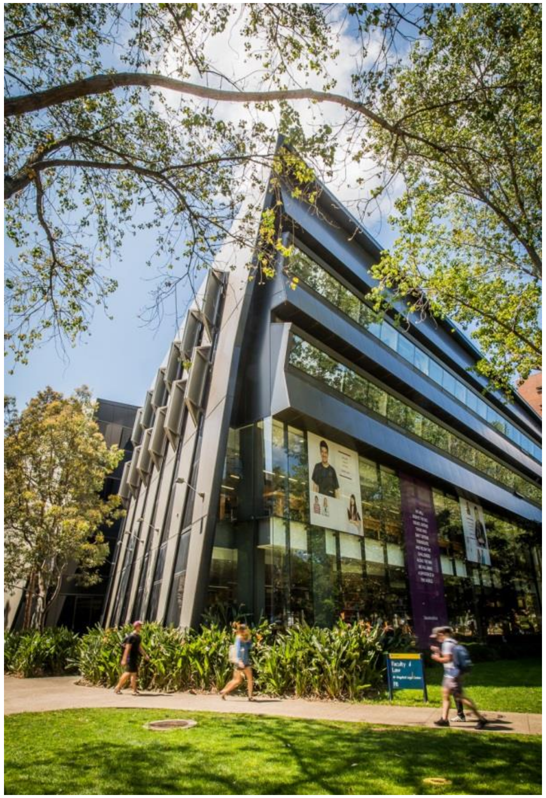
Columbia DFS Observatory Webinar

The Real Potential of RegTech – Today and Tomorrow



October 26, 2017

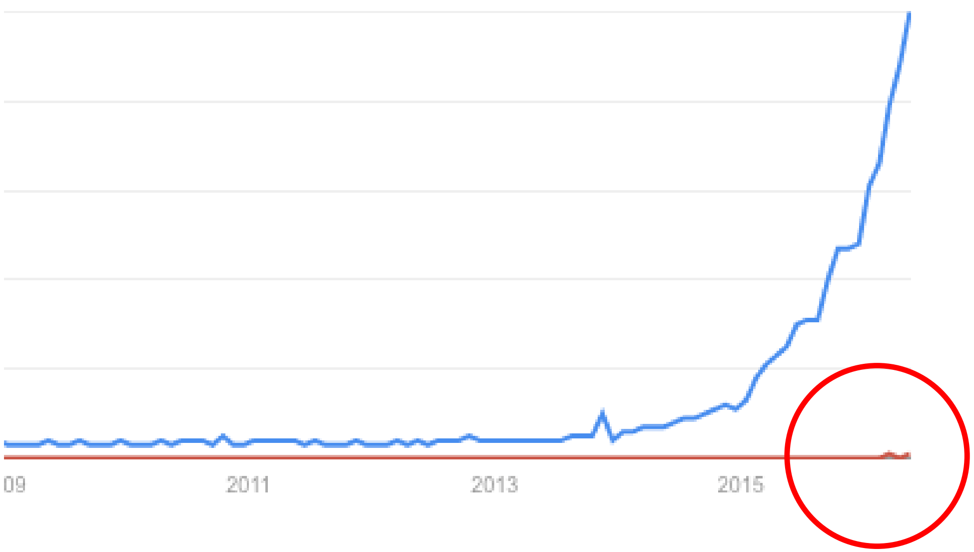
Ross P Buckley

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

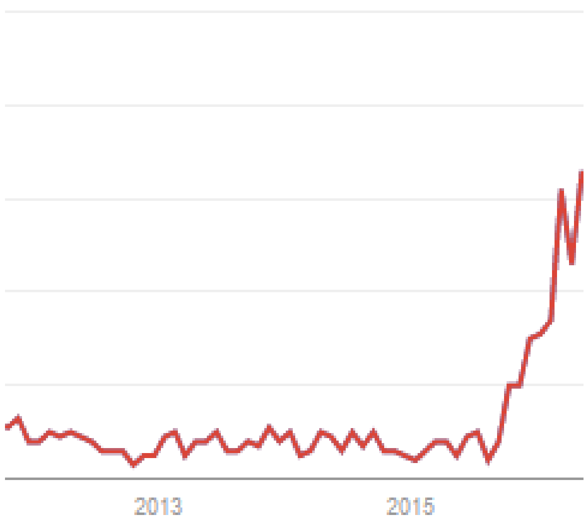
Trend

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 pe human conditions — you can't just throw bodie 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 Millen

What Will Banking L Like in Five Years?

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

OCTOBER 14, 2016 by: Martin Arnold

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

Sample the FT's top stories for a week

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Select topic

For example, a trader who has avoid securities for a long time after suffe on them suddenly dives back into a position. This triggers an alarm in t monitoring system and sends an ale 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.

Evolution

FinTech is often seen today as the new marriage of financial services and information technology. However, this interlinkage has a long history and has evolved over three distinct time periods.

Date	**1866 - 1987**	**1987 - 2008**	**2009 - Current**	
Era	FinTech **1.0**	FinTech **2.0**	FinTech **3.0**	FinTech **3.5**
Geography	Developed World	Global	Developed World	Developing World
Key Players	Infrastructure	Banks	Start-ups	Telcos
Shift Origin	Globalization	Technology	2008 Financial Crisis	Market Reform

Timeline: Shorter Cycle

FinTech 1.0:
100 years

FinTech 2.0:
40 years

FinTech 3.0:
10 years

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"

We take a different view, a broader view, of the potential of RegTech for financial markets.

We also don't accept it is a sub-set of FinTech – we see it as something much broader. But more on this later.

Evolution of RegTech

1987 - 2008	2008 – Present	Looking Forward
RegTech 1.0	**RegTech 2.0**	**RegTech 3.0**
• Analysing exchange-based activities • Quantitative risk management / Basel II	• 2 stages: 1. facilitate compliance 2. improve supervision and regulation	• 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.

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** (in contrast to the bottom-up demand that has driven FinTech)

- 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

Compliance Costs

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

UBS

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

J.P.Morgan

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

Deutsche Bank

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

RegTech Sectors:

FINANCE

HEALTH CARE

MANUFACTURING

RENEWABLES

AGRICULTURE

.....

From KYC to KYD (cont.)

Shift

Regulatory Principle

Reg 1.0		Reg 2.0
Know Your Customer:		**Know Your Data:**
✓ Consumer Protection		✓ Data Privacy
✓ Prudential Regulation	VS	✓ Algorithm Sandbox
✓ Financial Stability		✓ Financial Networks
✓ Prevent Bad Behaviors		✓ Promote good behaviors
✓ Re-Active		✓ Pro – Active
✓ Reporting (Push) Compliance		✓ API (Pull) Compliance
✓ Licenses = Barriers		✓ Deep Learning = Barriers

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 ≥ $700 billion or with ≥ $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+5BzDbpqbklRe3/1zdGfyNn/SeV

Definitions 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"

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)

We see the rise of algorithmically-mediated data will so change finance, that the rise of data-driven financial services providers is going to demand RegTech. These entities, what we have termed the TechFins, are only going to be able to be regulated by RegTech applications.

The Rise of the TechFins

The entity that knows the most about you is best placed to price credit or insurance for you. Traditionally that has been your bank.

Increasingly this will not be the case unless banks change their entire relationship with data. (In this sense mandating open banking (over their objections) may save the banks lives).

- FinTech: the application of technology to facilitate the delivery of financial services – starting point is the customer (client/investor) relationship with the financial service provider
- TechFin: the application of financial services to technology – starting point is the tech and associated data
- TechFins are data-rich companies – data obtained thru selling us things (such as Amazon) or providing tech services (such as Google or Facebook or ...)

Theses

1) TechFins have their origin in BigData (“Tech”) rather than customer relationship (“Fin”). Many may well avoid financial regulation until too late. Triggers linked to taking deposits, soliciting customers or handling client funds are likely to not be triggered. Regulators may therefore be unable to a) enforce customer protection measures and b) monitor and mitigate systemic risk.
2) TechFins may compete unfairly therefore since they a) are unrestricted by risk & compliance considerations in their build-up phase, b) do not bear compliance and capital costs.
3) TechFins’ data analytics will require regulation at some stage. Perhaps “follow the data” will have to replace financial law’s “follow the money”.
4) Regulation of TechFin for now should focus on: a) information gathering, b) review of algorithms for false predictions and protected factors, and c) systemic risk prevention.
5) The regulation of TechFins, whatever role they fulfil, is going to require RegTech.

The Full Paper…

Please see our TechFin paper below for further details:

Dirk A. Zetzsche, Ross P. Buckley, Douglas W. Arner & Janos N Barberis

“From FinTech to TechFin: The Regulatory Challenges of Data-Driven Finance,” *forthcoming New York University Journal of Law and Business*, https://ssrn.com/abstract=2959925.

Q&A

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FinTech, RegTech and the Reconceptualization of Financial Regulation

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

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Thank you.