

Governance and Enforcement through Technology

The Case of RegTech

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RegTech (short for “regulatory technology”) is the use of technologies by the financial regulators and the regulated industries to solve their compliance tasks effectively and efficiently.

RegTech Startups: machine learning and robotics, cryptography, biometrics, distributed ledgers, and shared utilities.



Part I : ORIGIN OF REGTECH

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ORIGIN OF REGTECH: Global Financial Regulators.

Transgovernmental activity - “direct interactions among sub-units of different governments that are not controlled or closely guided by the policies of...those governments.”

*Robert Keohane & Joseph Nye,
“Transgovernmental Relations and International
Organizations” (1974) 27:1 World Politics 39 at
43.*

Transgovernmental Networks of Cooperation: An Overview.

The Basel Committee on Banking Supervision.

- Accords on capital adequacy Basel I, II and, most recently, Basel III
- Not legally binding

The Financial Stability Board.

- Key attributes of effective resolution regimes for financial institutions
- Not legally binding

The Financial Action Task Force.

- International Standards on Combating Money Laundering and the Financing of Terrorism & Proliferation
- Not legally binding

Common Features of Transgovernmental Networks.

Membership

- representatives of regulators

Constitution

- less specific, detailed, and constraining, than treaties

Enforcement of Decisions

- cannot coerce their members

Decision-making Process

- ambiguity

Monitoring, Reporting, and Blocking of Transactions.

Financial institutions have an obligation to conduct Customer Due Diligence (“CDD”) when:

- (i) establishing business relations;
- (ii) carrying out occasional transactions: (i) above the applicable designated threshold (USD/EUR 15,000); or ...
- (iii) there is a **suspicion of money laundering or terrorist financing**; or
- (iv) the **financial institution has doubts** about the veracity or adequacy of previously obtained customer identification data.

The Financial Action Task Force, *International Standards on Combating Money Laundering and the Financing of Terrorism & Proliferation: the FATF Recommendations (2012)* , Recommendation 10.

Traditional Problem

Sentiment Analysis.

- Vague

Exercise in empirical learning:

- Location of transaction.
- Time of day.
- Intervals between transactions.
- ETC...

Monitoring, Reporting, and Blocking of Transactions.

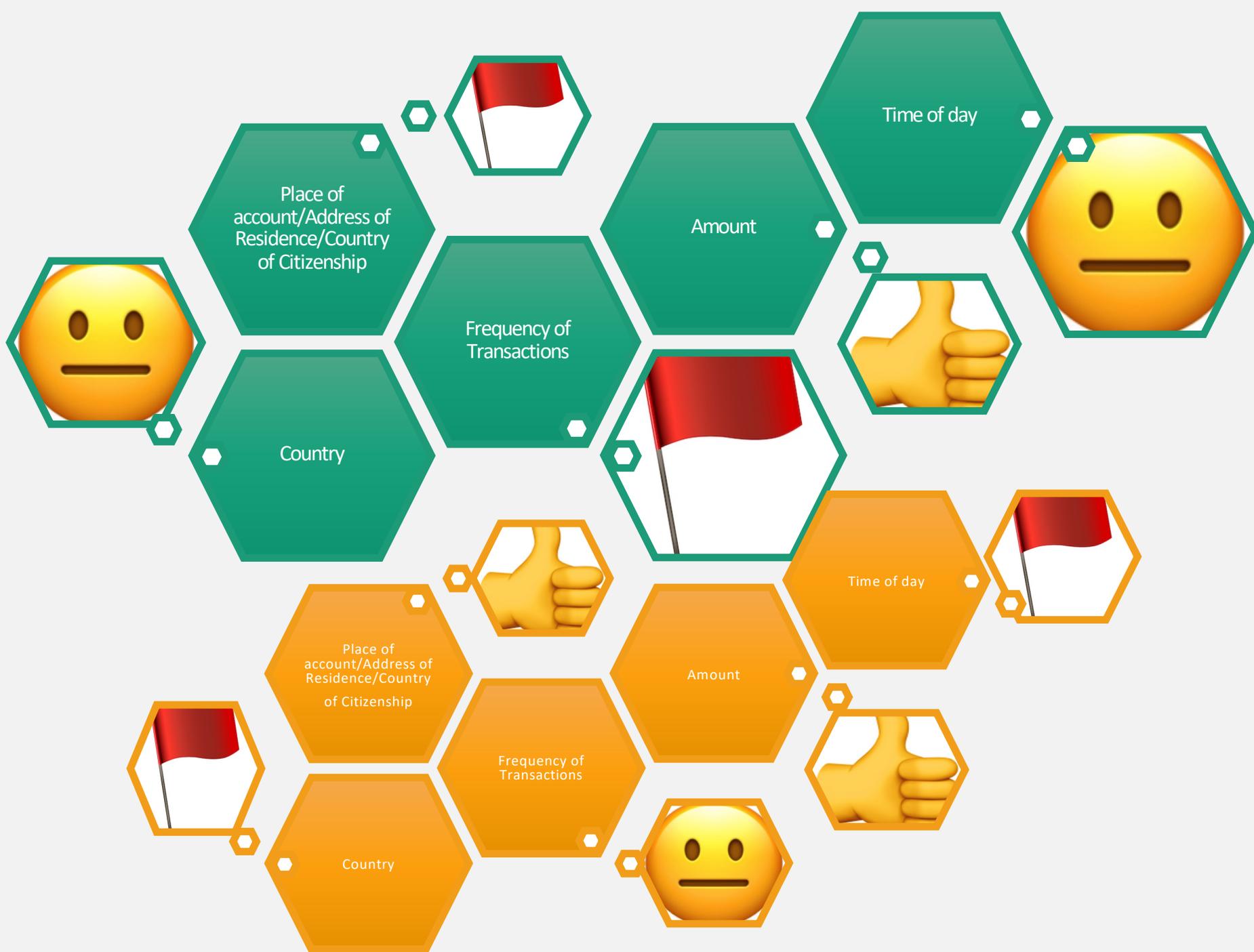
Instructional algorithm is a sequence of precise directions telling a computer how to perform a task.

“[T]he data goes into the computer, the algorithm does what it will with it, and out comes the result.”

Pedro Domingos, *The Master Algorithm: How the Quest for the Ultimate Learning Machine Will Remake Our World* (New York: Basic Books, 2015) at 1.

Instructional Algorithm

Rule A	Country	
Rule B	Amount	
Rule C	Frequency of Transactions	



Monitoring, Reporting, and Blocking of Transactions.

- Machine learning algorithms look for correlations between the inputted data and the inputted desired outcome and make a decision.
- “[I]n goes the data and the desired result and out comes the algorithm that turns one into the other.”

Pedro Domingos, *The Master Algorithm: How the Quest for the Ultimate Learning Machine Will Remake Our World* (New York: Basic Books, 2015) at 6

- AI is trained “by recursively evaluating the output of each algorithm against a desired result, allowing the machine to learn by making its own connections with the available data.”

Kevin Petrasic, Benjamin Saul & Matthew Bornfreund, “The Emergence of AI RegTech Solutions for AML and Sanctions Compliance”, (25 April 2017)

Instructional Algorithms

Require developers to establish rules that identify potentially criminal transactions.

An algorithm can:

Flag cash transactions over a certain currency amount;

Block transactions to certain countries;

Use customer data to select accounts for additional monitoring;

Categorize merchant accounts based on prior transactions.

Machine Learning Algorithms

Do not require developers to establish rules that identify potentially criminal transactions.

The system is trained to identify transactions by analyzing the following information:

Where a customer opens an account relative to their home address;

What time of day an account was opened;

Duration between transactions;

Whether a customer uses a mobile telephone.

Blockchain and Bitcoin Monitoring.

Blockchains are distributed ledgers that can securely record transactions between parties and that can be programmed to trigger transactions automatically, provided that certain preliminary conditions are successfully met.

Marco Iansiti & Karim Lakhani, “The Truth about Blockchain” (2017) Harv Bus Rev, online: <https://hbr.org/2017/01/the-truth-about-blockchain>.

Blockchain and Bitcoin Monitoring.

Bitcoin is the first decentralized virtual cryptocurrency that is available to everyone who can download the open-source software to send, receive, and store digital coins.

Michael Sherlock, “Bitcoin: The Case against Strict Regulation” (2017) 36 *Review of Banking and Financial Law* 975 at 979–980.

Each member of the bitcoin network has a unique account and “a chain of digital signatures” defines the holder of the coin.

Satoshi Nakamoto, “Bitcoin: A Peer-to-Peer Electronic Cash System”, online: *Bitcoin* <<https://bitcoin.org/bitcoin.pdf>> at 2.

Risk Data Aggregation and Management, Modeling, and Stress Testing.

The prudential approach to risk management.



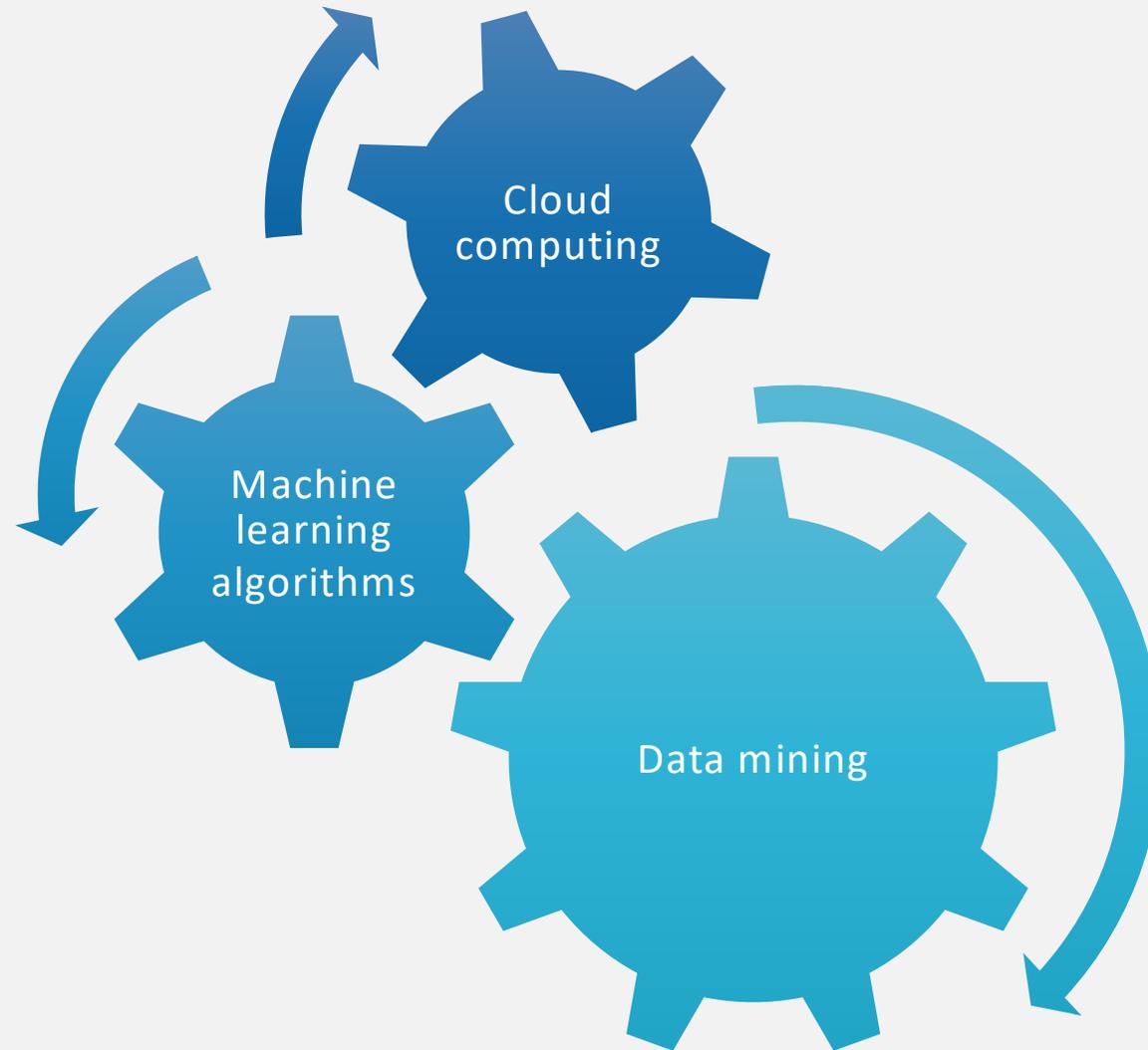
The Basel Committee's "Standards Supervisory Framework for Measuring and Controlling Large Exposures" instruct all internationally active banks to evaluate and control liabilities to their counterparties "across their books and operations."



Recovery and resolution planning regime under the FSB's "Key Attributes of Effective Resolution" require certain financial institutions to report their "main counterparty exposures and institutional structure."



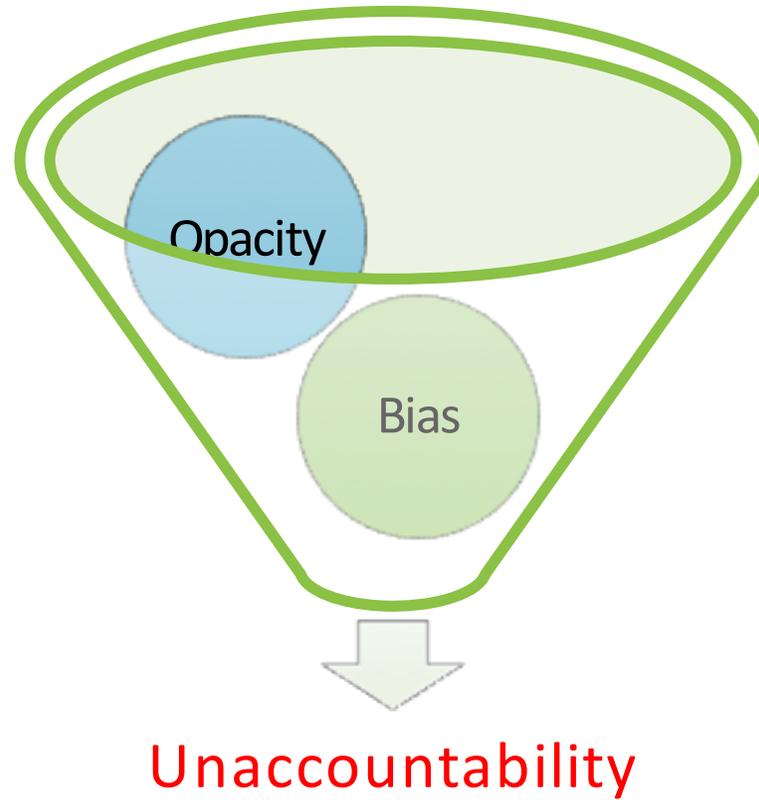
These global requirements correspond to the provisions of one of the most significant laws adopted following the GFC 2008 - the US Dodd-Frank Act of 2010.



Criticism of Technology.

- Procedural fairness v. Efficiency
- Language of formulas v. Legal language
- Code is law v. Code is lawless

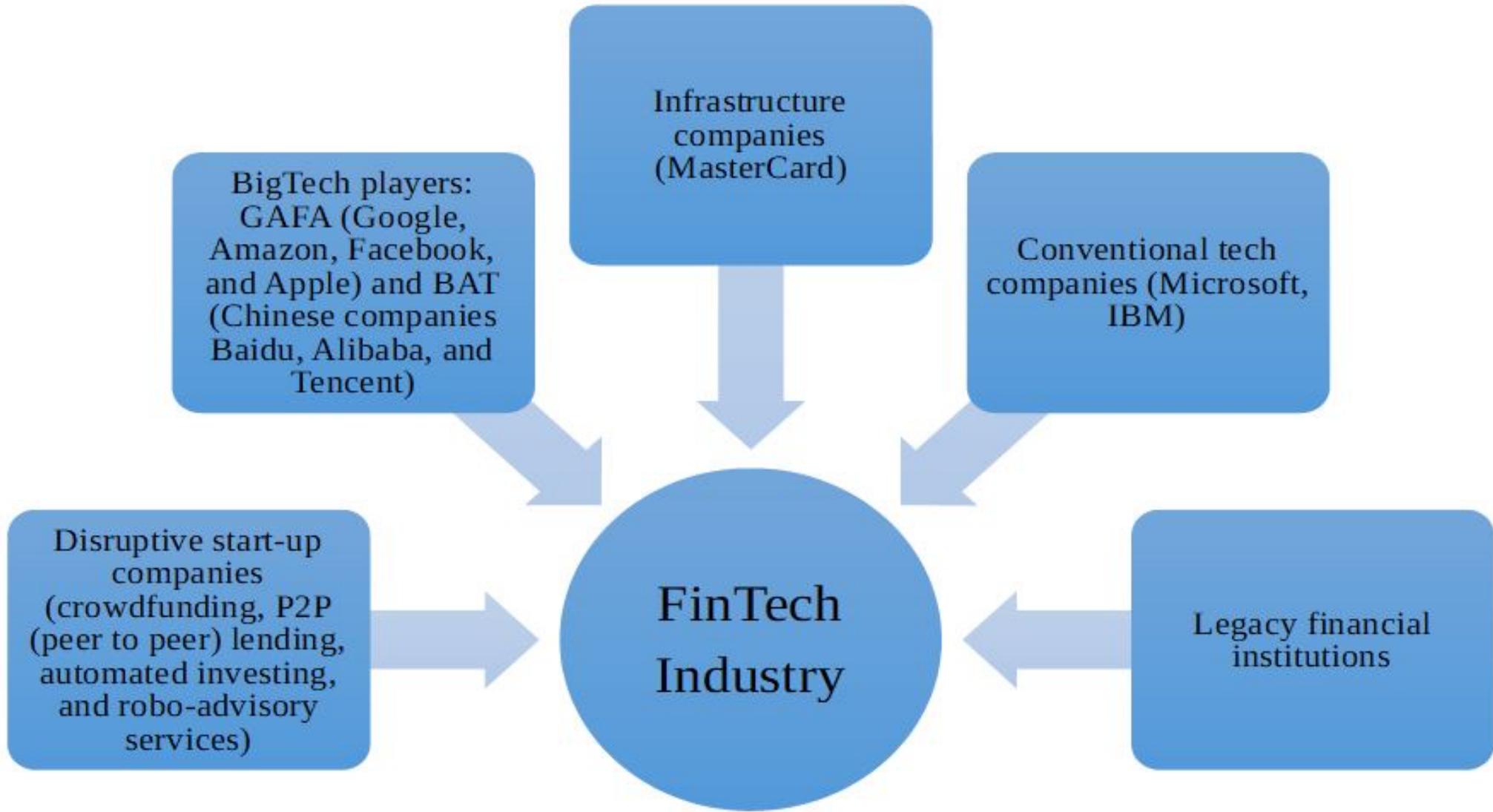
Jack Balkin, “The Path of Robotics Law”
(2015) 6 The Circuit 45 at 52.



Criticism of Technology.



MY VIRTUAL ASSISTANT AND MY
ROBOT-CLEANER STOLE ALL MY
CRYPTO-CURRENCY AND ELOPED
IN MY SELF-DRIVING CAR.



THE EXPANSION OF TECHNOLOGY

Regulatory Sandbox

- ***Tailored Authorizations.***
- ***Legal Guidance and Statutory Interpretations.***
- ***Waivers.***
- ***No Enforcement Action Letters.***

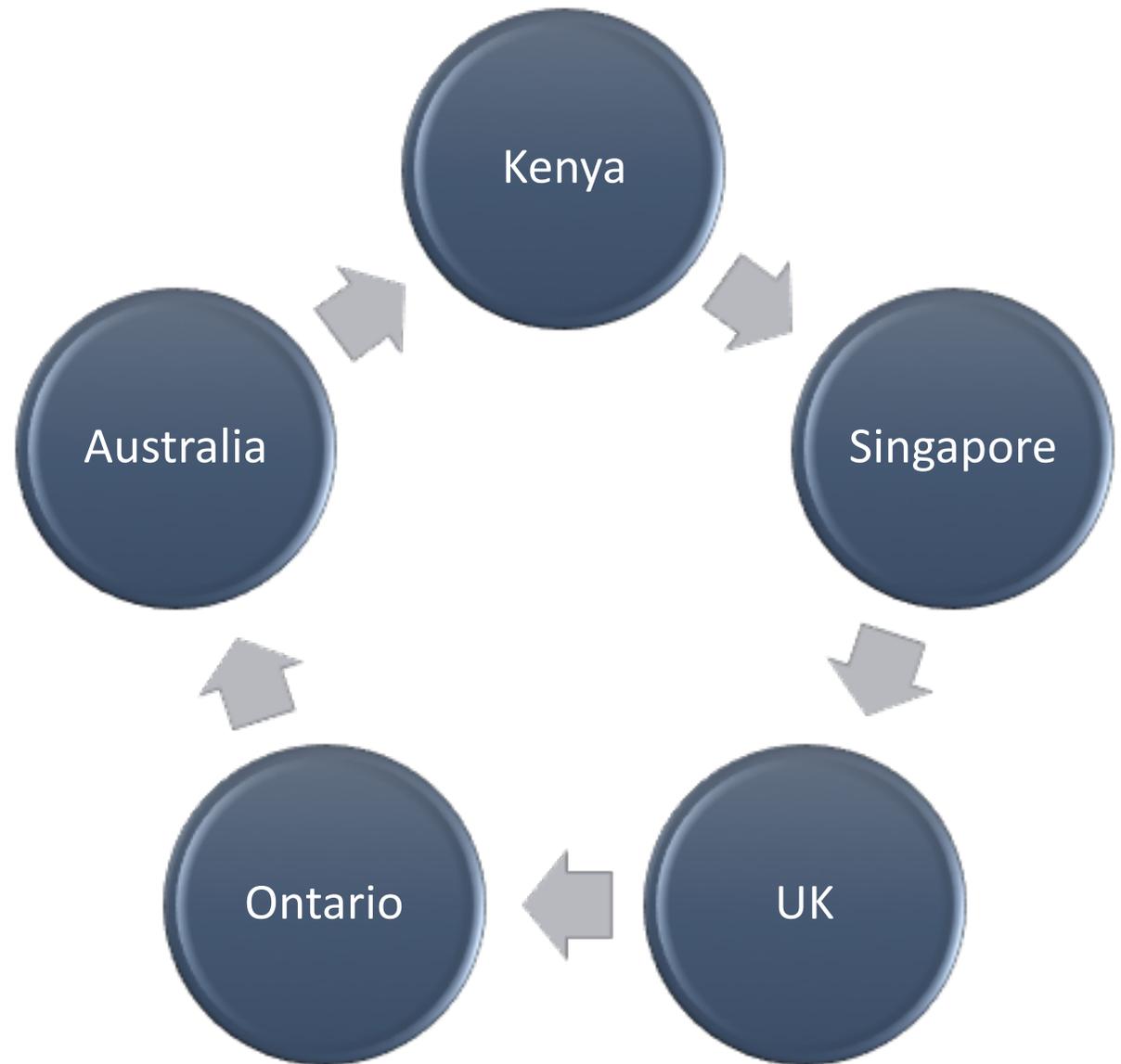
Regulatory Sandbox

Blockchain

Artificial Intelligence

- impact a person's decision about applying for a loan or a mortgage
- give investment advice
- supply market researchers with purchasing profiles of individuals

Consumer FinTech and Transgovernmentalism



RETHINKING REGTECH, CONSUMER FINTECH, AND ALGORITHMS.

Globalization: the process of intensification of global interconnectedness, in which people, capital, technology, and ideas transcend boundaries with increased speed and frequency.

The legal authority exercised by distributed, interconnected, and conflicting normative communities suggests that rule-making and governance activities are no longer “restricted to... merely national and international (i.e. inter-state) provenance.”

Neil Walker, *Intimations of Global Law* (Cambridge, UK: Cambridge University Press, 2014) at 13–14.

Global Law

Indifference to form
of rules

Indifference to
sources of rules

APPLICATION

Global Administrative Law

The Top Down Approach

- Accountability to the regime
- Procedure to promote participation and input

The Bottom Up Approach

The Top Down Approach : Accountability to the Regime.

The Basel Committee engages in “monitoring the implementation of BCBS standards in member countries and beyond with the purpose of ensuring their timely, consistent and effective implementation and contributing to a ‘level playing field’ among internationally-active banks.”

The Basel Committee on Banking Supervision, *The Basel Committee Charter* (2016), s 2(e).

The Financial Stability Board “promote[s] member jurisdictions’ implementation of agreed commitments, standards and policy recommendations through monitoring of implementation, peer review and disclosure.”

The Financial Stability Board, *The Financial Stability Board Charter* (2012), s 2(i).

The Top Down Approach : Accountability to the Regime.

“Sound Practices: Implications of fintech developments for banks and bank supervisors” the Basel Committee encourages financial institutions and domestic regulators to implement RegTech.

The Committee’s sound practices promote consistency between distinct regulatory approaches to regulatory supervision and create a basis for a more profound regulatory cooperation.

The Basel Committee on Banking Supervision, *The Basel Committee Charter* (2016), s 14.

The Top Down Approach: Procedures to Promote Opportunities for Participation and Input.

Participatory Policies.

Financial Stability Board has recently held public consultations on the proposal for guidance on central counterparties resolution and resolution planning.

The Basel Committee's constitutional document indicates that input from all relevant stakeholders is compulsory in the proceedings for the adoption of standards.

The Top Down Approach: Limitations.

Epistemic communities, formed by “like-minded professionals, usually self-recruited around some paradigm linking their lore to some aspect of a problematique.” Peter Haas & Ernst Haas, “Learning to Learn: Improving International Governance” (1995) 1:3 Global Governance 255 at 260.



Technocorporatism – the convergence of technical expertise and political authority

The Top Down Approach: Procedures to Promote Opportunities for Participation and Input.

Cross-institutional Review

Human-rights rhetoric

Structural and procedural fluidity of transgovernmental networks

The Bottom Up Approach: *Ex-ante* Review

The obligation of domestic regulators to solicit parliamentary review and public input (notice and comment procedure) about the substance of the proposed measures.



Public participation can be sought prior to transgovernmental meetings and afterwards, but before the domestic implementation of the decisions adopted at the meetings.

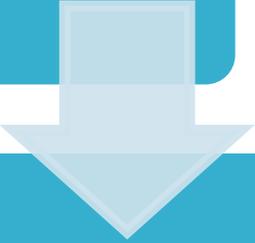
The Bottom Up Approach: Limitations

“While the FSA’s [UK’s Financial Service Authority, replaced in 2013 by the FCA] practice of putting up new regulation for public comments... was considered an efficient and market-friendly way of supervision, it seems that in some instances it had been too easy to convince the FSA that little or no regulation would be better to defend the competitiveness of London’s financial market.”

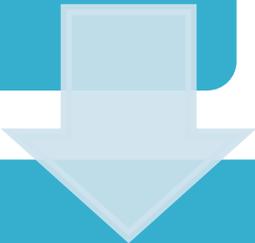
The International Bar Association’s Task Force on the Financial Crisis, at 9–10.

The Bottom Up Approach: Judicial Review

Domestic courts exercise their jurisdiction over the decisions made on supranational levels.



This form of review is triggered when individuals negatively affected by the global rules bring actions in domestic courts.



Yassin Abdullah Kadi v Council of the European Union and Commission of the European Communities, T-315/01, [2005] ECR II-3649.

Right to an Explanation

1. Investment firms which execute transactions in financial instruments shall report complete and accurate details of such transactions to the competent authority as quickly as possible, and no later than the close of the following working day.

...

3. The reports shall, in particular, include details of the names and numbers of the financial instruments bought or sold, the quantity, the dates and times of execution, the transaction prices, a designation to identify the clients on whose behalf the investment firm has executed that transaction, a designation to *identify the persons and the computer algorithms within the investment firm responsible for the investment decision and the execution of the transaction.*

Regulation (EU) of the European Parliament and of the Council 600/2014 of 15 May 2014 on markets in financial instruments and amending Regulation (EU) No 648/2012, [2014] OJ, L 173/84, art 26 [emphasis added].

What Does a Right to an Explanation Really Mean?

explanation of the **functionality** of automated decision-making systems

v

explanation of the **rationale and circumstances** of specific decisions

Limits of a Right to an Explanation

Practical

- Machine learning algorithms generate correlations, not explanations.
- Correlation is not causation.

Legal

- Reasonability standard?

Enforcement

- IP Law.

Good Tweet

- Length
- Word “never”
- Prediction of the features of a good tweet
- Sendhil Mullainathan:
Machine Intelligence and
Public Policy



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