How Data Analytics and Cognitive Computing are changing the game for Financial Services

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Chappuis Halder & Co.
chappuishalder.com
2013: 248 firms
2014: ~600 firms
2015: 1042 firms
2016: 1927 firms

Source: CBInsights, Venture Scanner
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Bitcoin/Blockchain
872 firms

Insurtech
982 firms

RegTech
88 firms

WealthTech
90 firms
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AI in Fintech
88 firms

Equity Financing
(138 Companies)
Remittances
(60 Companies)

Employee Benefits
(47 Companies)
Enterprise/Commercial
(88 Companies)
Health/Travel
(104 Companies)
Data/Intelligence
(96 Companies)

Comparison/Marketplace
(366 Companies)
Infrastructure/Backend
(209 Companies)

Insurtech
982 firms

RegTech
88 firms

WealthTech
90 firms

AI in Fintech
88 firms

Categories
KYP
Data Aggregation, Modelling and Reporting
Fraud Prevention
Regulatory Awareness

CREDIT SCORING / DIRECT LENDING

ASSISTANTS / PERSONAL FINANCE

REGULATORY, COMPLIANCE, & FRAUD DETECTION

GENERAL PURPOSE / PREDICTIVE ANALYTICS

BUSINESS FINANCE & EXPENSE REPORTING

QUANTITATIVE & ASSET MANAGEMENT

INSURANCE

MARKET RESEARCH / SENTIMENT ANALYSIS

DEBT COLLECTION

Source: CBInsights, Venture Scanner
Intricated Concepts

**Data science** is a concept to unify statistics, data analysis and their related methods in order to understand and analyze actual phenomena with data.

**Big data** is high volume, high velocity, and/or high variety information assets that require new forms of processing to enable enhanced decision making, insight discovery and process optimization.

**Artificial Intelligence** is the ability of a digital computer to perform tasks commonly associated with intelligent beings - ability to reason, discover meaning, generalize, or learn from past experience.

**Cognitive systems** understand natural language and human interactions, generate and evaluate evidence based hypothesis, adapt and learn from user selections and responses.

Source: Gartner, Britannica, IBM, CH&Co analysis
New technologies... really?

AI / Machine Learning has been around for ~60 years (Dartmouth college)

“BigData” has been around for ~20 years (John Mashey, Silicon Graphics)
Why is it different now?

Data is available (ZB)

We have the computing power

Algorithms are more efficient

Source: Microsoft, The Economist
Investing

Dataminr

Transforms publicly available social media streams into actionable signals. E.g. Preliminary reports of Volkswagen’s emissions scandal three days before the market reacted.

Kensho

Searches for correlations between world events and their impact on asset prices, and is able to answer natural questions such as “What sectors and industries perform the best three months before and after a rate hike?”

Sqream

Sqream analyzes people's digital footprints and behavior to predict which products and services they're most likely to want (DB, UBS, ...)

Investing

Developed an analytics platform which offers information on the movement of the global supply of the world's commodities, and launched its own Hedge Fund!
Customer Support / Customer behavior

**Digital Genius**
Analyzes incoming messages, predicts meta-data, routes cases, provides customer services agents with accurate suggestions and automates responses

**True AI**
Learns to reply to conversations, making customer service semi-automatic

**Kasisto**
Conversational AI with deep financial knowledge
“From mundane requests to complicated tasks, banking is as easy and natural as sending a text”
Underwriting

Uses machine learning software to help lenders make more accurate credit underwriting decisions.

Offers geospatial and aerial imagery structured data provider leveraging advanced computer vision for insurance / property underwriting.
Consume different channels and types of data into usable database allowing advanced pattern matching analytics to spot anomalous behavior

Cognitive computing platform implemented by Nasdaq to monitor entire trades lifecycle to reveal the intent behind specific actions and identifying suspicious activities

Uses machine learning models to detect fraudulent activity
Regulatory Compliance

Cross-referencing of key sets of internal data in order to facilitate trade reconstruction and reporting (as illustrated by Dodd-Frank requirements)

Identify, manage, monitor, and analyze operational risk across the enterprise
The “google search of Financial research“ curates and semantically indexes the world's investment and market research content.

Automates the writing of reports, personalized websites, emails, articles and more with natural language generation software.

Transforms data into narratives. Credit Suisse uses it to "improve investment research coverage, quality and consistency", USAA to generate personalized written reports for individual members' portfolios.
Challenges for incumbents

How to innovate? (cooperate, hire...)

The quality of the data!

No more advantage from scale?

No more information advantage?

When over-personalization is counter-productive

Is regulation a protection or a burden?
What next?

Possible role reversal

- Industries used to hire Computer/Data scientists
- Now Tech firms (Google, Amazon, Baidu, ...) hire business experts!

Quantum computing

Convergence
### What next?

**How long before we reach “human-level” AI?**

- ~5 years
- ~10 years
- ~20 years
- ~30 - 50 years
“Human-level” AI has always been 20 years ahead!

Figure 1: Median estimate for human-level AI, graphed against date of prediction.