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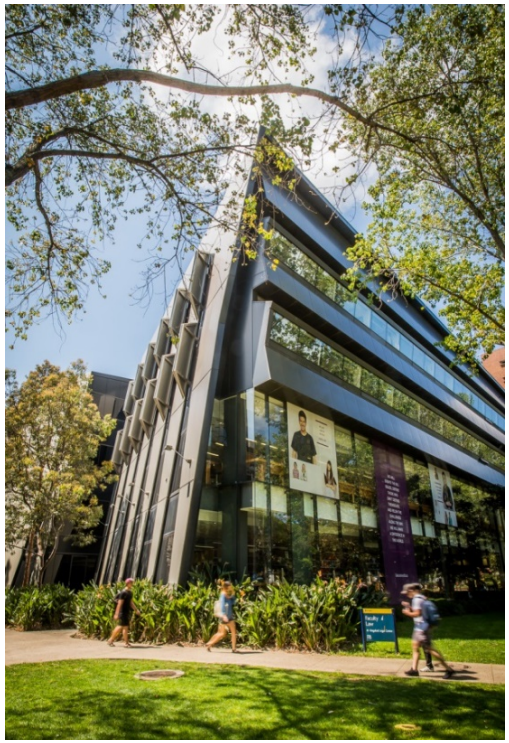

From FinTech to RegTech to TechFin:

The Transformation of Banking and Finance and Associated Regulatory Challenges

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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

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Market grows for 'regtech', or AI for reg

Artificial intelligence and biometrics help banks comply w

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.

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

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To meet complex KYC and Onboarding regulations RegTech needs to be industrial strength

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Regtech is being added to the canon of financial technology buzzwords. But what does it offer and how should the industry embrace this concept?

This increasingly common term is a subset of the fintech movement to find smarter technology solutions to solving difficult problems or tapping into great opportunities for revenue. Essentially regtech is aiming to simplify and speed up compliance and release of regulatory requirements linked to onboarding new and existing customers.

Overview & Definitions

For the past 20 years, the finance sector that has spent the most on Tech, more than defence, more than the IT sector itself.

Goldman Sachs employs more engineers than LinkedIn, Twitter or Facebook: 11,000!

Definitions:

FinTech – the application of technology to financial services (in the above sense the world's largest banks are all FinTechs, but the term often reserved for start-ups)

RegTech – the application of technology to regulation – both by banks to reduce compliance costs and by regulators to enhance regulation.

TechFin – our term – the application of financial techniques to Data – the data is typically acquired by being a Tech Company (such as Apple, Google or Baidu) or by an E-commerce Company (such as Amazon or Alibaba or potentially Woolworths or Coles).

Evolution of FinTech

The marriage of financial services and technology has evolved over three distinct time periods.

Date	**1866 - 1967**	**1967 - 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	Banks & Infrastructure	Banks	Start-ups	Banks & Telcos
Shift Origin	Globalization	Technology	2008 Financial Crisis	Market Reform

FinTech 1.0 (1866 – 1967)

In the late 19th century finance and technology combined to produce the first period of financial globalization – in the years leading up to WWI financial globalization reached levels not again seen until the lead up to 2008.

Enabled By:

- **1838**: Introduction of the telegraph
- **1866**: Laying of the first transatlantic telegraph cable

FinTech 2.0 (1967 – 2008)

New period of regulatory attention to the risks of cross-border financial interconnections and their intersection with technology. Led by traditional financial institutions

Examples:

- **1950:** Introduction of credits cards (Diner's Club) in the USA
- **1967**: Barclays deploys first Automated Teller Machine (ATM)
- **1967:** Texas Instruments develops handheld financial calculator
- **1971:** NASDAQ created, triggering electronic trading

FinTech 3.0 (2008 – Present)

Emergence of new players (*e.g. start-ups*) alongside existing large companies (*e.g. core banking vendors*).

"Silicon Valley is coming: There are hundreds of startups with a lot of brains and money working on various alternatives to traditional banking […] They are very good at reducing the "pain points" in that they can make loans in minutes, which might take banks weeks.

Jamie Dimon

CEO, JP Morgan

Examples:

- **2008**: Wealthfront is founded and provides automated investment services
- **2009**: Square is created, providing mobile payments solutions
- **2009:** Kickstarter introduced a reward-based crowdfunding platform

2008 – the game changer

The 2008 GFC had a catalysing effect on the growth of the FinTech sector due to:

- **Financing gap**: Contraction of the interbank market and increase in regulatory capital to be held against loans – less credit
- **Operational cost reduction**: Downsizing meant people looking for new ways to apply their skills
- **Public perception**: Growing public distrust of banks (67% vs 30%)
- **Technology:** Smartphone penetration increased

FinTech 3.5 (2008 – Present)

In Asia and Africa recent FinTech developments have been primarily prompted by the pursuit by the G20 and Governments of 'financial inclusion' and thus economic development:

Examples:

- **2007:** M-Pesa introduced in Kenya, by Vodafone for Safaricom
- **2010**: Alibaba introduces loans to SMEs on its e-commerce platform
- **2015:** India announces the creation 11 new payment banks (e.g. Fino PayTech)
- **2015**: MyBank and WeBank, two new Chinese private banks

The Game Changer was government policy, and the M-Pesa story from Kenya, not the GFC and global regulatory initiatives.

Regulatory Threshold

New emerging FinTech companies often have limited track records regarding their business (*e.g. risk management, liquidity and profitability*) and difficulty identifying their obligations (*e.g. applicable regulations or licences*).

For regulators, these early-stage companies represent a limited prudential & consumer risk. However, exponential company growth can create “risk blind spots”. Additionally, frequent failures or fraud can impact market or investor confidence.

Risk Blind-Spots

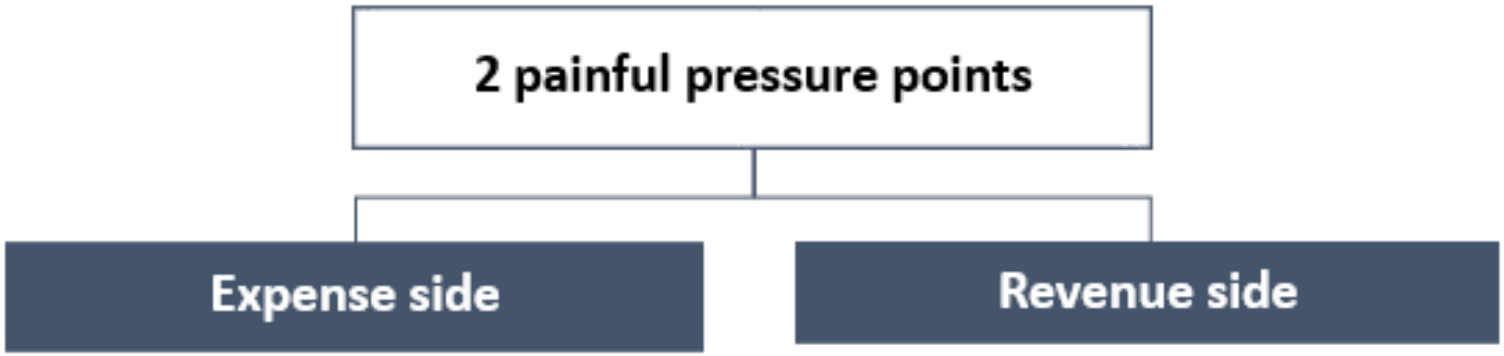
Using company size as a way to evaluate risk is not adequate, given inter-connectedness of financial markets and rapid up-take of certain financial products. Today, some small companies' path to become systemic is not linear but exponential:

- **Kenya (2008):** In three years M-pesa was being used by over 18 million customers and 43% of Kenya's GDP was flowing thru this service

- **China (2014):** Third party mobile payment market reached 1,433 trillion yuan, a +400% increase compared to 278 trillion exchanged in 2013

- **China (2014):** Yu'e Bao, a money market fund in the Ant Financial Group (Alibaba) held over US$ 90billion (*e.g. 4th largest in the world*) just 10 months after its creation

The financial services landscape



- Huge ongoing costs of compliance and regulation
- Post-GFC fines > US$200 billion

- Rising competition from FinTech companies
- US$4.7 trillion of revenue at risks from FinTech

Evolution of RegTech

1967 - 2008	2008 – Present	Future (est 2017)
RegTech 1.0	**RegTech 2.0**	**RegTech 3.0**
• Analysing exchange-based activities • Quantitative risk management / Basel II	• 2 stages involving use of technology to: 1. facilitate compliance 2. improve supervision and regulation	• From KYC to KYD • **RegTech is used to reconceptualize 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.

RegTech Benefits

For businesses:

- massive **cost savings** for established institutions
- great **opportunities** for emerging FinTech start-ups, IT and advisory firms

- **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

Reasons for RegTech

Compliance Costs in the Financial Services Industry

- Between 2012-2014 JP Morgan added **13,000 employees** in compliance
- Deutsche Bank spent an extra **US$1.8 Billion** for compliance purposes in 2014
- UBS spent an extra **US$ 950 million** on regulatory demands in 2014
- Fines and settlements increased **45x** since 2010, reaching **US$204 billion** in 2014
- For 87% of bank CEO's regulatory changes represent a disruption to their business

Both Post-GFC Regulation and FinTech demand RegTech

- Global SIFIs now have to file a 120 pg report daily, up to date as of prior business day

Regulatory Support for RegTech

- Main impetus, longer-term, for RegTech may be the regulators' ability to analyse the increased amount of data generated by the technology
- There needs to be a **coordinated approach** by regulators to support RegTech
- Regulatory sandboxes and clinical trials are likely to be the best way to pilot RegTech development -- UK FCA Project Innovate has established a framework for this, as has ASIC, HKMA, SMA, etc etc

"*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 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***

Our Eureka Moment

The next phase is **TechFin** – a word Jack Ma coined on Dec 1, 2016 but we were using 8 months earlier.

Start

Source: Study: less than 1% of the world's data is analysed, over 80% is unprotected – J. Burn-Murdoch

Transition from Banking & FinTech to TechFin

- Is the transition from Know Your Customer to Know Your Data

- TechFin is the application of financial services to a tech or data base – it means starting with data, not a KYC-type customer relationship

- TechFins are likely to take two principal forms:

  1. The TechFin serves as a conduit to a financial services company (as in Coles insurance or possible people accessing small loans thru their Facebook account). Such TechFins could become systemically significant.

  2. Data or e-commerce companies providing financial services themselves (Facebook already provides payments in the US)

Data Traps

- In the US if you buy a door stopper from Walmart your credit rating goes …
- In the US if you buy a choker chain from Walmart your credit rating goes …
- What apps know how many nights a week I sleep with my wife and how often Dirk sleeps with his wife?
- What if a stable marriage correlates with credit worthiness?
- What if one's mobile phone calling pattern correlates with credit worthiness and some groups don't call on Saturdays?
- How does the law deal with the consequences of these correlations?

The party that has the most information about you can most accurately price a loan or insurance for you

Traditionally that was your bank. Armed with their detailed questionnaire and your payment / financial history.

Today that is more likely to be Google and Amazon and Facebook and/or perhaps Coles (if you have a frequent shopper card).

This week my daughter wanted to buy a pair of spectacle frames like a good friend of hers has … This is the TechFin advantage …

The future will be data-driven financial services. Financial regulation, and judge-made law, will have to adapt.

Regulatory Challenges

A TechFin that serves as a principal conduit to one of the Big Four banks, or as a conduit to all four, could be systemically significant.

Banking regulation is often triggered by accepting deposits, or soliciting funds. TechFins may do neither, so may be outside prudential regulation for a long time.

Once TechFins directly provide financial services and challenge banks, the clash of cultures will be 'interesting'. And conventional banking will be scrambling to keep up – the informational advantages are all on the TechFin's side.

In particular, the challenges to our concepts of privacy are going to be massive. Will the current 'consent' model, expressly given by ticking a box, or implied by proceeding to use the service, be allowed to stand?

How meaningful is it to say my 20 year old daughter 'consented' to Facebook reading all her messages, when the alternative, for her, is NO FACEBOOK.

Sources –

Google: SSRN Buckley FinTech

- W Zhou, D Arner and **RP Buckley**, “Regulation of Digital Financial Services in China: Last Mover Advantage” (2015) 8 (1) *Tsinghua China Law Review* 25-62.
- DW Arner, J Barberis and **RP Buckley,** “The Evolution of FinTech: A New Post-Crisis Paradigm?”, (2016) 47 (4) *Georgetown Journal of International Law*, 1271-1319
- DW Arner, J Barberis and **RP Buckley**, “FinTech, RegTech and the Reconceptualisation of Financial Regulation”, forthcoming *Northwestern Journal of International Law and Business*, *in press*
- DA Zetzsche, **RP Buckley**, DW Arner, & JN Barberis, “From FinTech to TechFin: The Regulatory Challenges of Data-Driven Finance”, forthcoming *New York University Journal of Law & Business*, *in press*

References

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Thank you.

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