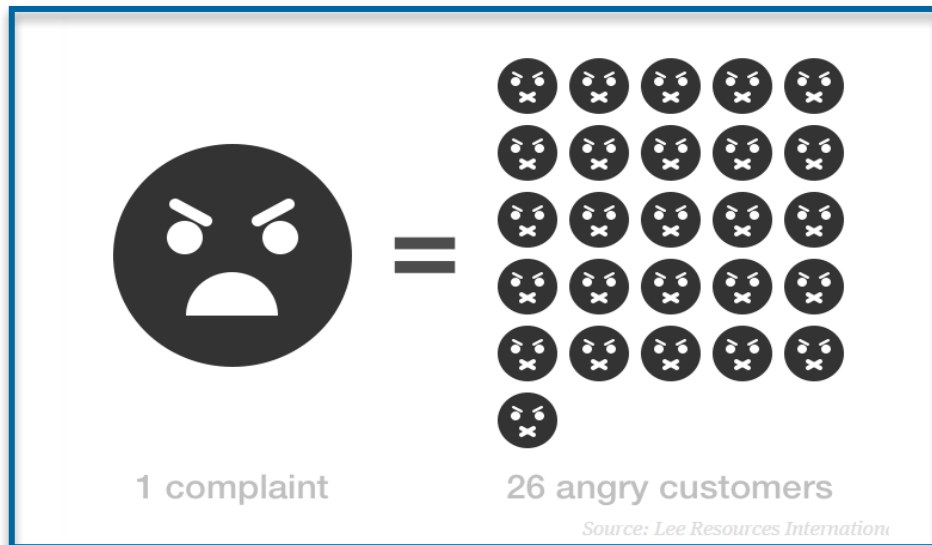
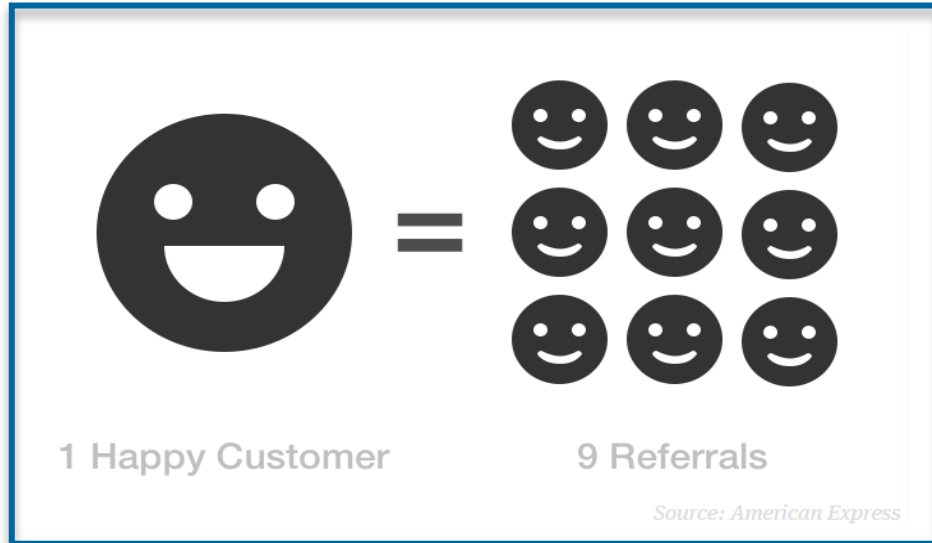


**The Challenge..**

# There has been a paradigm shift across industries

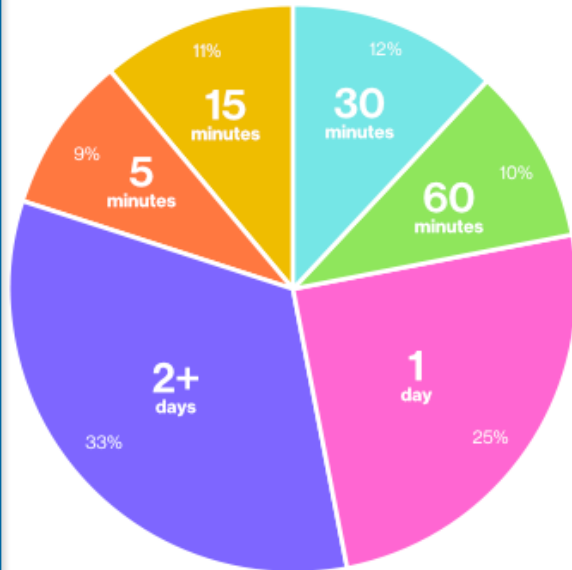


# This is no rocket science – Happy customers return and refer..



# ..and what are today's customers expecting

## Speedy contact and response

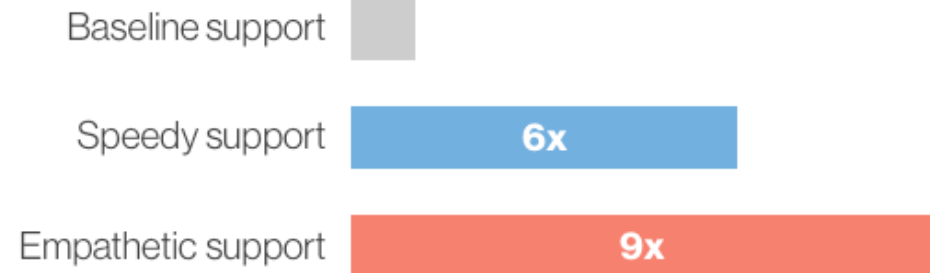


Social media users expect to get a response from customer support within:

5 minutes	9%
15 minutes	11%
30 minutes	12%
60 minutes	10%
The same day	25%
A few days or so	33%

Source: The Social Habit

## ..but speed alone doesn't cut it



Source: Gallup

# So we want to respond, but..

---

**“Customer Experience”**  
is EVERYTHING



**What is the biggest challenge for  
businesses?**



# So we want to respond, but..

---

**“Customer Experience”**  
is EVERYTHING



**Too many inputs**





# ..and too many platforms to read from

---

**“Customer Experience”**  
is EVERYTHING

**Need to  
leverage**

**Too many feedback  
platforms**



**BUT  
HOW?**





**The Opportunity..**

# In every challenge lies an OPPORTUNITY

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*Business Potential*

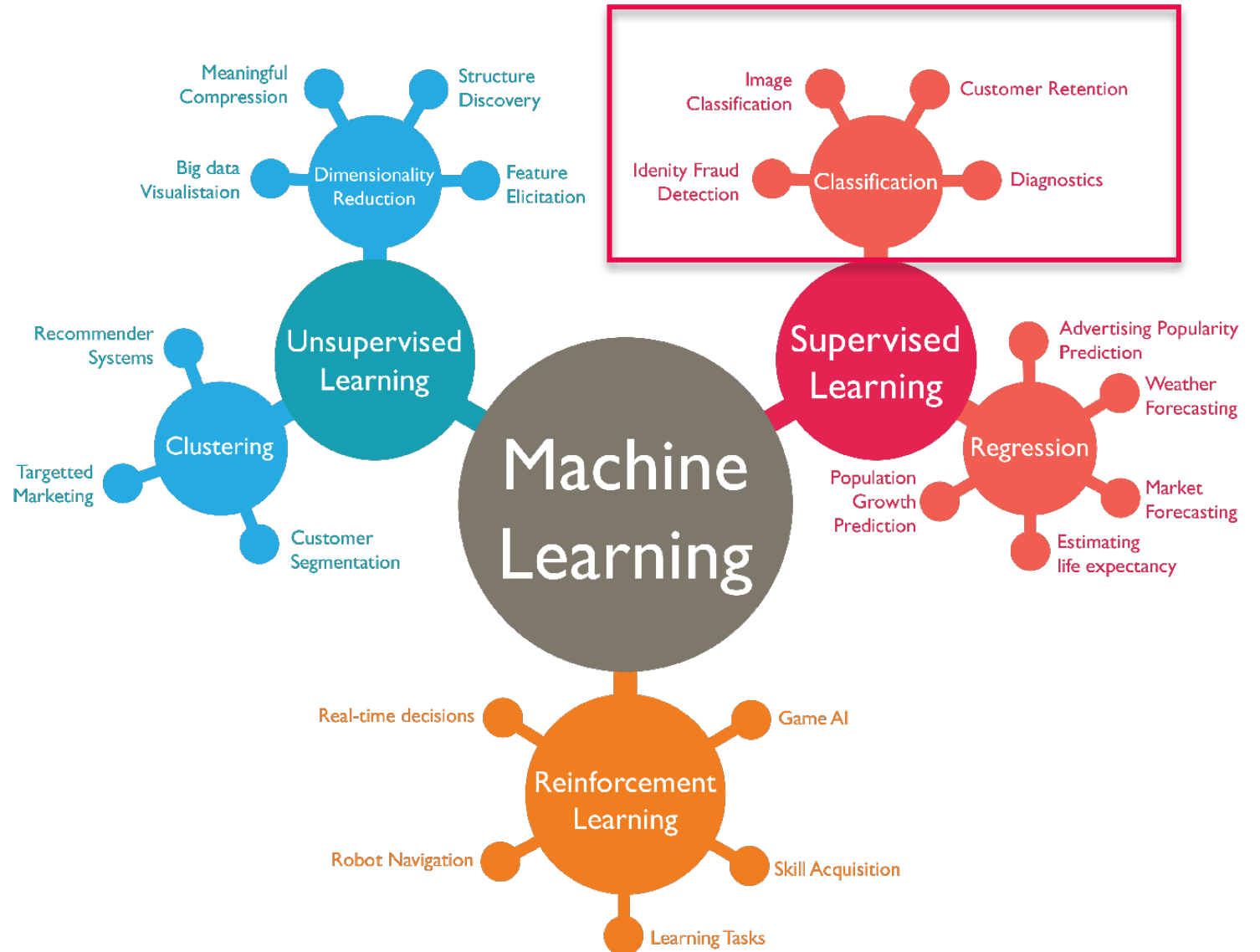
**Customer Retention**

**Product Development**

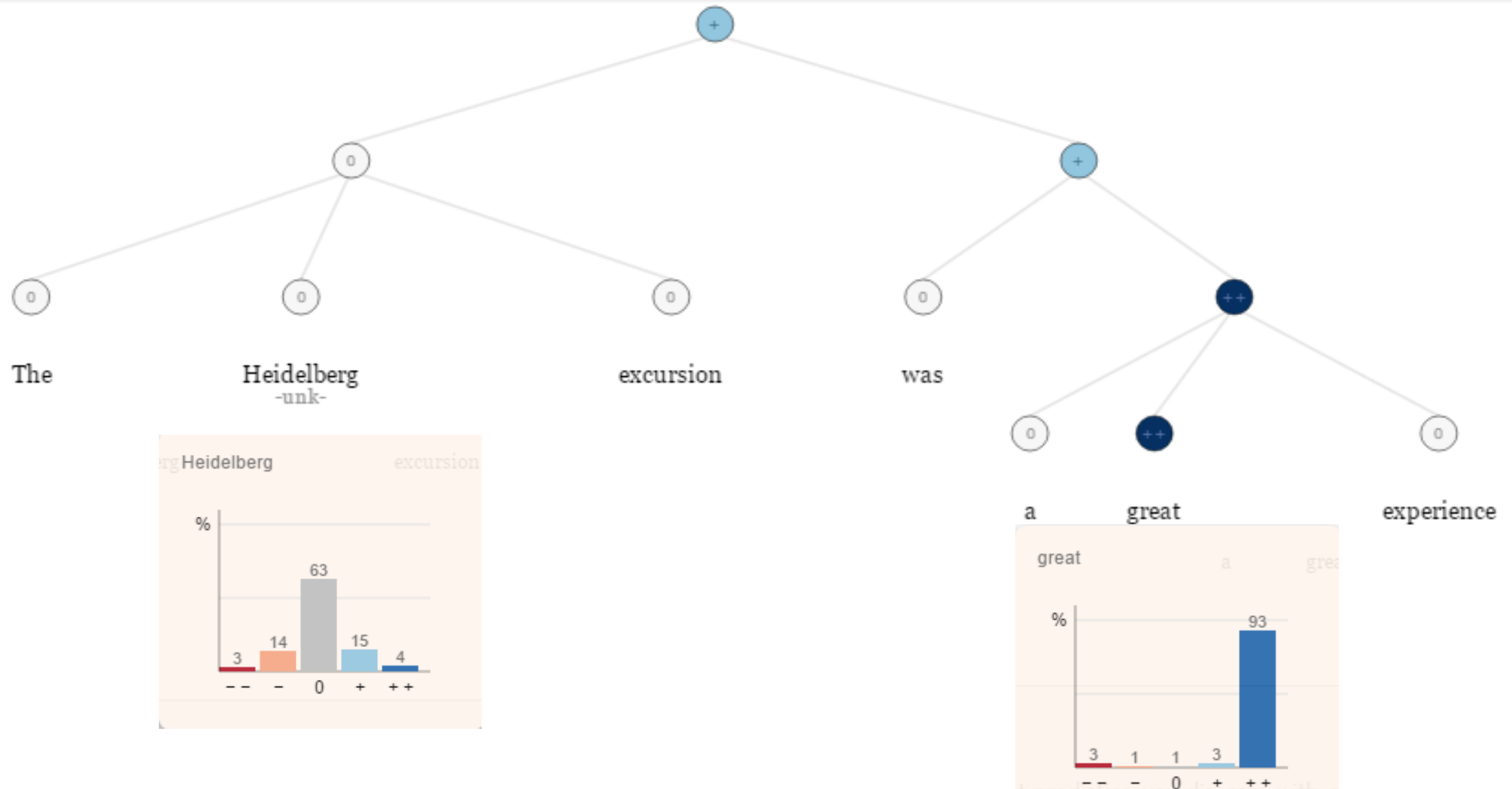
**Competition Analysis**

# To harness the potential – BIG Data & Machine Learning (ML)

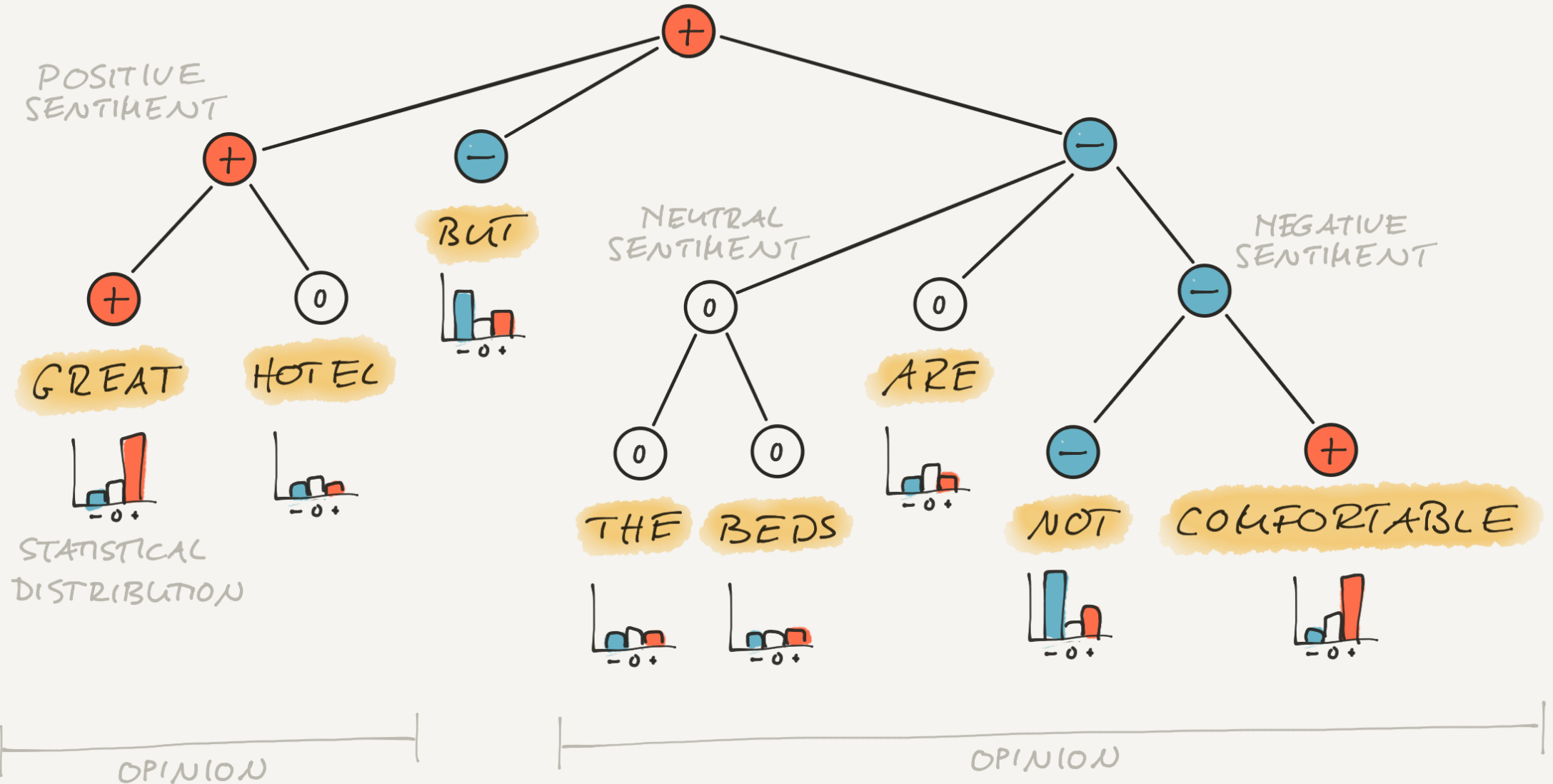
- **Machine learning** is the subfield of computer science that gives computers the ability to learn without being explicitly programmed (Arthur Samuel, 1959). ...
- **Machine learning** is closely related to (and often overlaps with) computational statistics, which also focuses in prediction-making through the use of computers.



# Machines are now able to process natural human language and also derive the human sentiment within



# Machines are now able to process natural human language and also derive the human sentiment within



# Natural Language Processing (NLP) is very a HOT topic

## MACHINE LEARNING in 2017

One facet of machine learning receiving ample attention is natural language processing (NLP), a technology used to parse through audio- and print-based communications to derive insights into consumer intent. NLP will be especially important in marketing, as it can be leveraged to track user sentiment on social media and deliver more targeted advertisements based on voice search queries.

### TREND ATTRIBUTE KEY:

Very Low Low Medium High Very High

#### MATURITY



#### AMPLITUDE



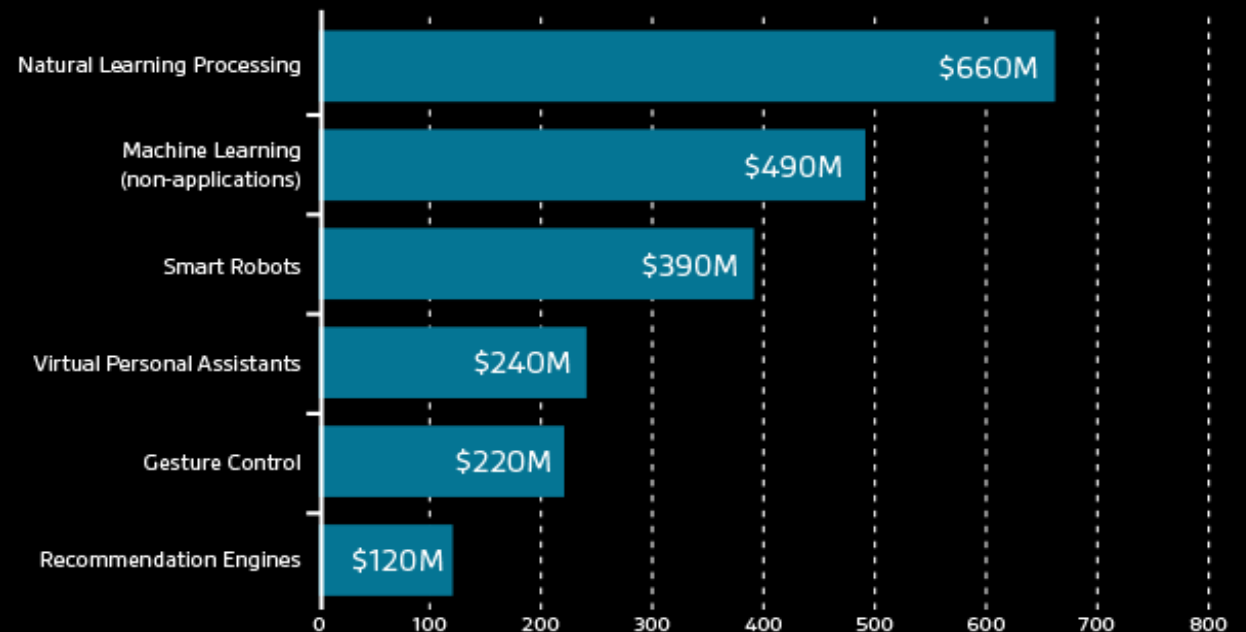
#### VELOCITY



#### IMPACT

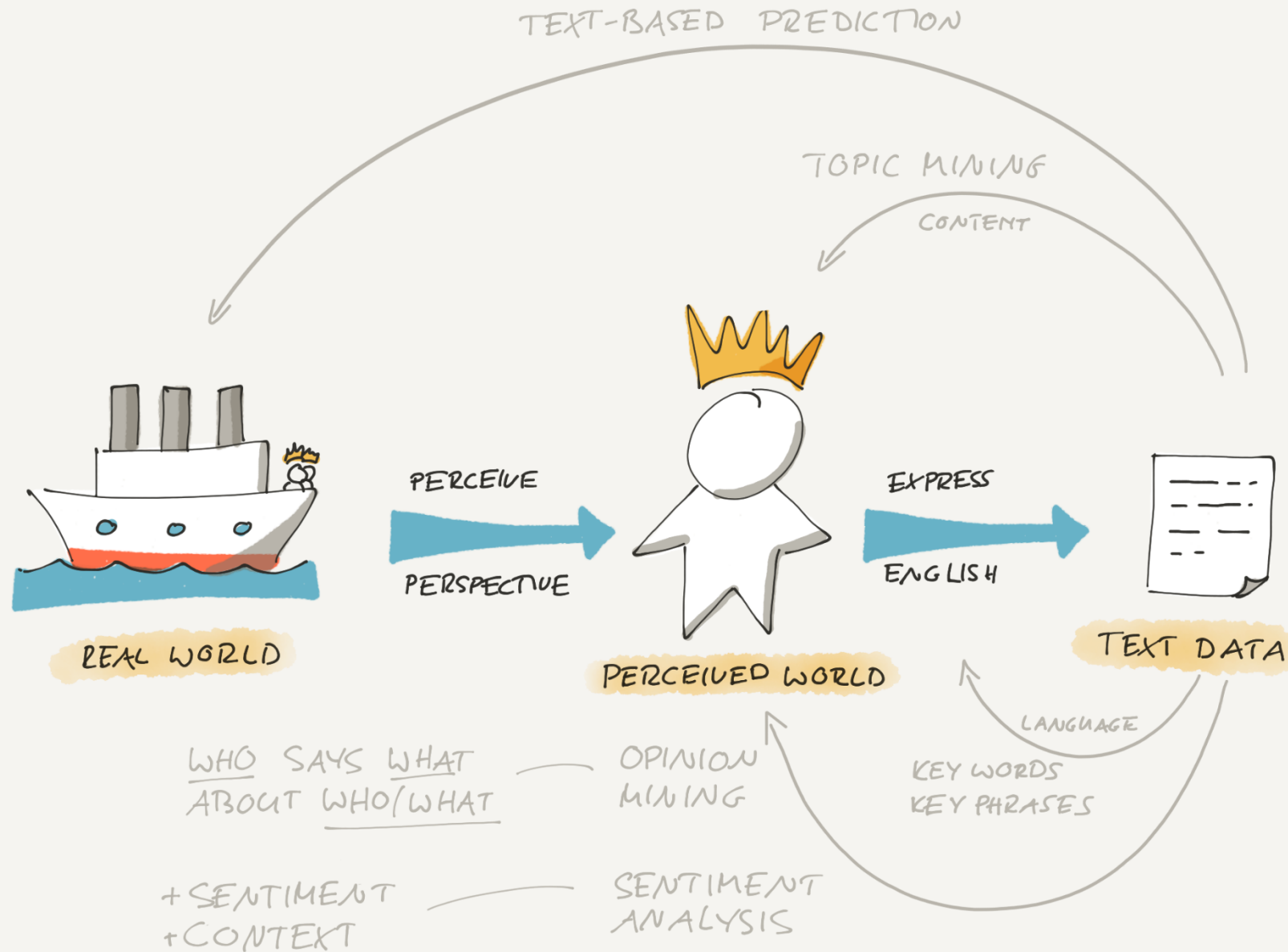


## VC FUNDING IN MACHINE LEARNING/AI INDUSTRY

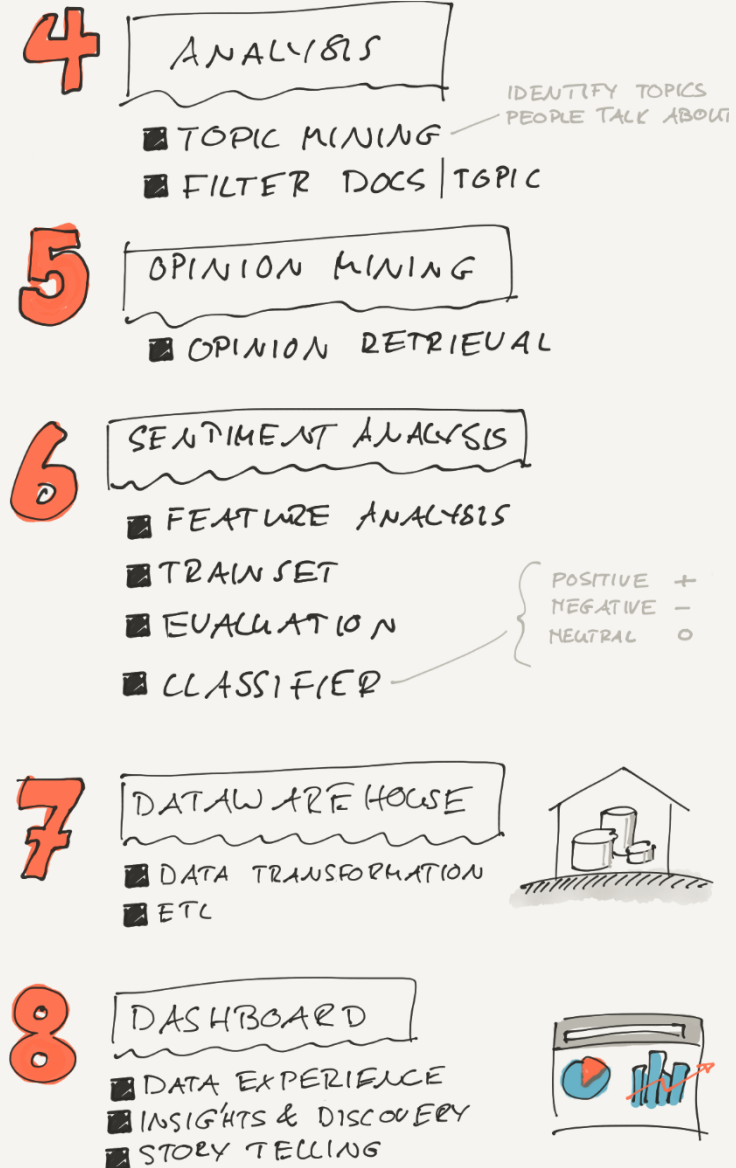
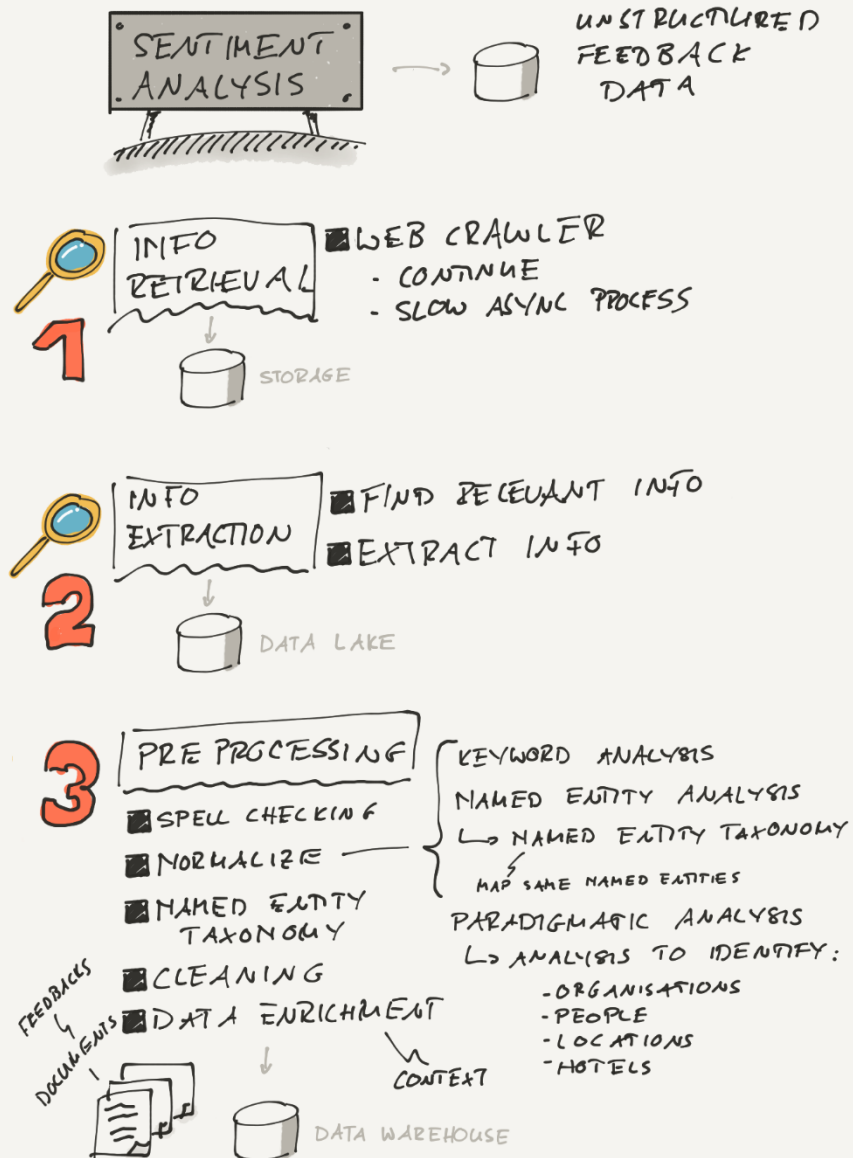




# So how did we approach it..



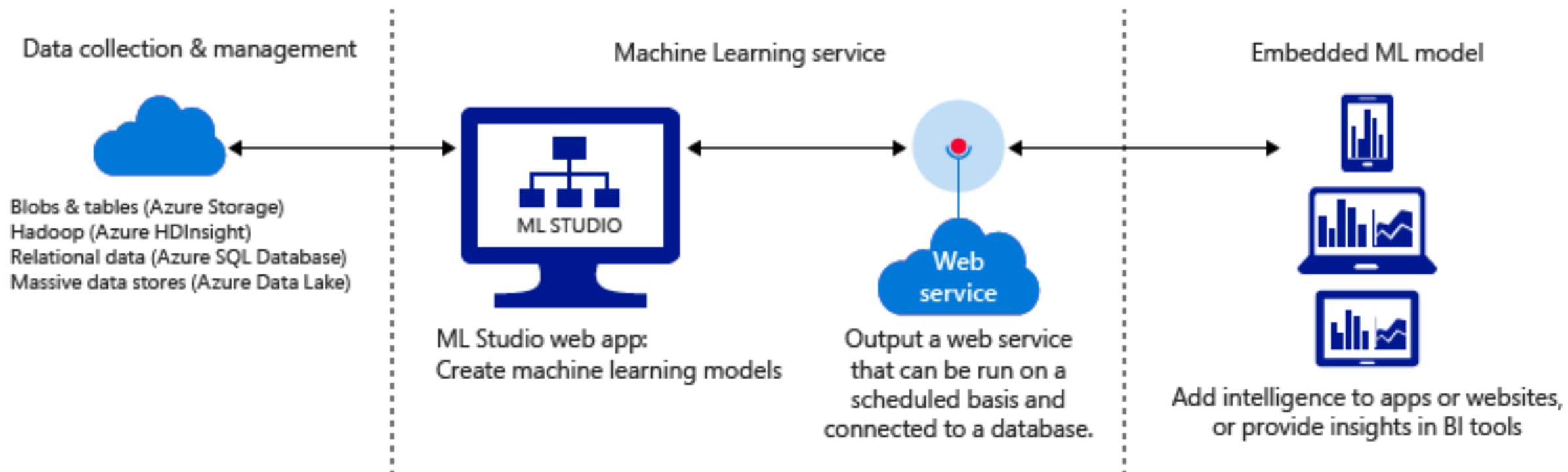
# So how did we approach it..



# ..using Microsoft's Azure ML and Cognitive Services

## Azure Machine Learning: Basic workflow

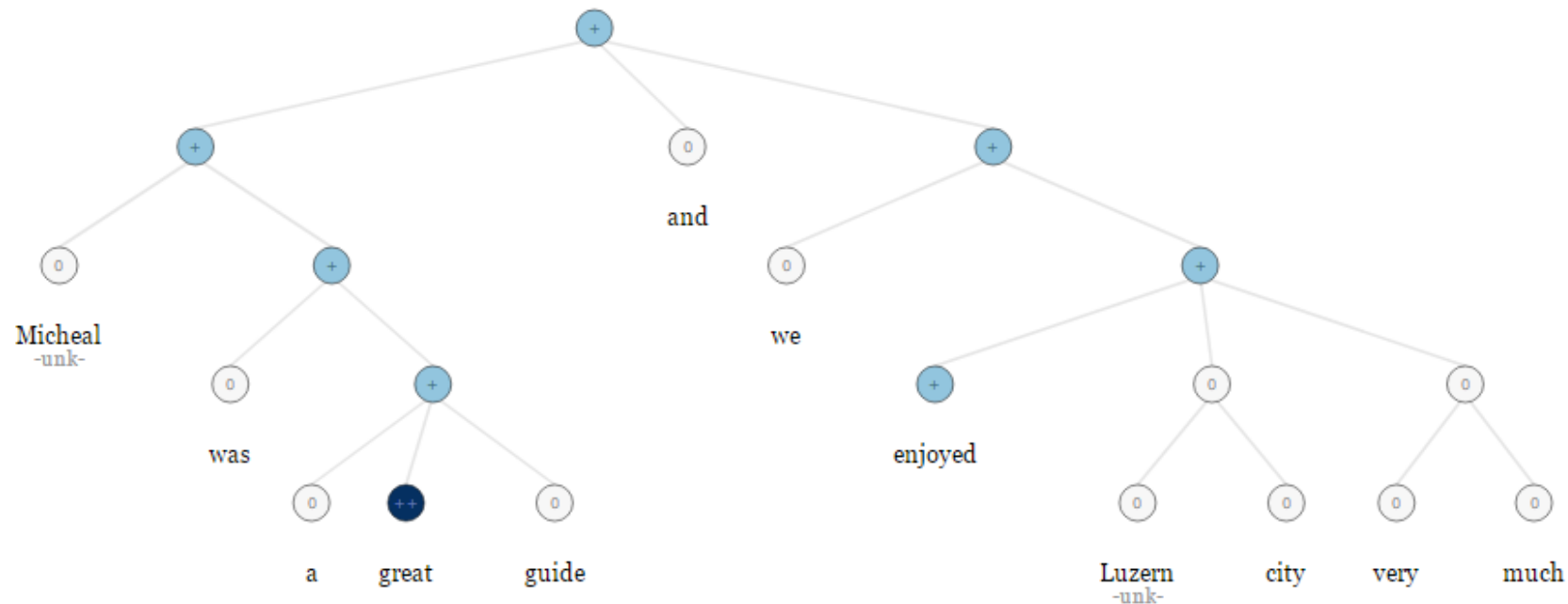
**Build models from data and operationalize a machine learning solution**



**Wrapping up – What we achieved..**

# A detailed analysis of our customer feedback

Input: *"Micheal was a great guide and we enjoyed Luzern city very much"*



Sentiment: **Positive**

Entity: **Michael (Person)**

Entity: **Luzern (Location)**

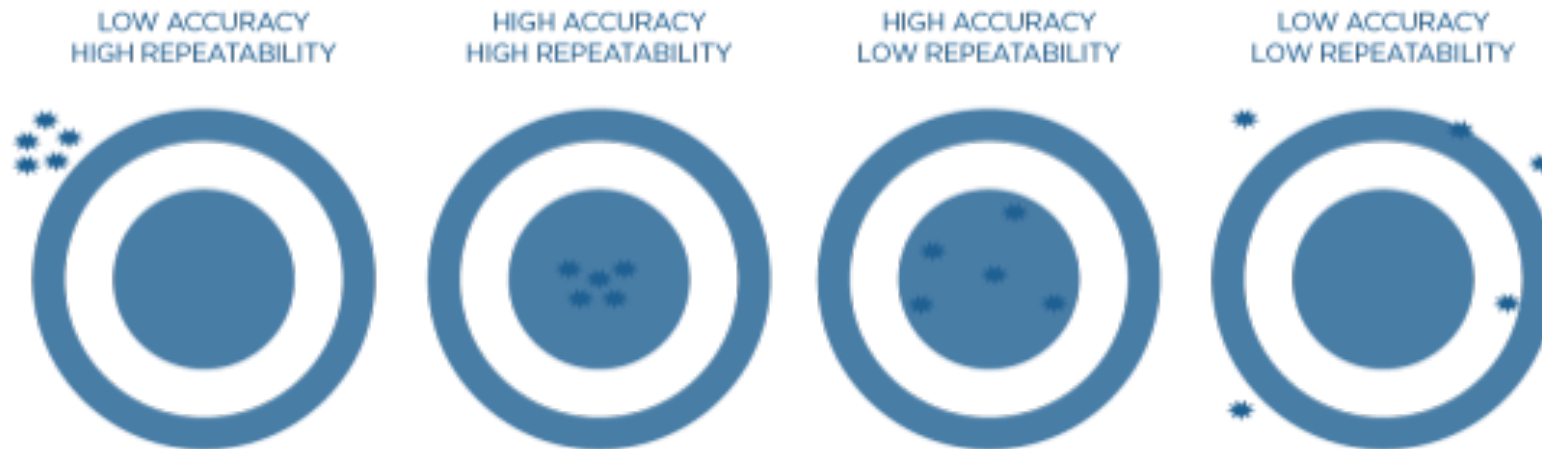
# In our initial POC, we received a high accuracy

---

**79%** accuracy

**75%** precision

**73%** recall





# “Word cloud” on which location are being talked about



## *Enables business to:*

- Quickly focus on the “most” talked locations
- Setup effective communication to resolve most issues
- React **FAST**
- Incorporate feedback to Product Development
- Understand what your market peers are doing right

# Contact

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famous for integration