

Interdisciplinary Sovereign Debt Research and
Management Conference
DebtCon 2



**Technology and the Management of
Sovereign Debt – The Real Potential
of RegTech**

October 5-6, 2017

The Graduate Institute of International and
Development Studies, Geneva, Switzerland

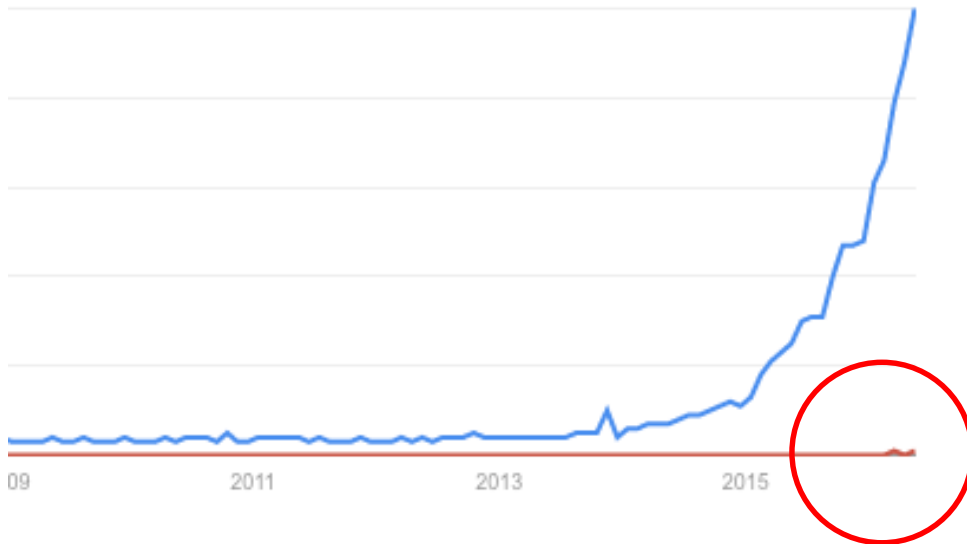
Ross P Buckley

**King & Wood Mallesons Professor of
International Finance Law, UNSW Sydney**

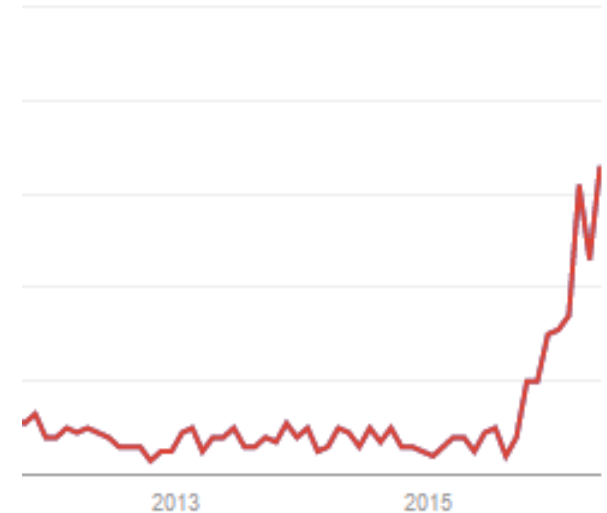
Trend

The use of the term, RegTech, has been growing very rapidly.

FinTech Vs RegTech



RegTech



In The News

IBM Buying Promontory Clinches It: Regtech Is Real

By Penny Crosman
September 29, 2016

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IBM's deal to buy Promontory Financial Group portends a dramatic change in the roles computers and humans play in regulatory compliance — and perhaps banking generally.

If the deal announced Thursday goes through, the 600 consultants at Promontory will have the task of teaching Watson, IBM's massive artificial intelligence engine, how to handle risk management and compliance chores for financial services firms. Such automation may not make bank compliance officers obsolete, but it could mean that far fewer of them will be needed in the future, and that their time will be devoted to higher-level tasks.

"I immediately thought of all the lawyers and former government regulators that work at Promontory being replaced by computers," said Ryan Gilbert, partner at Propel Venture Partners. "If truly the purpose of this acquisition is to take the human knowledge and effectively store it in AI or Watson, it will have a huge effect on this industry."



"Financial services compliance has reached peak human conditions — you can't just throw bodies at the problems," said one analyst. "This is a tremendous market for IBM to get into." IMAGE: BLOOMBERG NEWS

RELATED
IBM Shakes Up AI Race for Banking by B Promontory

You've Heard of Fintech, Get Ready for 'Regtech'

How Bots Can Connect Banks and Miller



Fintech + Add to myFT

Market grows for 'regtech', or AI for regulation

Artificial intelligence and biometrics help banks comply with rules



Trader on the floor of the New York Stock Exchange © Getty

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OCTOBER 14, 2016 by: **Martin Arnold**

Hedge fund managers beware, someone is watching you. Or rather, something is watching you. A new artificial intelligence system can monitor traders, learn their behaviour patterns and raise the alarm when they do something out of character.

Sample the FT's top stories for a week

You select the topic, we deliver the news.

Select topic

For example, a trader who has avoided securities for a long time after suffering on them suddenly dives back into a position. This triggers an alarm in the monitoring system and sends an alert to the hedge fund's compliance team.

From The Markets

Thomson Reuters Acquires Clarient, Avox

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NEW YORK/LONDON/SINGAPORE – Thomson Reuters has signed definitive agreements to acquire Clarient Global LLC and Avox Limited. Clarient is a leading global Know Your Customer ("KYC") and client reference data platform owned and used by the Depository Trust & Clearing Corporation ("DTCC"), Barclays, Credit Suisse, Goldman Sachs, J.P. Morgan Chase & Co., and many other financial institutions.

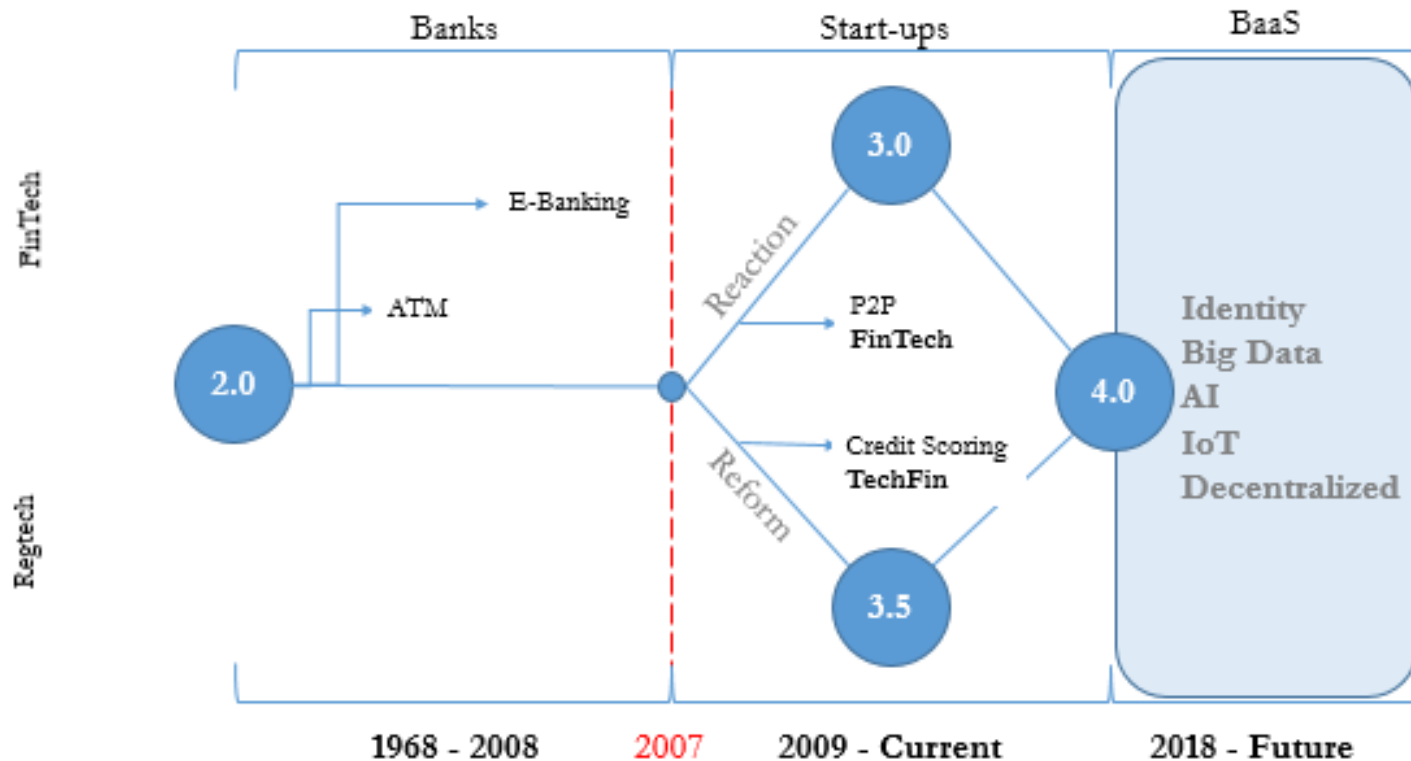
Definition of RegTech

Financial Conduct Authority:

“RegTech is a **sub-set of FinTech** that focuses on technologies that may facilitate the delivery of regulatory requirements more efficiently and effectively than existing capabilities”

The Evolution of FinTech:

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2676553



Timeline: Shorter Cycle

FinTech 1.0:
100 years

FinTech 2.0:
40 years

FinTech 3.0:
10 years

RegTech Sectors:

FINANCE

HEALTH CARE

MANUFACTURING

RENEWABLES

AGRICULTURE

.....

Differences

FinTech:

**Spurred on by the 2008
Crisis?**

RegTech:

**Is today largely a
response to 2008-
initiated changes, but ...
could prevent the next
crisis?**

Rise of RegTech

Has emerged as a result of **top-down institutional demand**

- RegTech's growth is a response to:
 - massively increased costs of compliance
 - post-crisis regulatory changes requiring massive additional data reporting and disclosure
 - data science developments
 - regulators' efforts to enhance efficiency of supervisory tools

Evolution of RegTech

1987 - 2008

2008 – Present

Looking Forward

RegTech 1.0

- Analysing exchange-based activities
- Quantitative risk management / Basel II



RegTech 2.0

- 2 stages:
 1. facilitate compliance
 2. improve supervision and regulation



RegTech 3.0

- From KYC to KYD
- RegTech to reconceptualize finance and financial regulation

The financial system is on the edge of moving from being based on Know-Your-Customer (KYC) principles to a Know-Your-Data (KYD) approach.

Compliance Costs

Reliance on compliance officers rather than technology
diverts capital away from profitable activities



Invested **US\$946M** in meeting new regulatory demands (2014) – with **US\$473M** being **permanent cost**



Hired **13,000** employees at cost of **US\$2B** (2012-2014) and spent **US\$600M** on regulatory and control technology (2014)



Invested **1.3B EUR** in meeting new regulatory requirements (2014)

RegTech Encompasses Industry And Regulators

Financial institutions and industry

- Major drivers of RegTech development
- Demand efficient tools to deal with regulatory and compliance demands
- Global firms developing centralized risk management

Regulators

- Lag in regulator adoption relative to private sector
- Yet need to develop systems to deal with rivers of new data and cybersecurity

RegTech for Regulators

Big Data

- Need to develop IT capabilities and systems to monitor and analyze new regulatory datasets
- Opportunity for collaboration between regulators and academia

Cybersecurity

- Digital transformation of finance industry has made it more vulnerable to attack, theft and fraud
- Data abundance may not create the right incentive for firms to enhance their cybersecurity
- Clear example of how FinTech demands RegTech

Macroprudential policy

- Seeks to use massive amounts of data to identify patterns and reduce severity of financial cycle
- Greatest potential for RegTech – to analyse rivers of data in near to real time

RegTech Benefits

For businesses:

- massive **cost savings** for established institutions
- great **opportunities** for emerging FinTech start-ups, IT and advisory firms
- Ability to liberate excess regulatory capital

- **For regulators:**

- more **granular and effective supervision** of markets and market participants
 - Prospect of **continuous monitoring** providing **close to real-time insights**
 - Ability to identify problems as they are developing
 - Reduced time to investigate firms for compliance breaches
- the means to move towards a **proportionate risk-based approach**
- reduced risk of **regulatory capture / Goodhart's law**

Needs to be a **coordinated approach** by regulators to support RegTech -- sandboxes and clinical trials are likely to be the best way to pilot RegTech development

From KYC to KYD (cont.)

Shift

Reg 1.0

Know Your Customer:

- ✓ Consumer Protection
- ✓ Prudential Regulation
- ✓ Financial Stability
- ✓ Prevent Bad Behaviors
- ✓ Re-Active
- ✓ Reporting (Push) Compliance
- ✓ Licenses = Barriers

VS

Reg 2.0

Know Your Data:

- ✓ Data Privacy
- ✓ Algorithm Sandbox
- ✓ Financial Networks
- ✓ Promote good behaviors
- ✓ Pro – Active
- ✓ API (Pull) Compliance
- ✓ Deep Learning = Barriers

Regulatory Principle

Moving Towards A Paradigm Shift

Over the past 50 years the application of technology within regulation has changed dramatically. The transformative potential of technology will only be fully captured by a **new and different regulatory framework**.

We argue RegTech:

- Cannot be seen as a mere subset of FinTech – much broader than finance with potential for application in a wide range of contexts,
- Is more than an efficiency tool
- Will play a critical role in the impending paradigm shift in regulation – the move from KYC to KYD
- Will be critical in enabling regulators to utilise the rivers of information they are currently receiving to inform and underpin near-to-real-time supervision.

A FR 2052a Form - Known colloquially as a 5G

- It is 64 pp long, and the time estimate as to how long completing the form should take is 220 hours (including maintaining data in required form).
- A G-SIB (defined as “U.S. firms with total consolidated assets \geq \$700 billion or with \geq \$10 trillion in assets under custody”)
- G-SIBs have to lodge this daily! At T+2.
- Smaller institutions have to lodge it monthly; at T+15.
- You can find it at:

<https://www.federalreserve.gov/apps/reportforms/reportdetail.aspx?sOoYJ+5BzDbpqbkIRe3/1zdGfyNn/SeV>

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Financial Conduct Authority

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Bank of England

“Regulatory Technology allows for a **real time** and **proportionate** regulation that **identifies risk** and enable more **efficient compliance**”

Andy Haldane's Vision

- *“I have a dream. It is futuristic, but realistic. It involves a Star Trek chair and a bank of monitors. It would involve tracking the global flow of funds in close to real time (from a Star Trek chair using a bank of monitors), in much the same way as happens with global weather systems and global internet traffic. Its centerpiece would be a global map of financial flows, charting spill-overs and correlations.”*

Andy Haldane, Chief Economist, Bank of England (2014)

Q&A

Contact Details

Ross Buckley:

ross.buckley@unsw.edu.au

Douglas Arner:

douglas.arner@hku.hk

Janos Barberis:

janos@fintech.hk

*FinTech, RegTech and the
Reconceptualization of Financial
Regulation*

SSRN: <http://ssrn.com/abstract=2847806>

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Australian Research Council Linkage Grant Scheme: Regulating a Revolution: A New Regulatory Model for Digital Finance.



Thank you.

