



**W.UP**

# ***AI IN BANKING***

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# BUDAPEST.AI

ENABLING PEOPLE TO APPLY ARTIFICIAL INTELLIGENCE  
LIKE US FOR AI RELATED NEWS  
UPDATES ON FUTURE HACKATHONS EXCITING COURSES & OPPORTUNITIES  
TO MEET STARTUPS, RESEARCHERS & ENTERPRISES





# THE HYPE

Artificial Intelligence was the buzzword of the year in 2016

- \* High expectations
- \* Media hype - let's not add oil to the fire

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From the Magazine

## ELON MUSK'S BILLION-DOLLAR CRUSADE TO STOP THE A.I. APOCALYPSE

Elon Musk is famous for his futuristic gambles, but Silicon Valley's latest rush to embrace artificial intelligence scares him. And he thinks you should be frightened too. Inside his efforts to influence the rapidly advancing field and its proponents, and to save humanity from machine-learning overlords.

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ARTIFICIAL INTELLIGENCE  
IS...

“The general term to describe how machines can mimic human capabilities.”



HOWEVER “NO MATCH FOR NATURAL STUPIDITY”









# AGENDA

TRENDS AND MARKET

COMPETITIVE LANDSCAPE

WHERE AI IS CHANGING BANKING

USE CASES

PREDICTIONS FOR THE FUTURE

Q&A





# PREDICTIONS

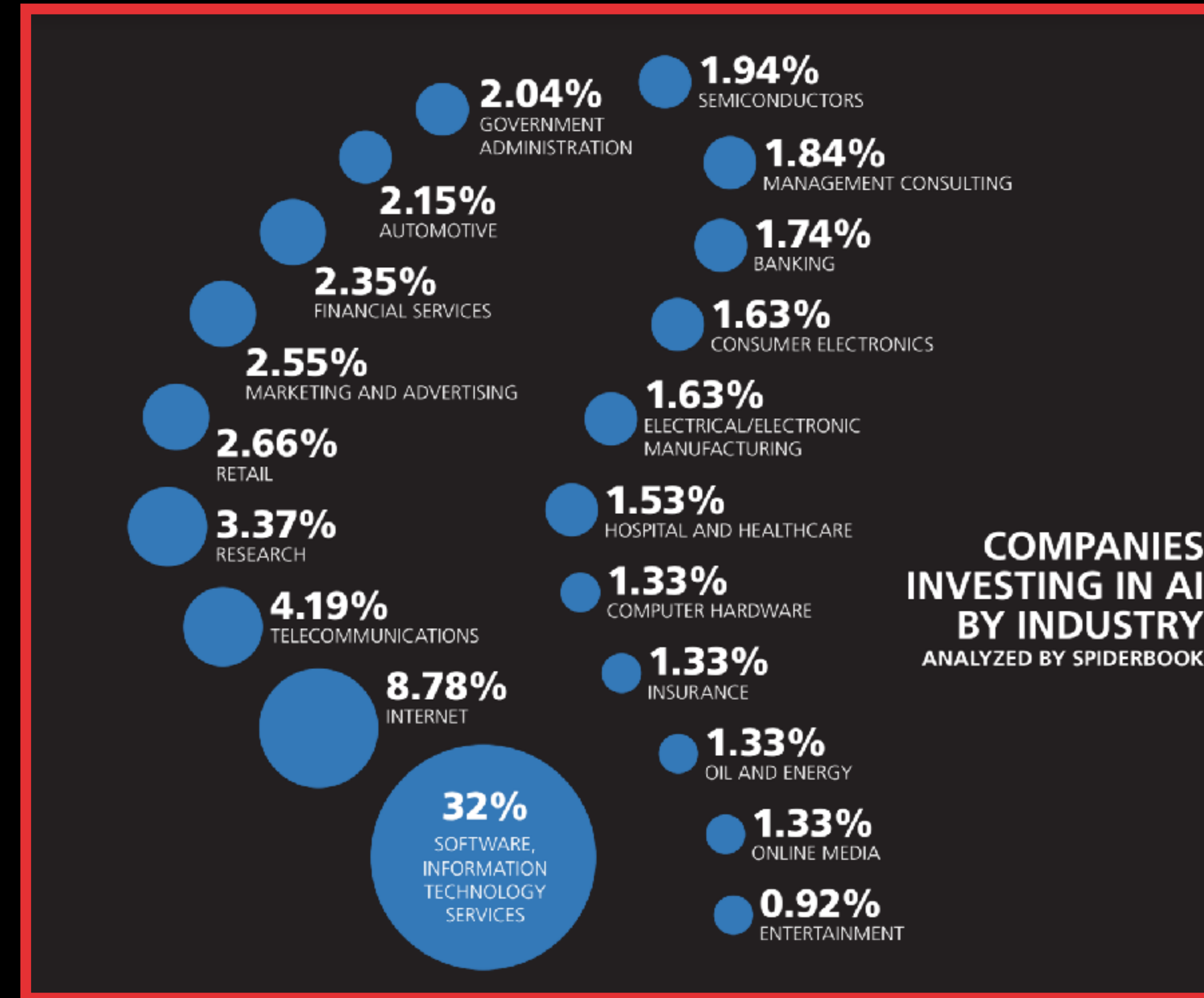
**\$70bn industry by 2020**

**2,600 companies** developing A.I. technology (2017)

By 2020, **85% of customer interactions** will be managed without a human

By 2022, **40% of customer-facing employees and government workers** will consult daily an AI virtual support agent for decision or process support

**1000+ new jobs globally** related to machine learning every month

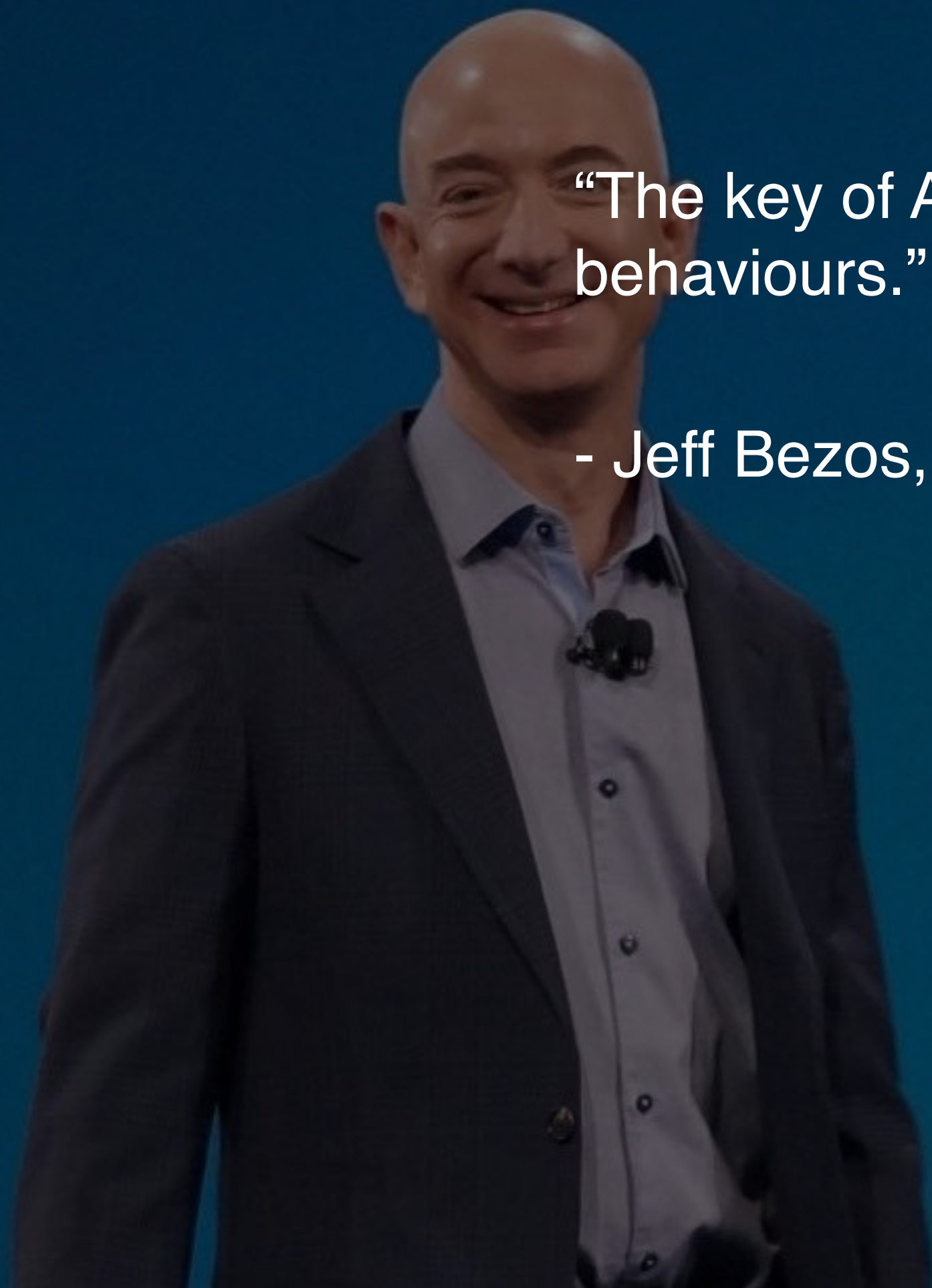






“The key of Amazon’s succes is it’s recognition of its customers’ evolving behaviours.”

- Jeff Bezos, Founder Amazon





“Banking has to work when and where you need it. The best advice and the best service in financial services happens in real time and is based on customer behavior, using principles of Big Data, mobility, and gamification”.

- Brett King, Founder Moven

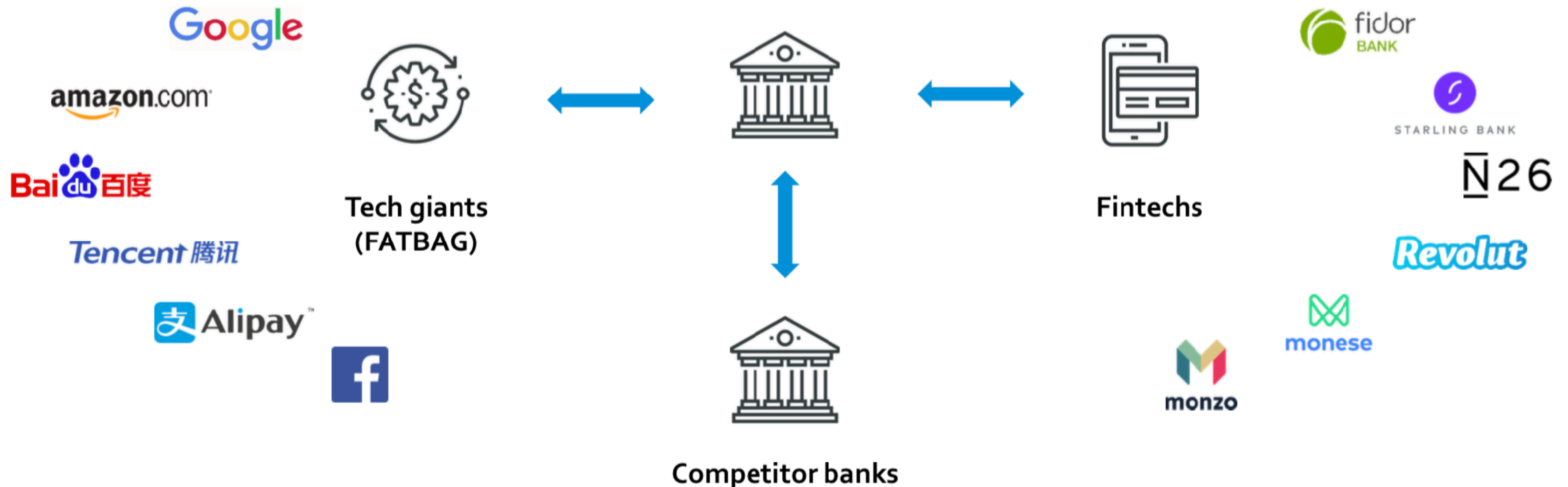




# TRADITIONAL BANKS ARE IN DANGER

Ever increasing competition

- \* GAFA (Google Apple Facebook Amazon)
- \* **BAT (Baidu, Alipay, Tencent)**
- \* Challenger banks
- \* Changing regulations



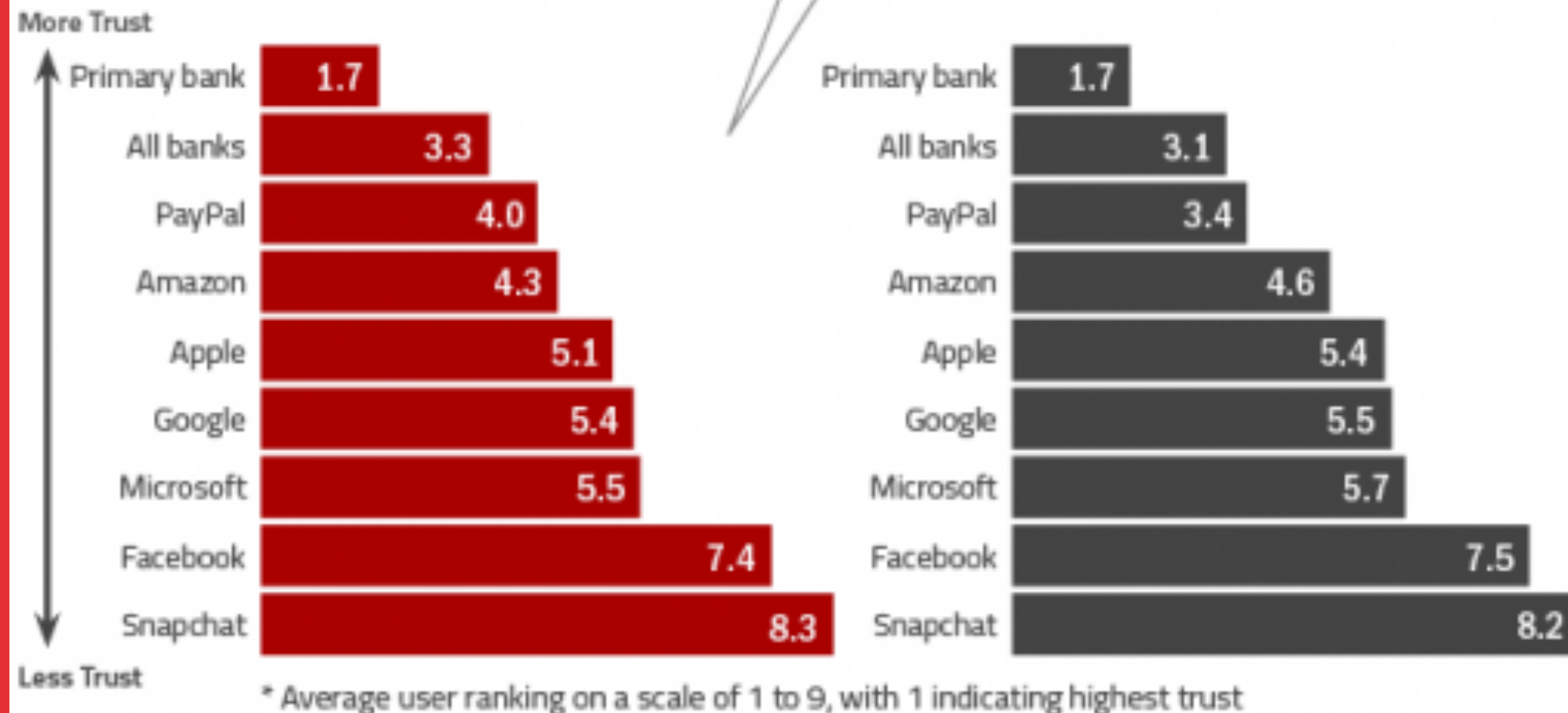


# SHIFTING CONSUMER TRENDS

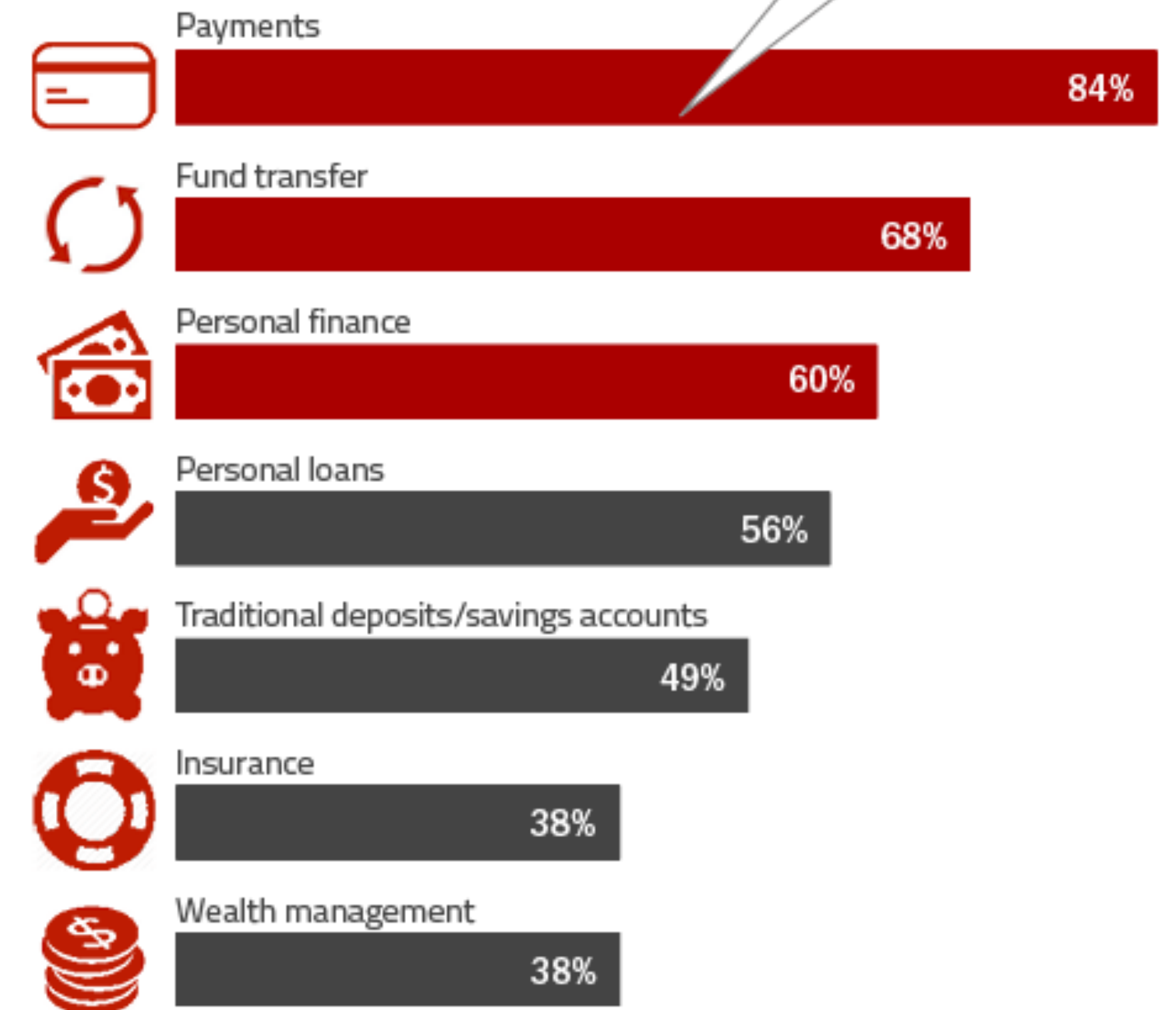
Consumers trust Paypal and Amazon almost as high as traditional banks

United States

United Kingdom



Activities consumers are already conducting with fintech firms (incumbent beliefs)



Q: What financial activities do you believe your customers already conduct with fintech companies?

SOURCE: PwC © April 2017 The Financial Brand

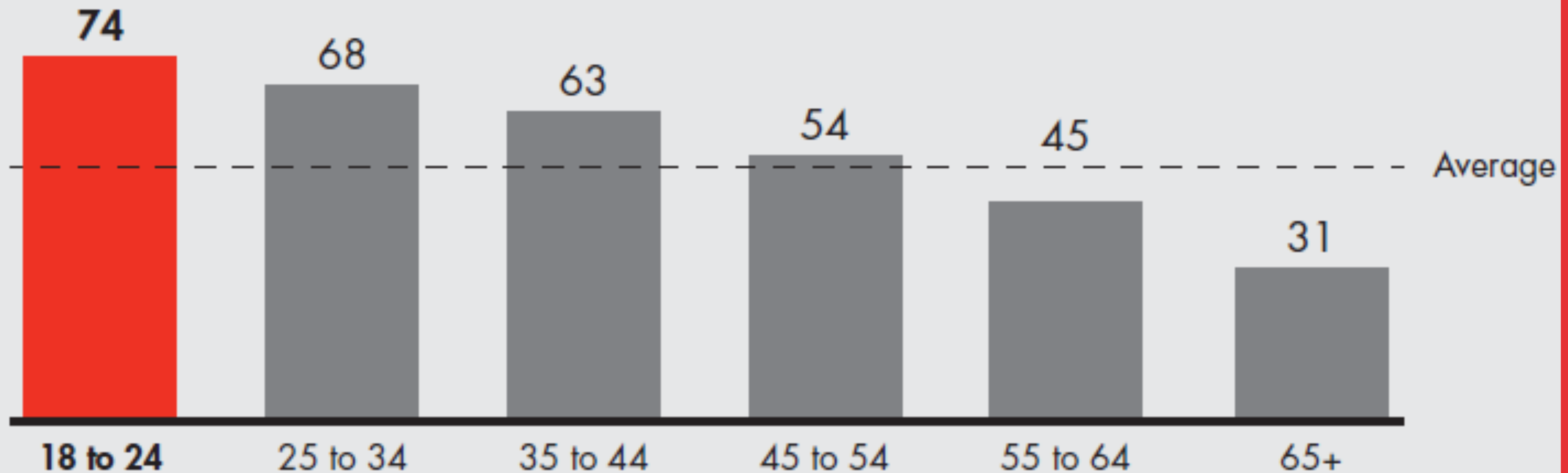


Figure 3

## Three-quarters of the youngest adults expect to buy a financial product from technology firms

“Do you think you will try any financial product from a technology company in the next five years?”

Percentage of US respondents, by age



Source: Bain/Research Now Customer Loyalty in Retail Banking survey, 2017, US (n=26,140)









Anti-fraud locating



Enabling locating will help to stop card transactions that aren't conducted within your proximity.



Disable magstripe payments



Disabling magstripe card payments will prevent the card from cloning.



Disable ATM withdrawals



If you won't be withdrawing cash from ATMs, disable ATM withdrawals for additional security.



Disable e-commerce payments



If you won't be spending online, disable e-commerce payments for additional security.



Account



Card



Support



Profile

€500.00

\$500.00

£ 500.00

GBP · British Pound

+

Top up

↺↻

Exchange

🏛️

Transfer

14 October 2016

Paypal

22:24

– £103.11

Starbucks

13:42

– £4.32

Account

Card

Support

Profile

Cancel

£1 = €1.4291

Exchange

GBP

– 150.00

Balance £38.20

No Fee

EUR

+ 213.46

Balance €102.89

1	2 ABC	3 DEF
4 GHI	5 JKL	6 MNO
7 PQRS	8 TUV	9 WXYZ
.	0	⌫



## Looking ahead

Where banks should be focusing technology efforts in 2018

Artificial intelligence and machine learning

APIs and open banking

Cybersecurity/biometrics

Commercial banking innovation

Source: American Banker research



# FINANCIAL PLAYERS INVESTING IN AI

Major financial players are placing big bets on AI

- \* Amazon & Watson popular
  - \* Acquiring startups
  - \* Incubation/acceleration of talent
- Losing against the tech giants - talent war

Swedbank

RBC  
RBC Royal Bank

JPMORGAN CHASE & CO.

Man AHL

Bank of America



pwc



citi

Deutsche Bank



CREDIT SUISSE



BNP PARIBAS



CASTLE RIDGE  
ASSET MANAGEMENT

Man

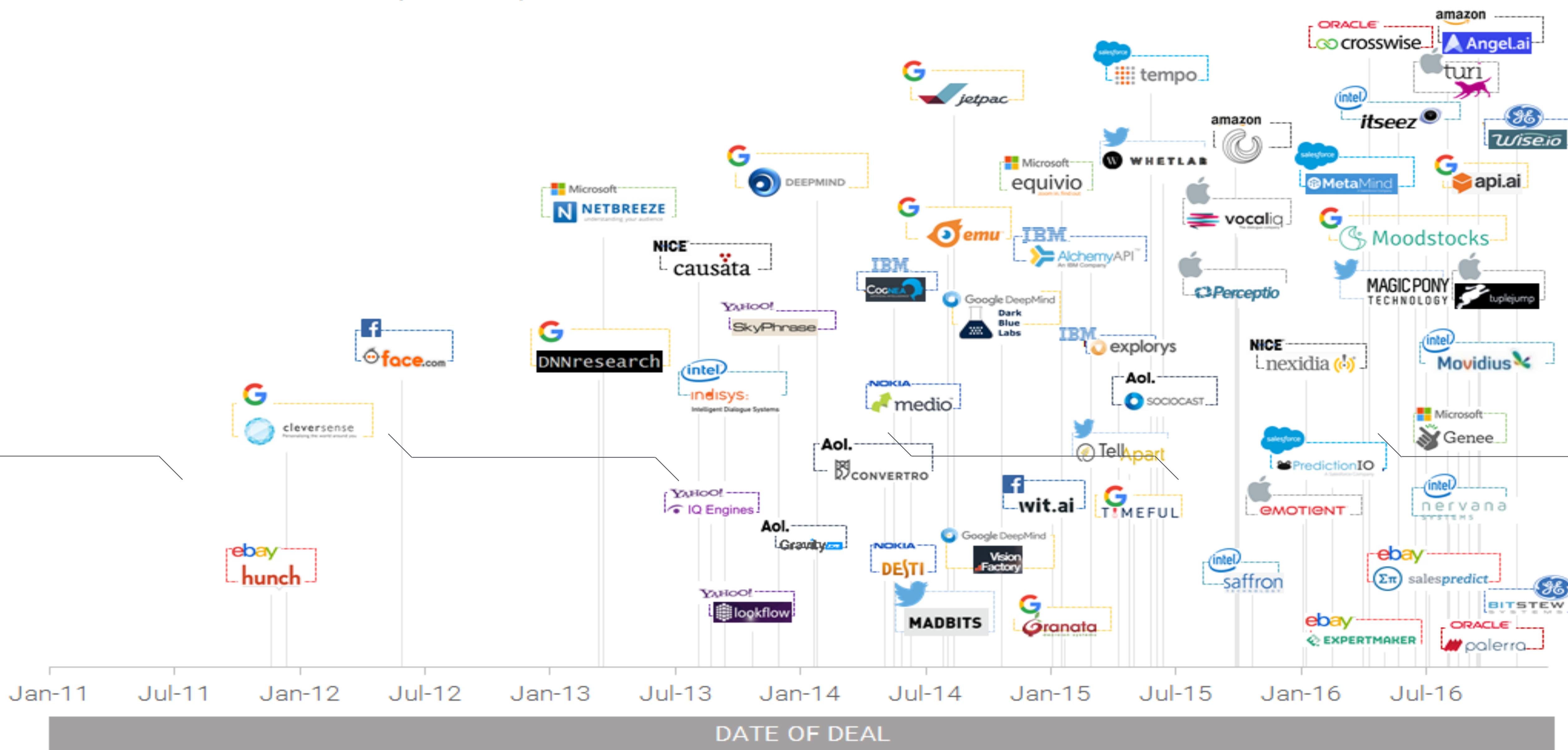
gla.





# RACE FOR AI: MAJOR ACQUIRERS IN ARTIFICIAL INTELLIGENCE


2011 - 2016 YTD (12/1/16)






Selected Firms with AI Banking Applications




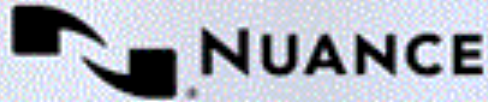
Identification

 FACE++




HR









Help Desk






Marketing

  
  
NarrativeScience  



CRM



Knowledge Mgt.



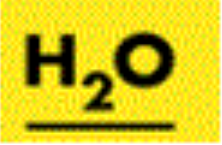
AML







Risk Management

BI

  
IBM Watson  


# WHY AI IN BANKING

Might be only means of survival

True differentiator - ability to spoil customers

UBS says AI could boost banks' revenues by 3.4% and cut costs by 3.9% over the next three years.

Investment and retail banks are looking at the application of AI for things like "robo advisors," chatbots, and compliance tools.

But there are challenges to implementation, as most banks need to sort their data sets out to handle AI.



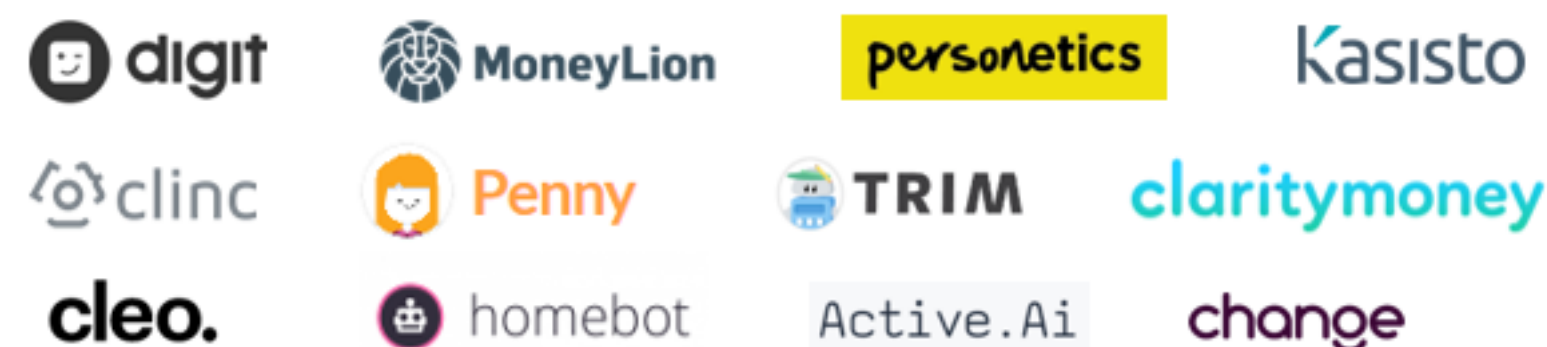


# THE AI IN FINTECH MARKET MAP

## CREDIT SCORING / DIRECT LENDING



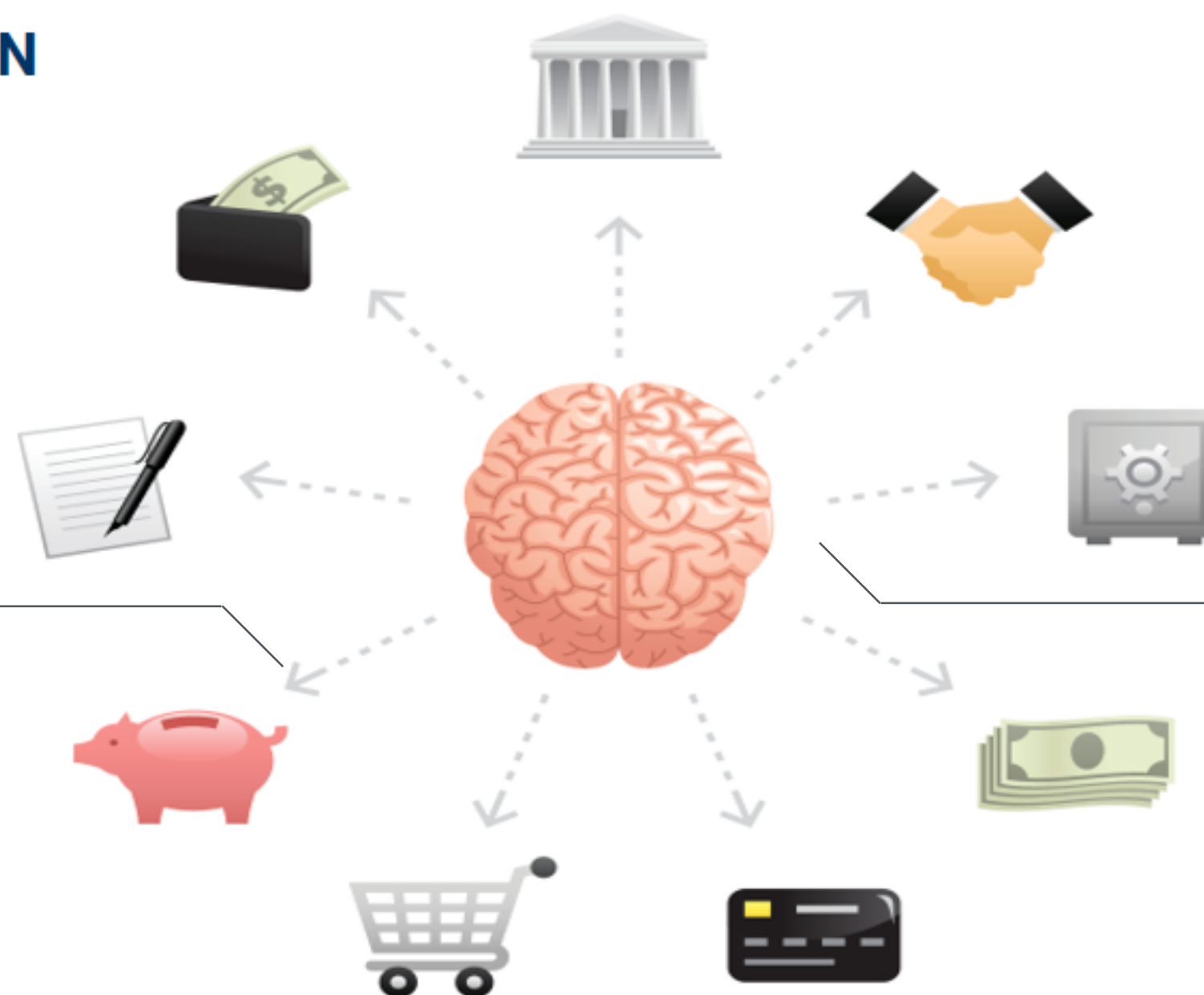
## ASSISTANTS / PERSONAL FINANCE



## QUANTITATIVE & ASSET MANAGEMENT



## REGULATORY, COMPLIANCE, & FRAUD DETECTION



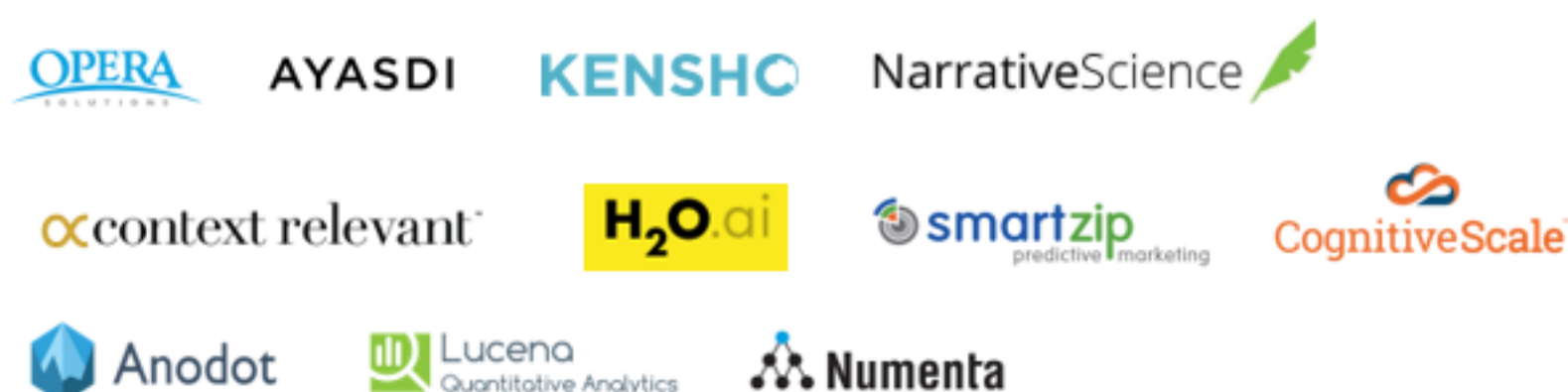
## INSURANCE



## MARKET RESEARCH / SENTIMENT ANALYSIS



## GENERAL PURPOSE / PREDICTIVE ANALYTICS



## BUSINESS FINANCE & EXPENSE REPORTING



## DEBT COLLECTION





# USE CASES IN BANKING



## Banking operations (machine learning)

- Risk profiling
- Compliance
- Robo Trading
- Smart contracing



## Customer engagement (chatbots)

- Customer insight/analytics
- Personal advising





JPMorganChase

## JP MORGEN CHASE

*360,000 HOURS OF MANUAL  
REVIEWMENT REDUCED TO  
SECONDS - ROBOTRADING*

*CHATBOT: COIN*

MORGA

## WELLS FARGO

*GOOD EXAMPLE OF A  
BANK DOING  
ACCELERATION - 1100  
APPLICATIONS SINCE  
2014*

WELLS  
FARGO

Bank of America

## BANK OF AMERICA

*INVESTED 3\$ BILLION INTO  
INNOVATION AND HAS HAD  
IT'S SECOND MOST  
PROFITABLE YEAR IN 2016*

*CHATBOT: ERICA*



## US BANK

*INVESTED IN MACHINE LEARNING  
PRACTICE IN OVER 25 STATES WHERE  
IT OPERATES - CEO EXPRESSES  
GREAT INTEREST IN CHATBOTS AS A  
CONVERSATIONAL INTERFACE*

usbank



cleo.



You've been paid! Looks like you could afford to save £300 this month...

cleo.

Shall I move that to your stocks and share ISA?

Yep pls - and can we up that for next month?



On it 🙌

cleo.

And I'll change next month's budget accordingly.

# CHATBOT/VIRTUAL AGENTS

**Chatbots are the new 24/7 customer service**

**Help to automate fraud prevention processes/ collect information**

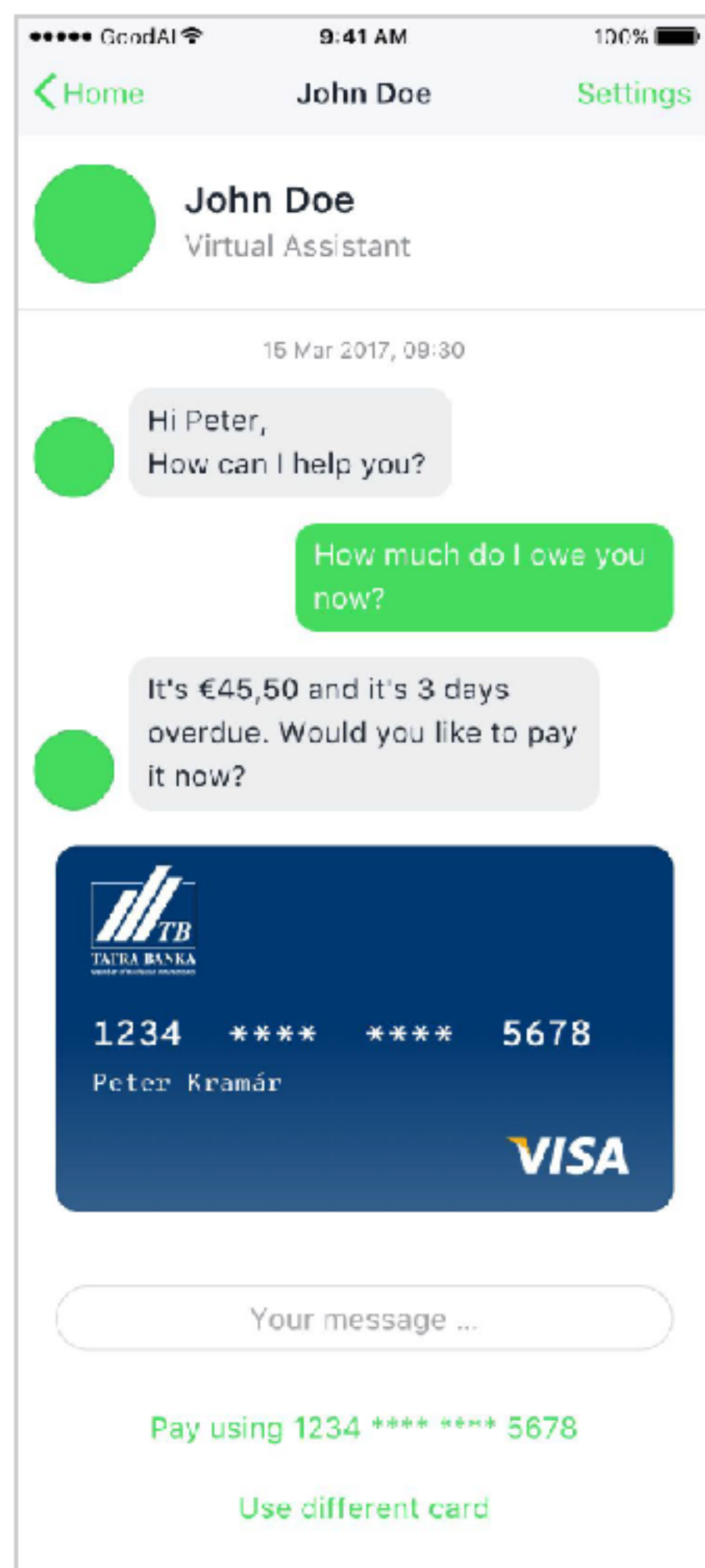
**Push relevant content to end users and analyze user engagement**

**Makes brand identity more consistent: one voice, one message, one tone for each client.**

**Run smoothly during peak traffic times, -> resulting a great user experience**

**JPMorgan, Bank of America, Citibank, Capital One & many startups building banking bots**





## Channels

Web page

Push, SMS

Chat

E-mail

Smart Agent

Mobile App

VR & AR

## Customer Experience

Human /  
Machine  
UX

## Brain

Listening NLP

Knowledge

ML

Chatting NLG

Business logic





# RESULTS

**BNY Mellon implementation of chatbots led to the following results:**

- **100 percent accuracy in account-closure validations across five systems**
- **88 percent improvement in processing time**
- **66 percent improvement in trade entry turnaround time**
- **1/4-second robotic reconciliation of a failed trade vs. 5-10 minutes by a human**
- **\$300.000 savings due to fund transferring bots**



# ROBO TRADING

*“At its height back in 2000, the U.S. cash equities trading desk at Goldman Sachs’s New York headquarters employed 600 traders, buying and selling stock on the orders of the investment bank’s large clients. Today there are just two equity traders left”*

Across Goldman Sachs, over 30% of staff are now computer engineers.

JP morgan hired “global head of machine learning” for same direction









## How would you apply AI

Use existing platforms, Amazon, Watson, Microsoft Azure etc

External technologies, developers, startups -> W.UP

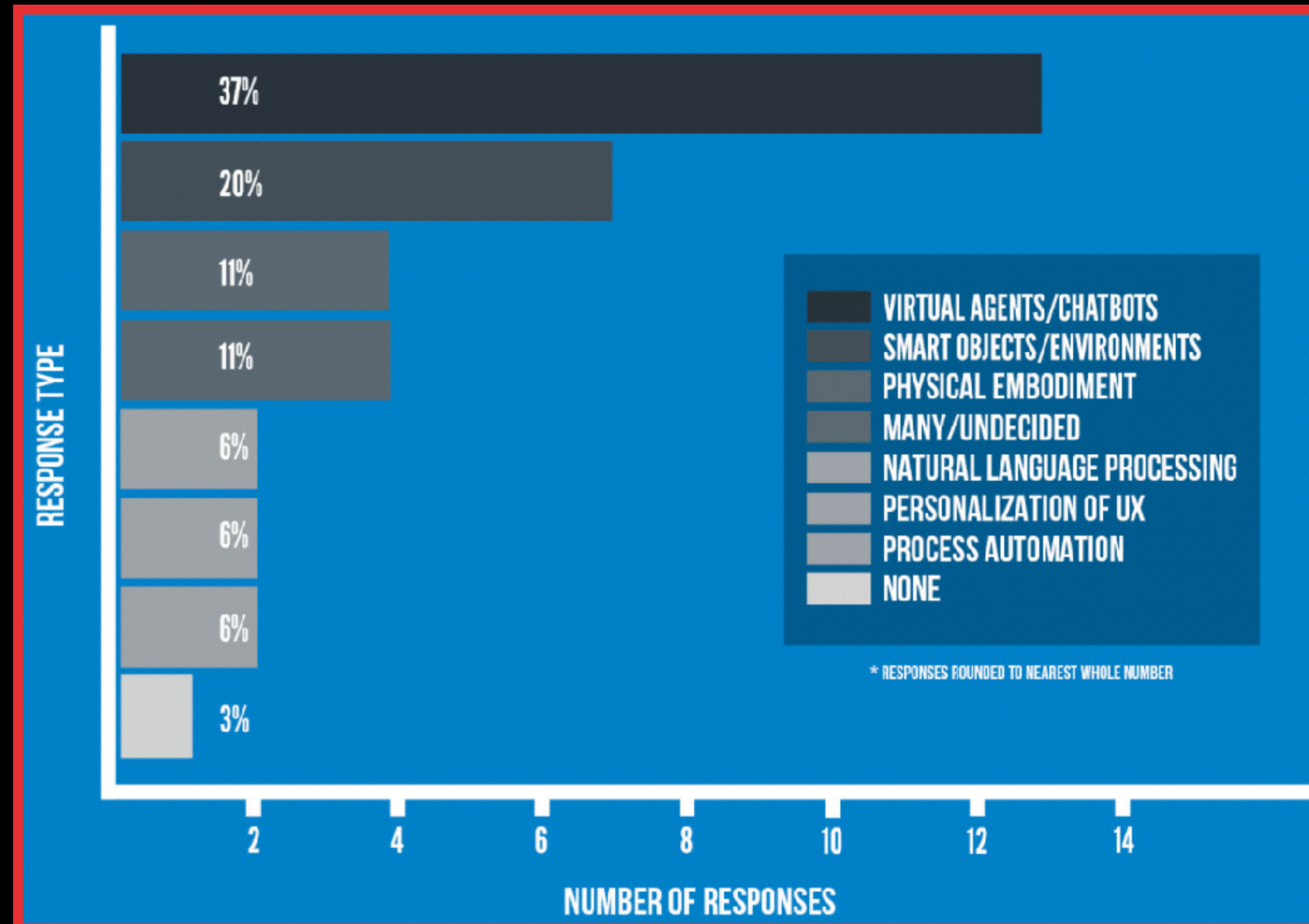
In-house machine learning division -> US bank/BoA

Acceleration & Incubation programs -> Wells Fargo, MKB



# KEY TAKE AWAYS

- AI is going to transform the banking industry
- Technology is hyped up, keep your heads cool
- Many applicable areas, with many upcoming use cases
- Clean Data necessary
- Applying AI in financial industry may be the only way to tackle the challenges in the future
- AI & Blockchain should be on the top list of





**QUESTIONS?**

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