MiFID II is for Humans
RoboMifid shall be for Algorithms

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When a new technology arises, American startups will make a business out of it, Chinese companies will copy it, European institutions will regulate it.

MiFID II, a "Junior Woodchucks' Guide" for Financial GoodFellows?

Slicing the MiFID cake: robots will be the cherry-pickers…

1. Investor Protection

2. Fee Transparency

3. Market Structure

4. Internal & External Control

Internal and External Controls
▷ Defined target markets for investment products
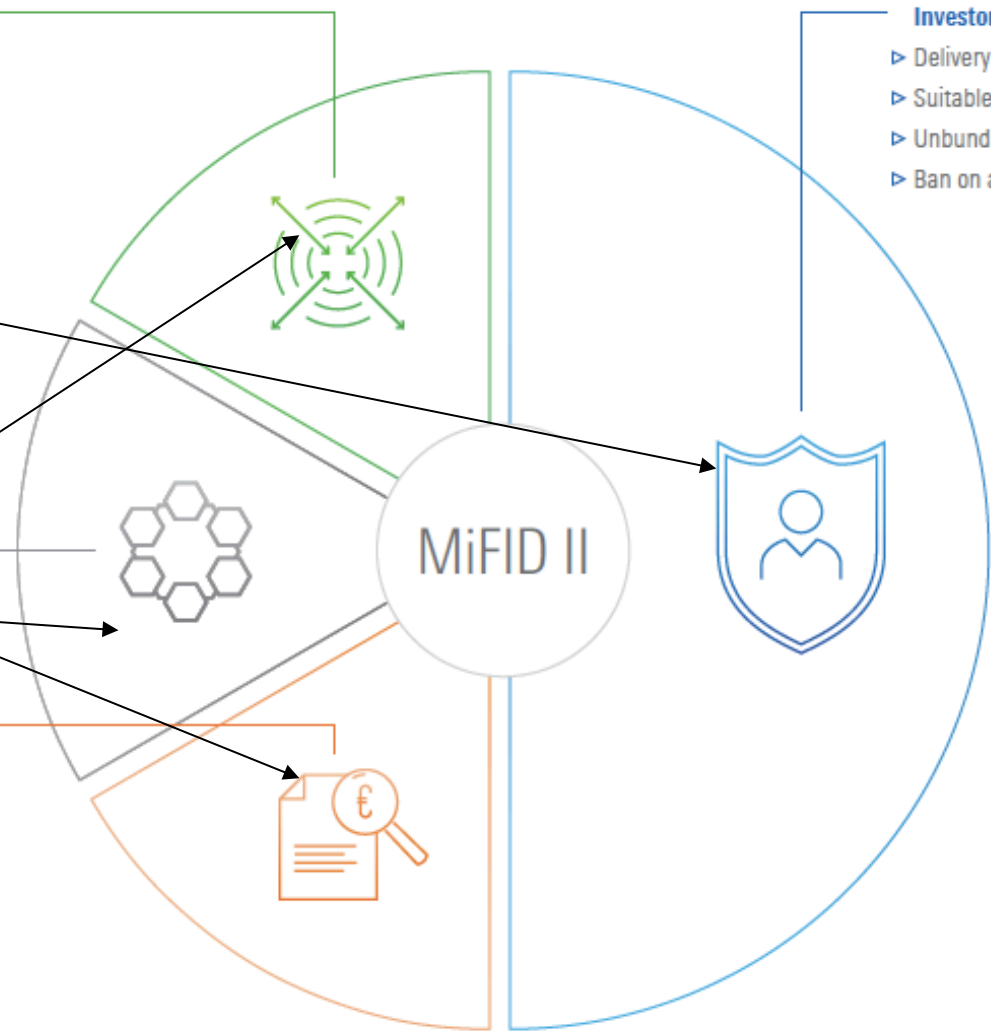▷ Monitored distribution of investment products

Investor Protection
▷ Delivery of suitable advice
▷ Suitable product lineups
▷ Unbundled research costs
▷ Ban on adviser commissions

Market Structure
▷ Pre- and post-trade transparency

Fee Transparency
▷ Clearer costs and charges for investment products
▷ Forthright fees for advice

MiFID II

TECNOLOGIA

Il patrimonio nascosto delle banche

26/02/2017

di **Carlo Alberto Carnevale Maffé**

N e hanno scoperto troppo tardi l'immenso valore. Ora rischiano di vederselo sottrarre, legalmente, dagli ultimi arrivati. Le banche sono rimaste oziosamente sedute per anni sul forziere del loro più grande patrimonio nascosto: i dati digitali dei propri clienti. Tra pochi mesi, i lucchetti di quel forziere

PSD2 & GDPR: the shift of data ownership
Banks must grant digital access to accounts ("XS2A")

PSD2 XS2A will enable customers more options to interact with banks through TPPs, potentially causing fragmentation in services
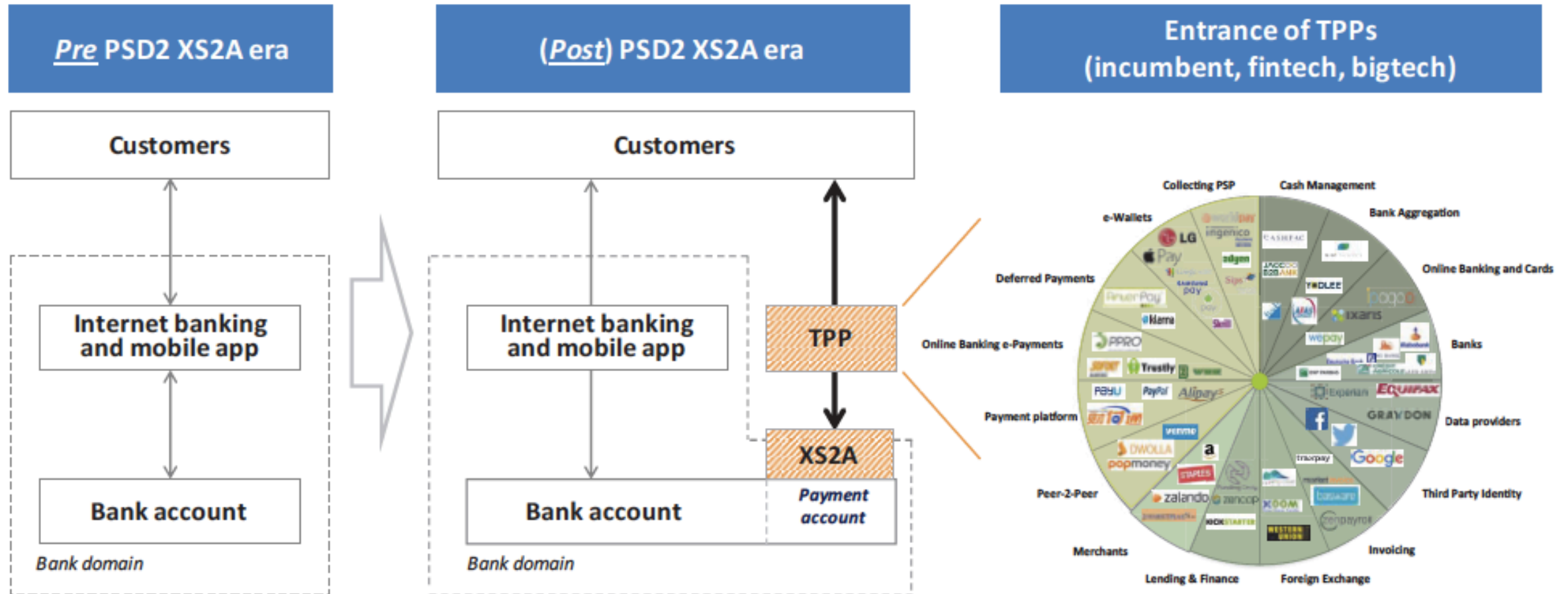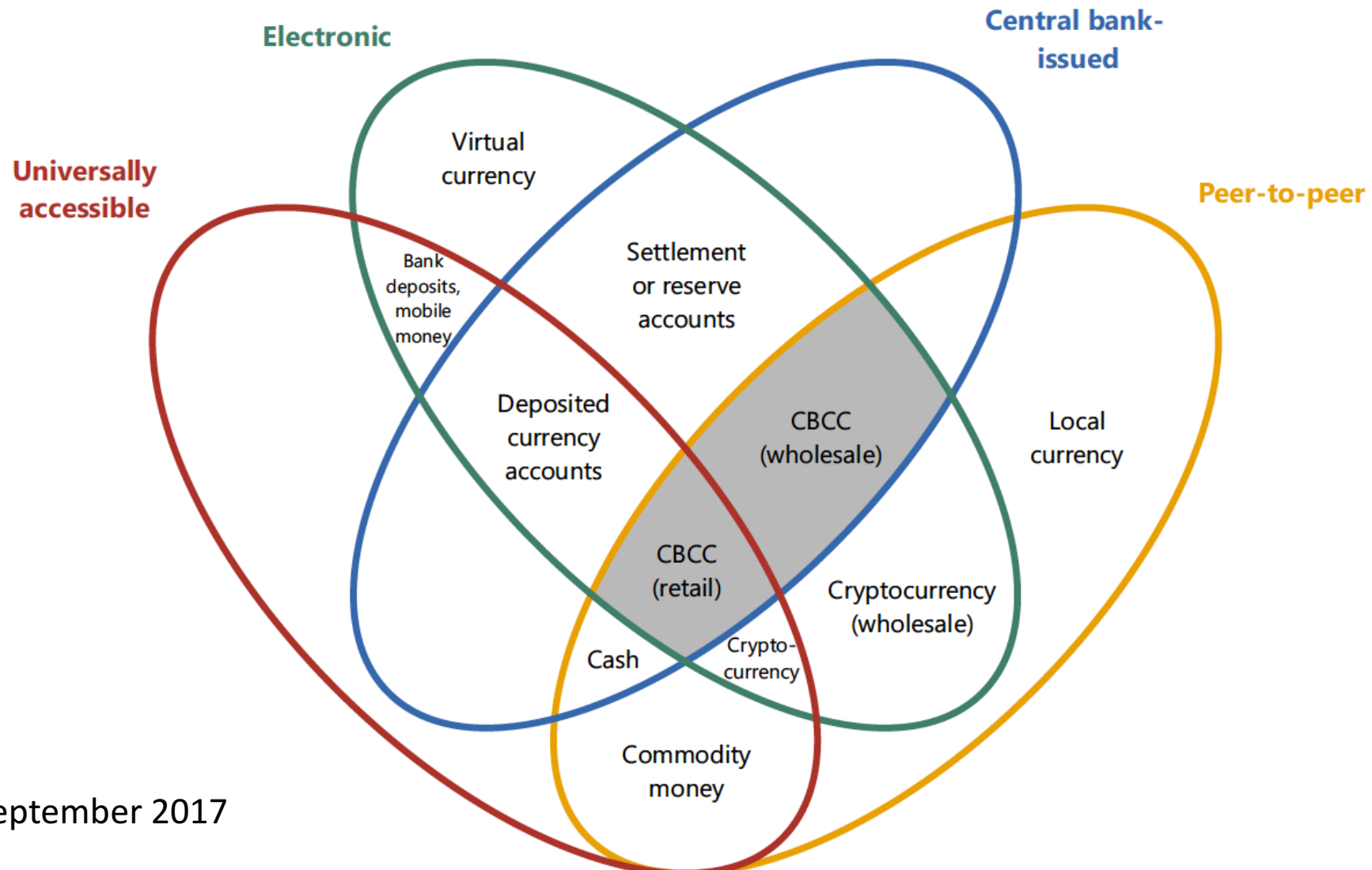
Let a thousand flowers bloom: a new taxonomy of money
Ready for investments denominated in Central Bank Crypto Currencies?

The money flower: a taxonomy of money   Graph 3
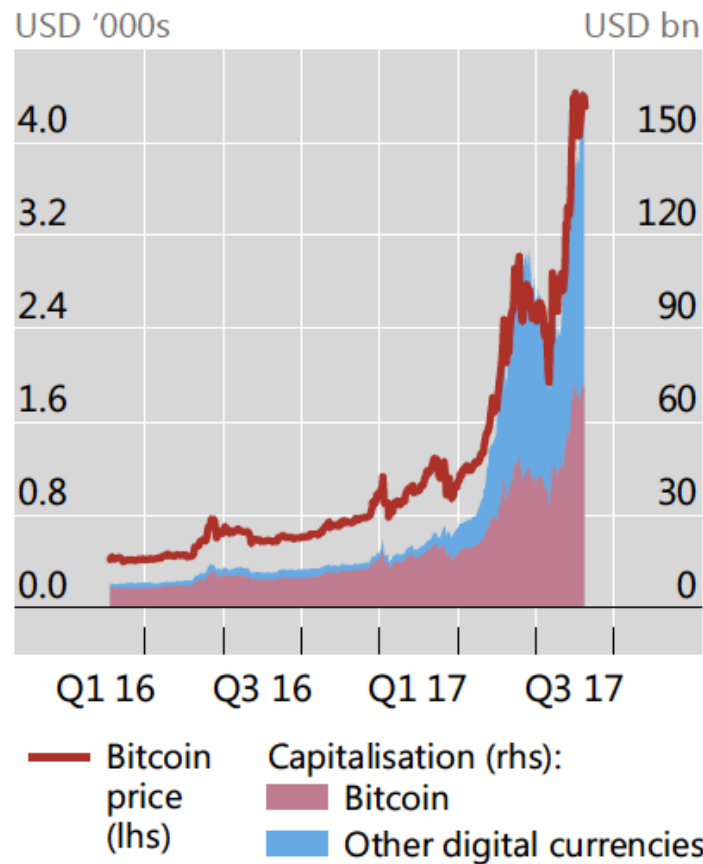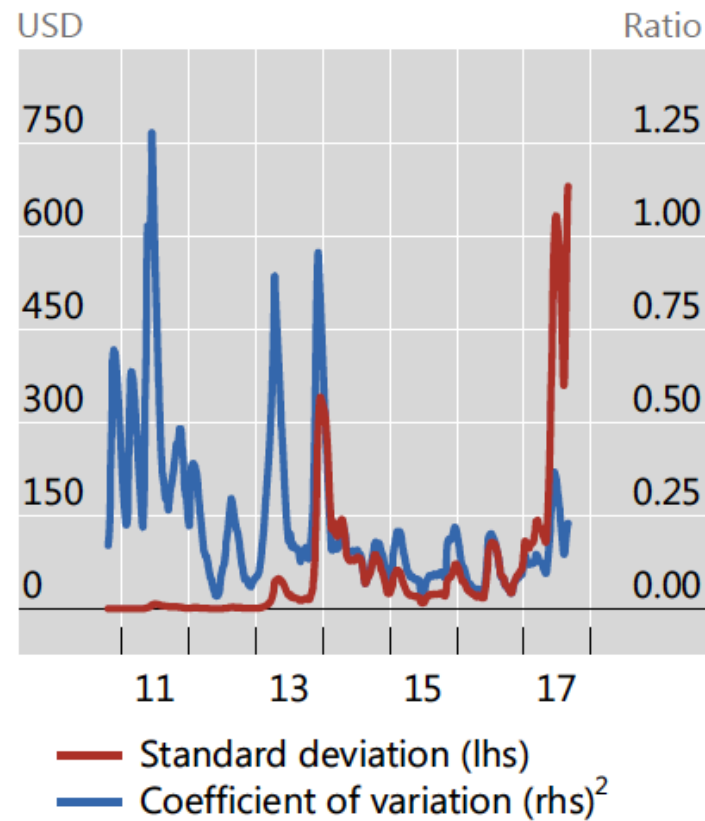
Source: BIS, September 2017

Not an asset class, yet. But: can you ignore the implication of OLT?
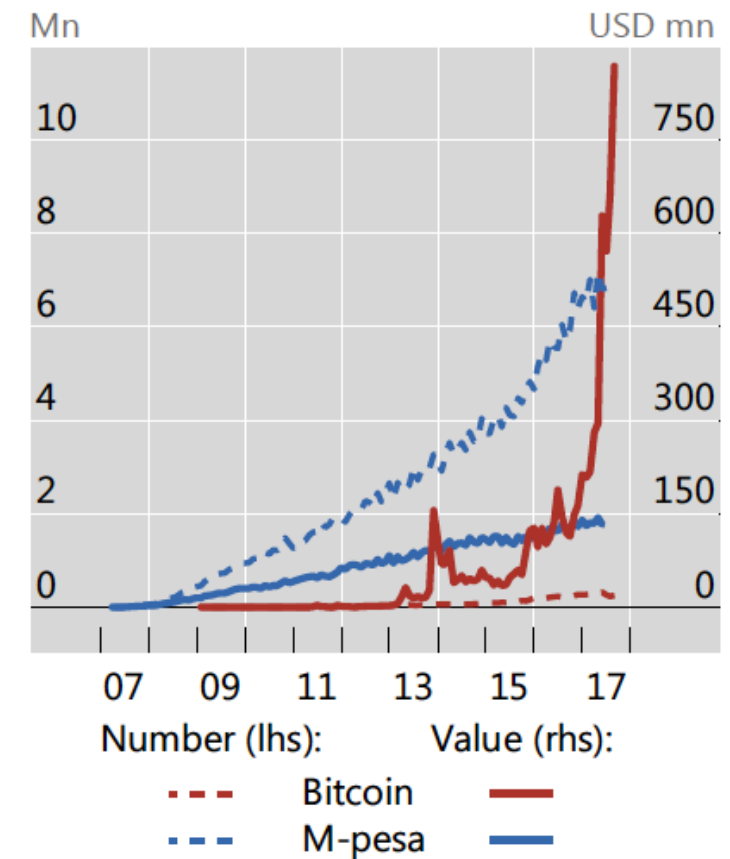*Investors on the rollercoaster of cryptocurrencies in the Blockchain Theme Park*

Closing price and market capitalisation

USD '000s / USD bn

Legend:
— Bitcoin price (lhs)
Capitalisation (rhs):
▮ Bitcoin
▮ Other digital currencies

Bitcoin price volatility[1]

USD / Ratio

— Standard deviation (lhs)
— Coefficient of variation (rhs)[2]

Average daily transactions[3]

Mn / USD mn

Number (lhs):   Value (rhs):
--- Bitcoin   — Bitcoin
--- M-pesa   — M-pesa

[1] Ninety-day moving averages.   [2] Ratio of standard deviation to mean.   [3] Monthly averages. For bitcoin, estimated transaction value in USD; for M-pesa™, transaction value in KES converted into USD.

Sources: Central Bank of Kenya; CoinDance; CoinDesk; www.blockchain.info; authors' calculations.

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The Dangers of Algorithmic Markets.
When Computers Inhibit Competition

"Pricing Bots can form cartels and raise prices"

The rise of **algorithmic tacit collusion**, hub-and-spoke and **behavioural discrimination.**

The increase in price transparency can lower search costs for investors. But if pricing decisions are shifted from humans to pricing algorithms, we can have the opposite effects.

Pricing and terms of sales can be easily monitored by algorithms, with immediate detection of any discount and speed of retaliation. If each **algorithm can swiftly match a rival's discount and eliminate its incentive to discount in the first place**, the threat of future retaliation keeps the coordination sustainable.
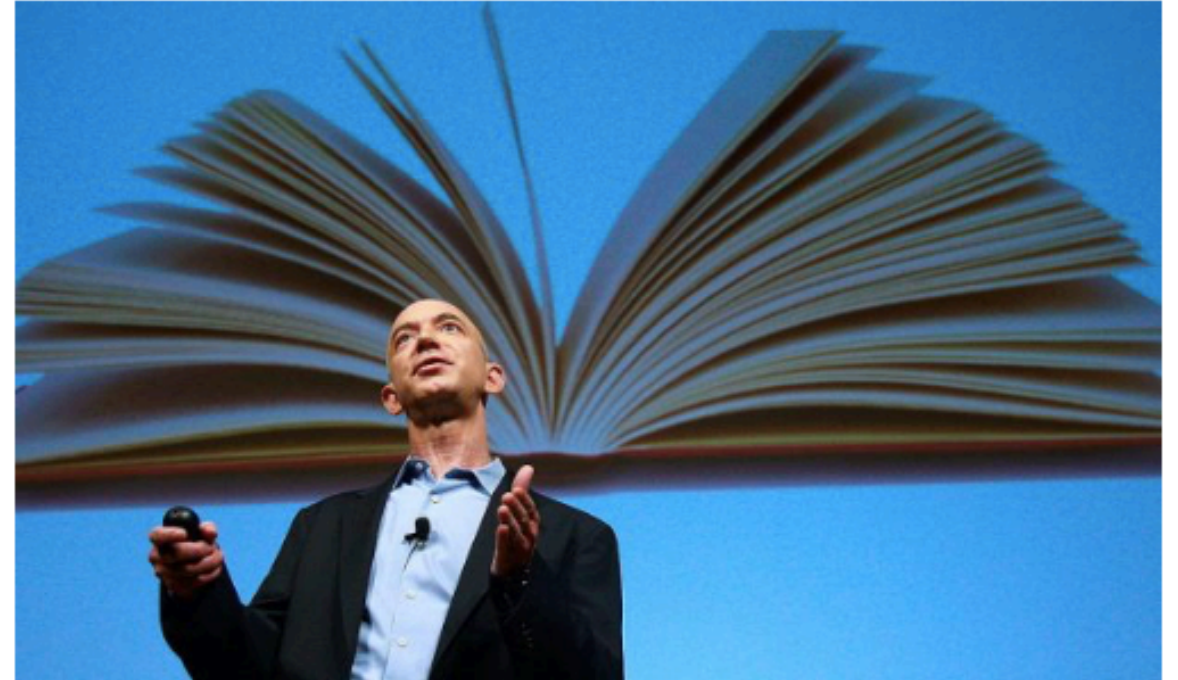
(Source: Ezrachi & Stucke, 2017)

The Truman Show of Algorithmic Markets.
## *Investor through behavioural profiling?*

A facade of competition profiting from the asymmetry of information and degradation of privacy protection.

Behavioural discrimination is triggered by the use of personal data to **track investors' behaviour** and approximate the **buyer's price sensitivity**, awareness of outside options and willingness to pay. This can shift the demand curve to the right in inducing us to buy things we ordinarily wouldn't have (or want).

Investor manipulation: algorithmic pricing can approximate an investor's willingness to pay - the **reservation price** - and charge accordingly.

*"All economic models are based on human incentives and what we think humans rationally will do. It's entirely possible that **not all of that learning is necessarily applicabile in algorithmic markets**"*
(US Federal Trade Commission)
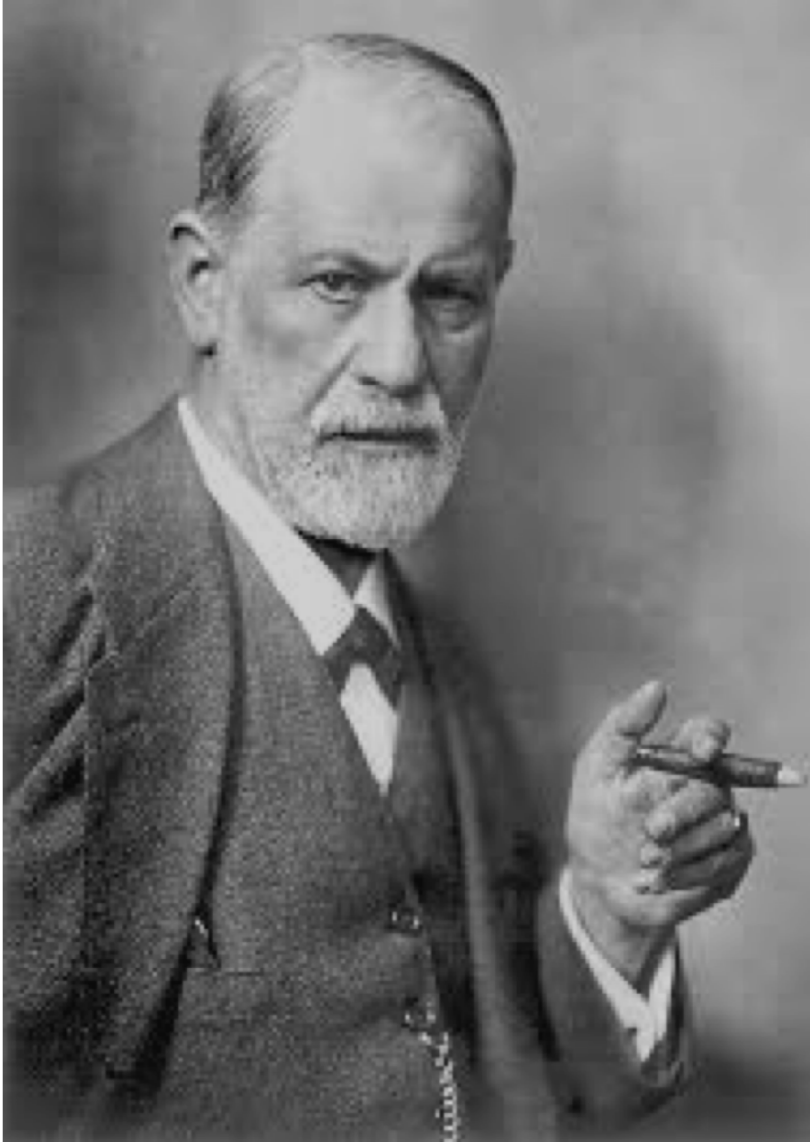
(Source: Ezrachi & Stucke, 2017)
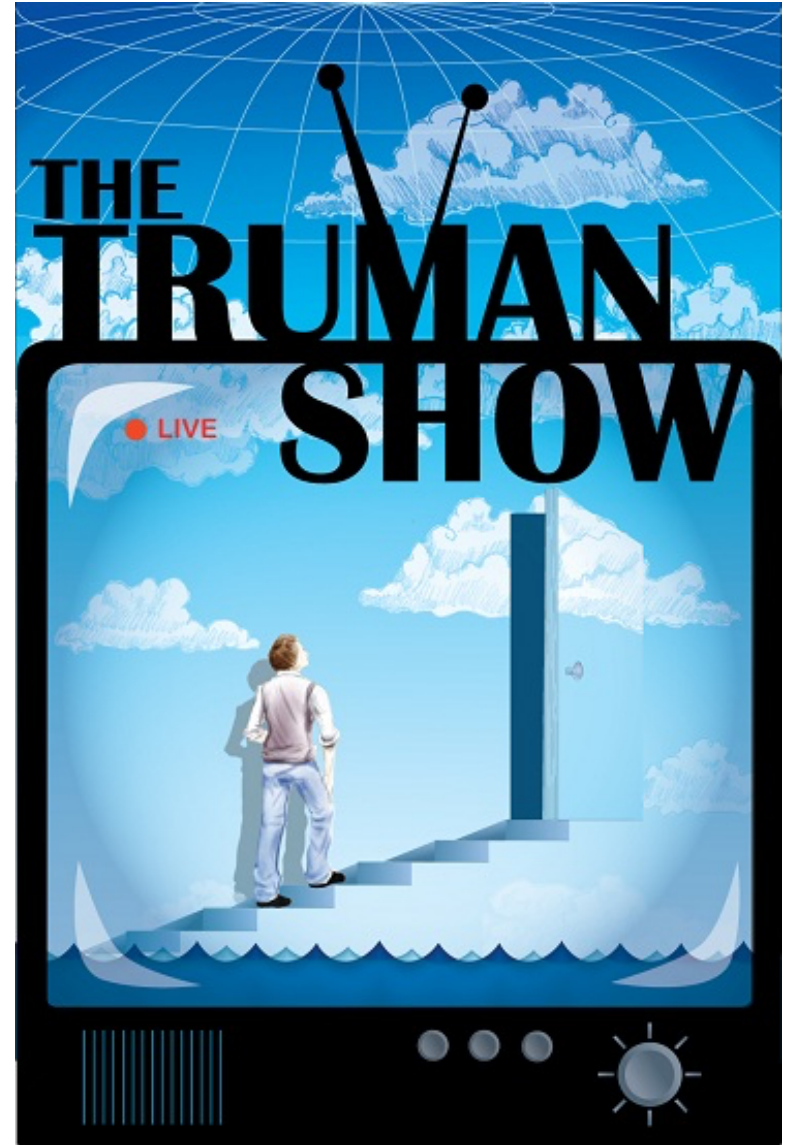
Data are Words. Markets are Conversations
Prohibitions may lead to bad equilibria and loss of consumer welfare
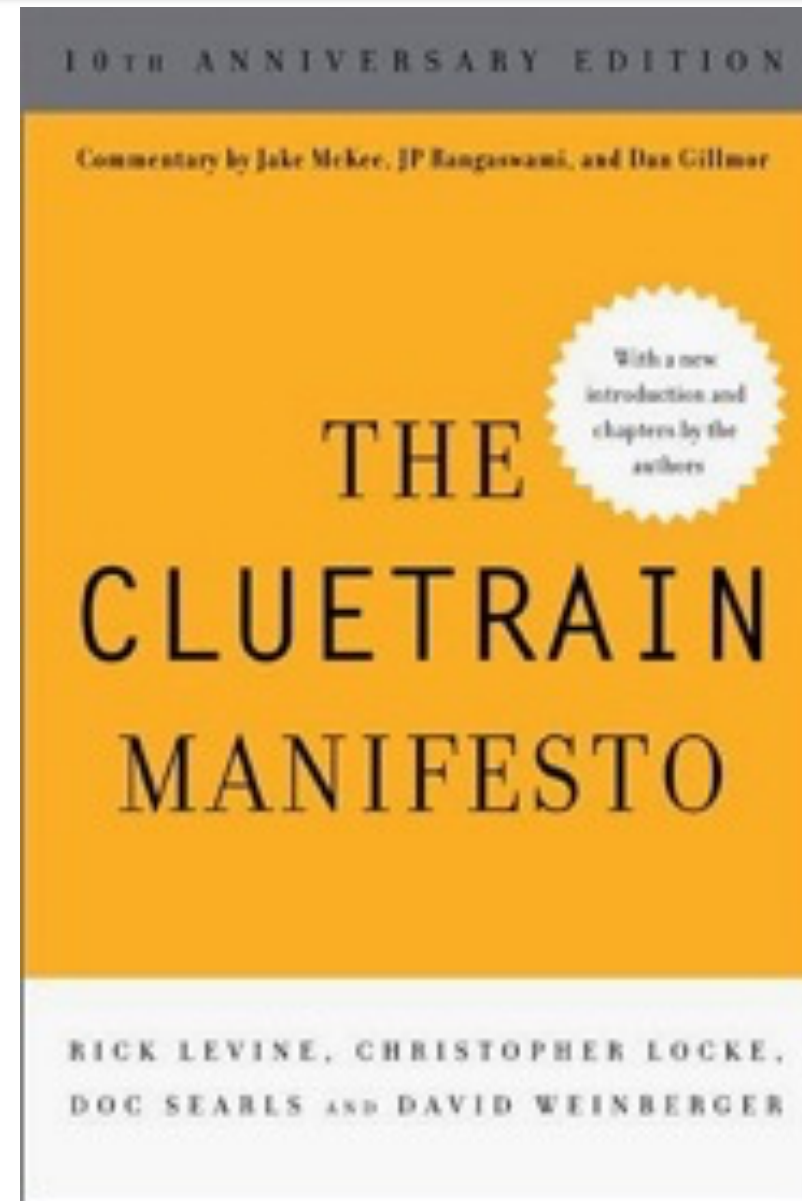
Data protection or data retention?
A Freudian journey towards digital puberty

II. Anal Stage

- It is the second stage of oral development that occurs between 1 ½ until 3 years of age, in which the child's greatest pleasure involves the anus or the eliminative functions associated with it.

Privacy is an economic good.

Let's make the most out of it for (algorithmic) investors.

Investors Data as liquid assets

Independent Advisors as entrepreneurs of customer data: making them accessible and liquid

Investor **Data Aggregation** and Consolidation (fragmentation destroys value)

Data Cartolarization: tranching of data asset, sort of data-driven CDOs

**From Investor Protection
To Investor Empowerment and Algorithmic Organisation**

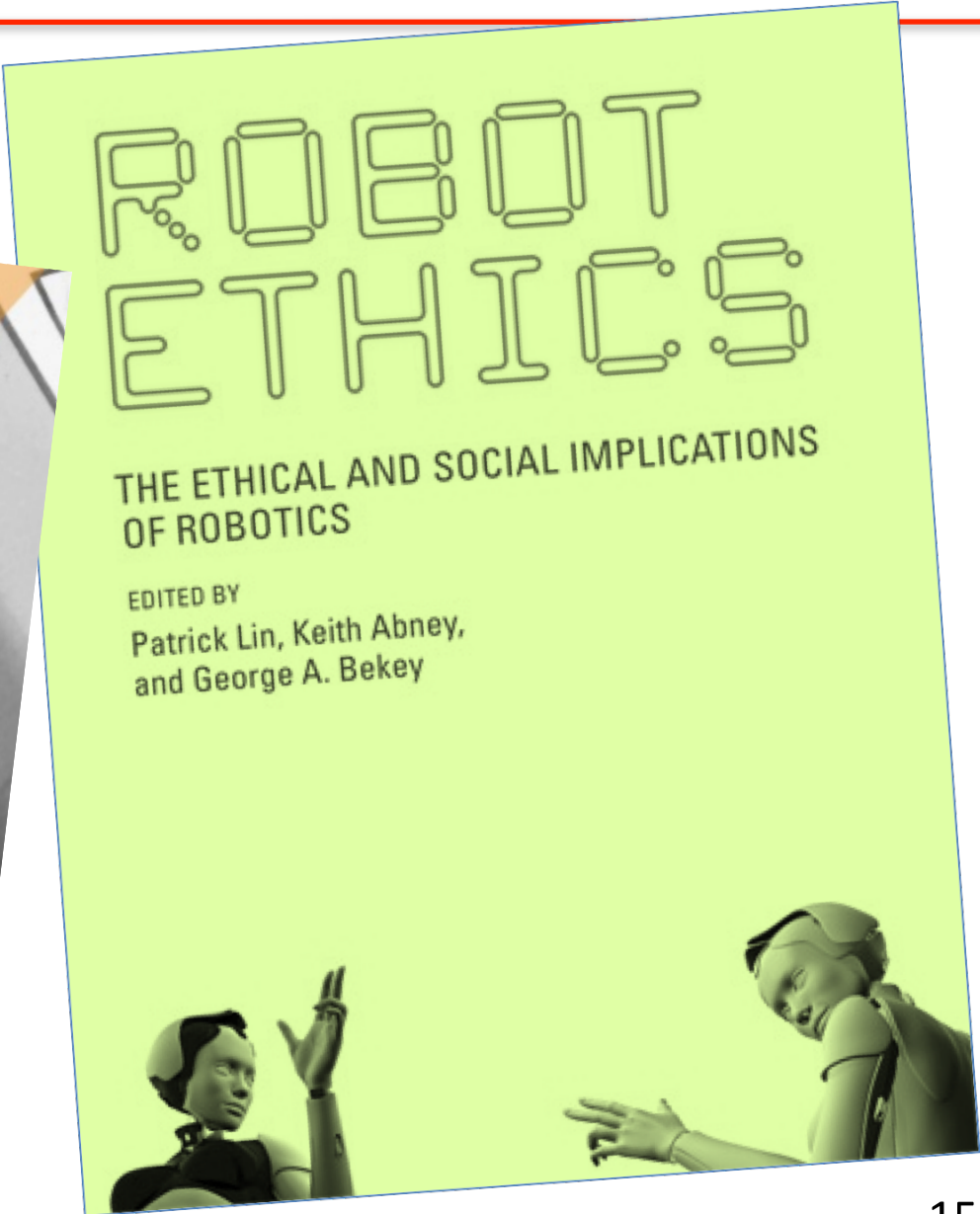# Single child investor? Adopt a "Digital Twin"
Why sticking to dumb human investors? Ready to advise their personal robotic twins?
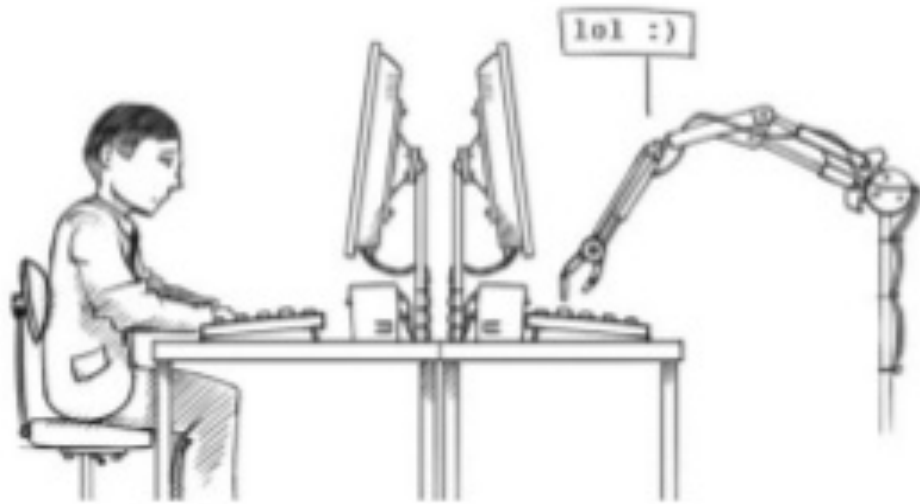
Hybrid machines are learning, deeply. They should learn to behave

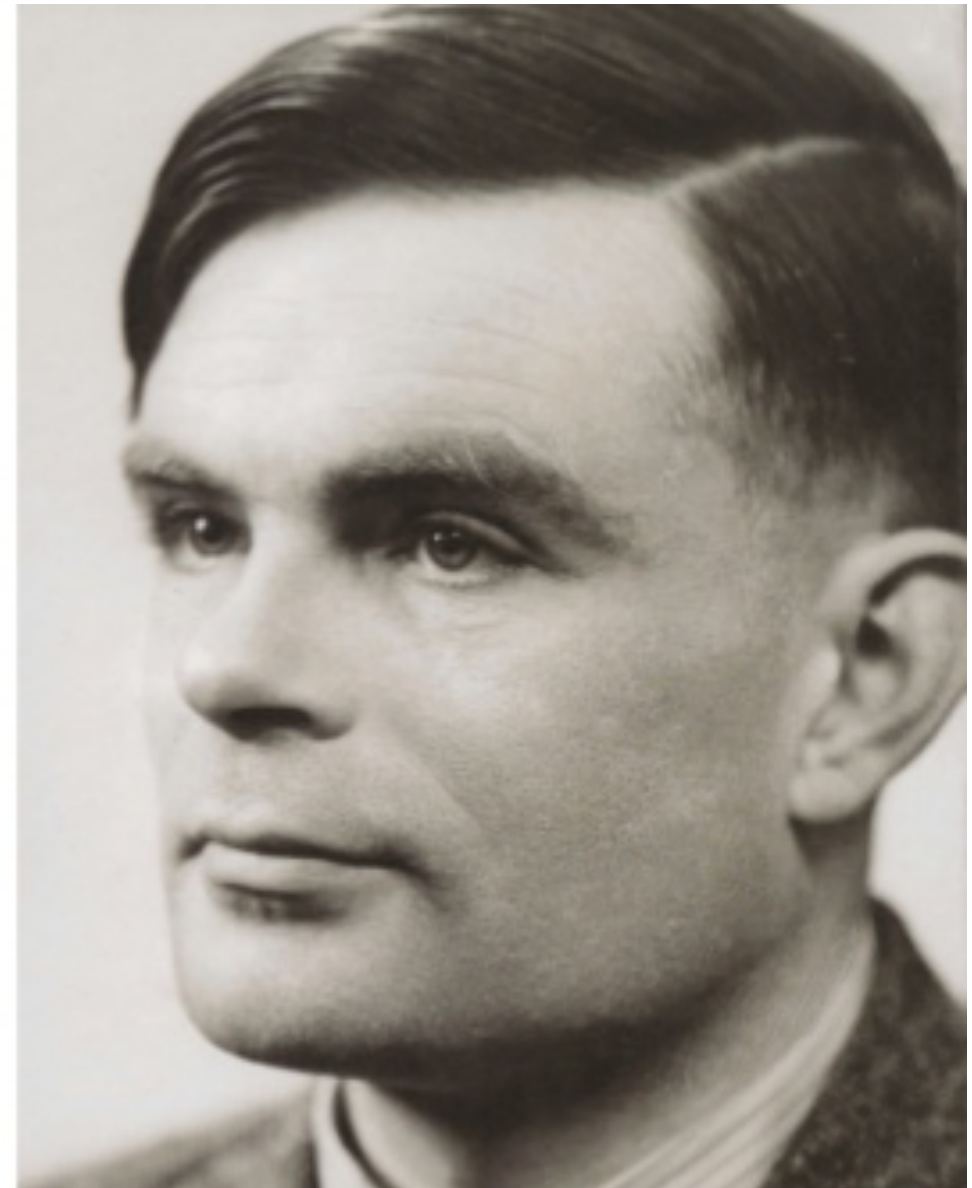# End of human monopoly on structured thought.
And on Ethics?

Artificial Intelligence

Developing Standards of Digital Ethics

lol :)

"We need not decide if a machine can think;
we need only decide if a machine can act as
intelligently as a human being."

— **Alan Turing**, 1950

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Some human behavior is un-intelligent
Some intelligent behavior is in-human

Some human behavior
is unintelligent.
Some intelligent
behavior is inhuman.

1. **Total Turing Test**: The interrogator can also test the perceptual abilities of the subject (requiring computer vision) and the subject's ability to manipulate objects (requiring robotics).

2. **Minimum Intelligent Signal Test**: Only binary responses (true/false or yes/no) are permitted, in order to focus only on the capacity for thought.

Human behavior   Intelligent behavior

Unintelligent human behavior | Turing test | Intelligent behavior humans don't do
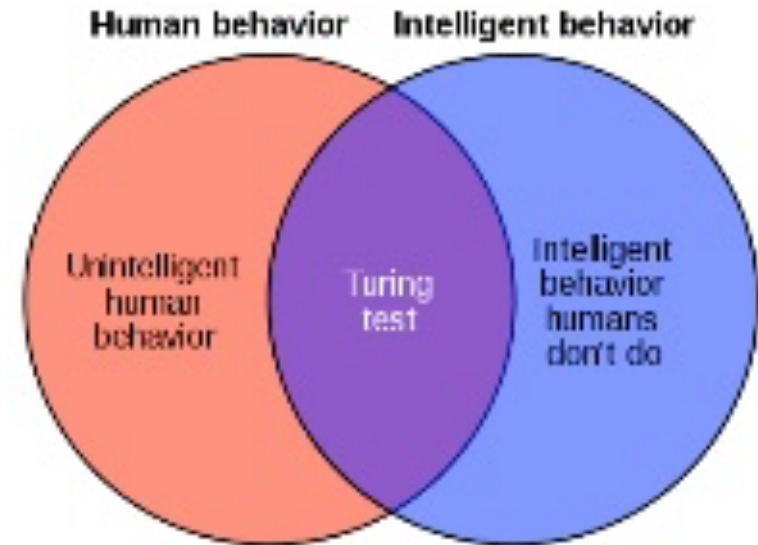
MiFID II and beyond…
Who are the new Moses, writing the Tables of Robotic Laws?

Human, Robot & Animal Rights

—

World Robot Declaration
International Robot Fair (Fukuoka, Japan), 2004

Expectations for Next-Generation Robots

1. Next-generation robots will be partners that coexist with human beings.
2. Next-generation robots will assist human beings both physically and psychologically.
3. Next-generation robots will contribute to the realization of a safe and peaceful society.

Toward the Creation of New Markets through Next-Generation Robots

1. Resolution of technical issues through the effective use of Special Zones for Robot Development and Test
2. Promotion of public acceptability of robots through the establishment of standards and upgrading of the environment
3. Stimulation of adoption through promotion of introduction of robots by public organizations
4. Dissemination of new technologies related to robots
5. Promotion of the development of robot technology by small enterprises, and their entry into the robot business. The government and academia shall provide active support for such efforts.

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Protection is no longer enough. We need Market Governance Towards "Data-driven Investor Empowerment"…

In the new Algorithmic Markets, investors don't need mere "protection"…

Independent Advisors become drivers for market self-regulation, new subjects of **demand-side governance**

From a zero-sum game with asset management distribution networks, to a positive-sum game with markets, creating **demand-side positive externalities**, investor **welfare** and ultimately, **public goods**.

A new business model for financial advisory? Independent Advisors shall become "Investor Data Brokers"

1. **Open Platform for Investor Data** with ad-hoc licensing to third-parties for demand-side efficiencies

2. **Players in the Marketplaces of Data-derivatives** (for collective investments and advocacy, cybercurrencies, etc.)

3. **Contributors ot a new Chamber of Automatic Arbitration** (through smart contracts) for investor protection

Data Brokers

Keeping Track of the People Keeping Track of You
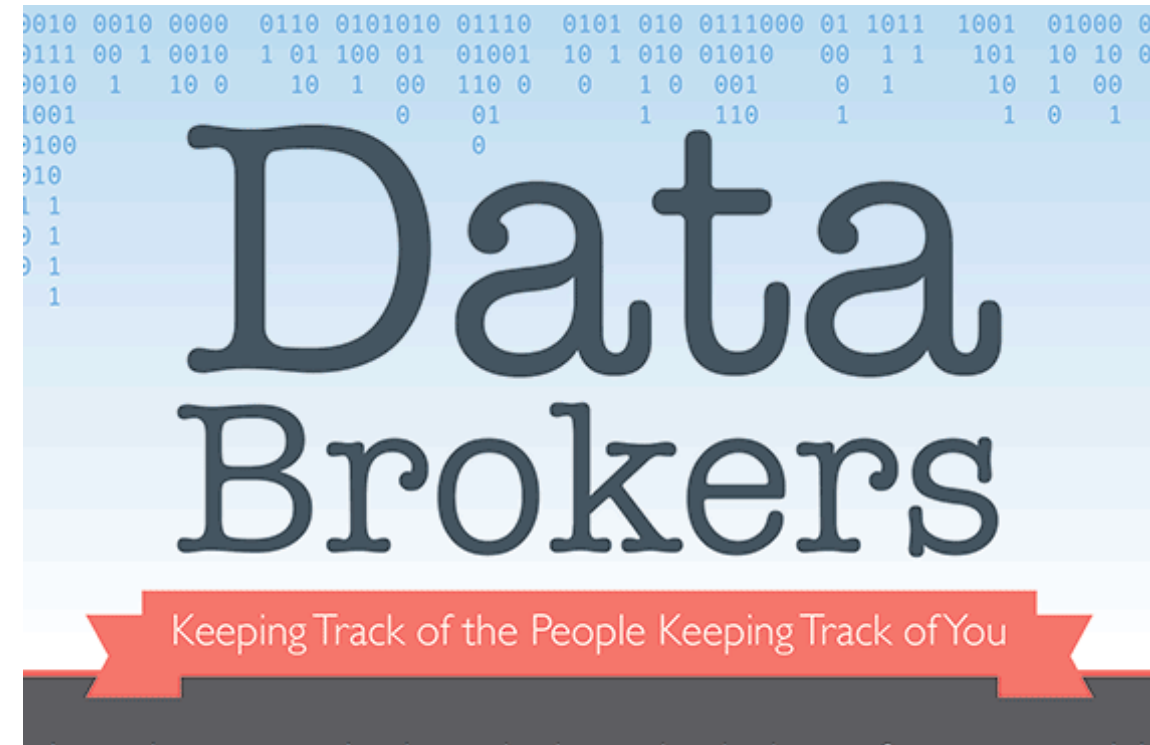
Thank you!

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