RegTech 2.0

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INTRODUCTION

Why RegTech?

RegTech was called a "buzzword within fintech" by several firms in 2015. However, it has existed as a separate, focused space since as far back as 2010. Some of the earliest RegTech startups launched are now in the process of obtaining late-stage VC rounds or existing through acquisitions. The space has clearly matured over the last couple of years and attracted a lot of attention from banks, vendors, service firms and regulators.

Why RegTech? We believe that this sub-segment of the wider fintech landscape is approaching an inflexion point with regards to how regulators, banks and startups will pursue its further development, adaptation and adoption. From 2010 to 2016, RegTech established a solid foundation within the fintech ecosystem coming up with solutions that targeted complex new regulations, litigation and regulatory remediation areas faced by banks and overall reduction of costs of compliance.

We call this phase RegTech 1.0.

RegTech 1.0

We estimate that over 300 RegTech firms were launched up till 2016. Banks, just after the economic crisis, were facing huge compliance costs, a new set of regulations, the proliferation of startups in financial services and the need to innovate quickly. Regulators were also looking for ways to support a more efficient implementation of regulations and supported the technological innovations by RegTechs.

Most RegTech firms launched in this period dealt with upcoming regulations like PSD2 (Open Banking), MIFID II, 4MLD and GDPR. The vast majority of the solutions were delivered utilising models around SaaS and Open APIs.

They also handled data in a way that was never seen before. Data collection, monitoring, analysing and reporting in the space evolved into an entirely new industry. This was primarily driven by developments in big data technologies and the wider FinTech ecosystem.

Alvarez & Marsal and Burnmark are pleased to publish this report that focuses on the emerging trends within the RegTech space.

We have looked at all the things that have worked well with RegTech in the past, as well as the challenges, and have tried to predict what could be some of the challenges and trends in the next phase of RegTech.

INTRODUCTION

The 2nd phase of RegTech

The most significant discoveries during our research phase revolved around the challenges RegTech startups from phase 1 faced in scaling up and selling into their core customer base (banks).

Most RegTech firms we surveyed were in PoC stages with banks. They were also struggling with the timescales involved in selling into a bank, and then getting the solution on-boarded. They were then finding out that selling into a different department within the same bank would be another full-fledged sales cycle.

Other challenges emerged - the difficulty in acquiring complex regulatory expertise, the flexibility to create a complete solution where the product can integrate with other RegTech solutions or legacy systems or the processes to comply with in order to deploy in a bank.

They also did not raise as much capital as other B2C fintech categories did, obtaining just over $300,000 early-stage investment from banks during 2012-2016.

RegTech 2.0

During the first phase of RegTech, startups focussed more on the technology to drive compliance use cases and were less conversant with the nuances of the regulations in a holistic manner. This lack of understanding of regulatory complexities by RegTech startups proved a significant challenge for banks wishing to work with them. RegTech firms in RegTech 2.0 are expected to collaborate more, with banks, regulators and domain experts, to demonstrate their offerings' success far more quickly.

Also, as offerings in the next phase evolve from niche propositions to broader compliance propositions, they are in far more need of active support from regulators and industry consultants.

The market of regulators and central banks around the world are also struggling with the data deluge and supervision of new entrants in the banking industry. The entire lifecycle of policy making, enforcement and supervision is ripe for disruption with the use of advanced technology. Startups would need to

be patient in handling the bureaucracy of state-run organizations and even longer sales cycles. Startups would also need to improve their knowledge of regulators' underlying objectives and demonstrate unambiguously how their solutions can help the regulators do a better job than the status quo.

Equipped with past learnings and strong support from regulators and governments across the world, RegTech 2.0 is at an inflexion point for a new era of efficient and effective compliance powered by technology.

The Approach

We have approached this report in three ways:

*   We interviewed 45+ RegTech startups to understand the challenges and opportunities they face in scaling up

*   We spoke to global banks and regulatory bodies to understand external viewpoints on what could help RegTech achieve success faster

*   We used existing knowledge with Alvarez & Marsal as well as with Burnmark on live RegTech implementations within banks

We thank all startups and banks who have contributed immensely to our study, without which the following insights would have been impossible to derive. As we look to a new era of RegTech, we hope this report will illustrate the current state and future developments of the space.

Key Highlights

The Startups
Survey findings and quotes from RegTech startups around the world

The Banks
Interview with DBS Bank
Automation of regulatory processes - a quick win for RegTechs
Interview with BBVA
Data aggregation, data management, data processing and data sharing capabilities
Financial crime fighting with machine learning and behavioural analytics
Industry utilities between banks, regulators and RegTechs

The Regulators
SupTech as a hot new space in fintech
Interview with David Lawton, A&M
Regulatory sandboxes and geographic spread
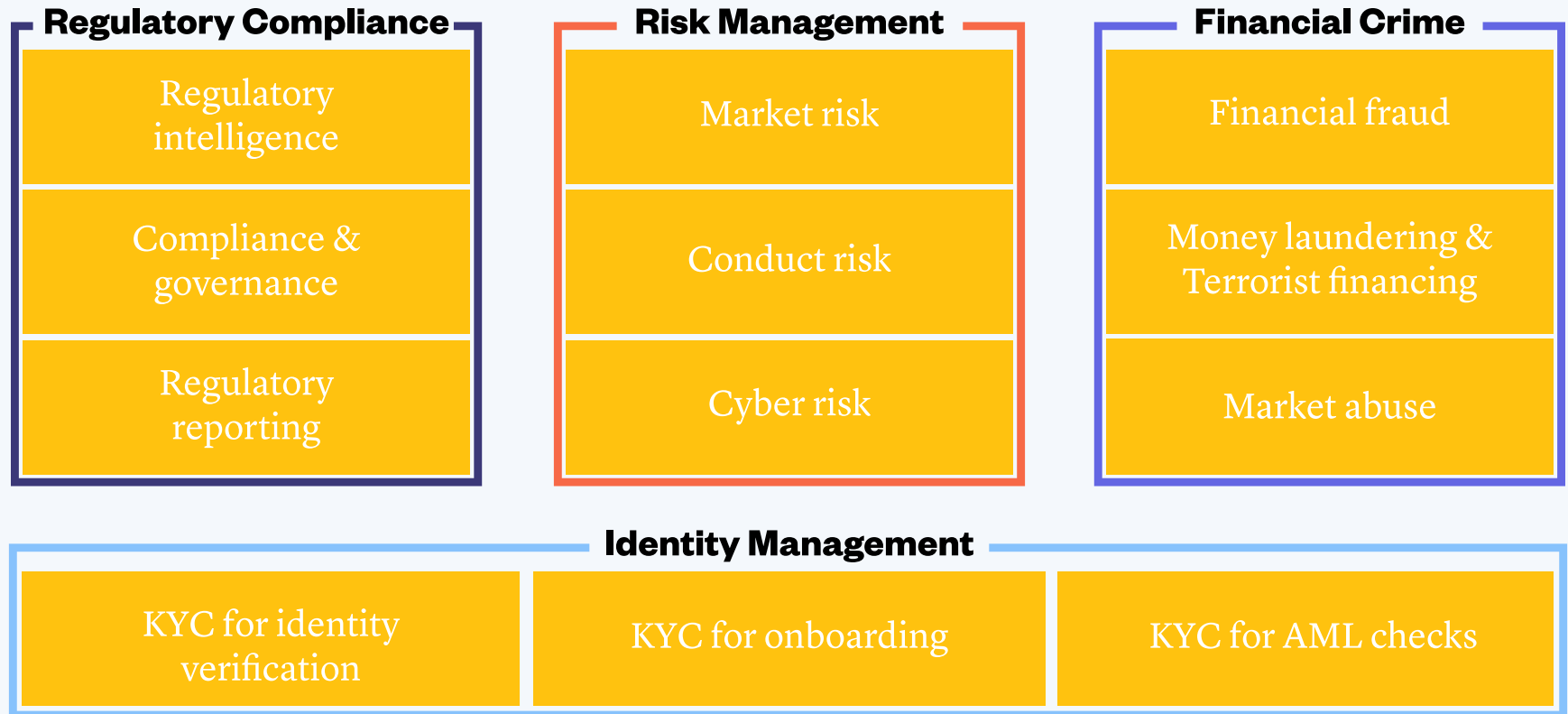Interview on digital compliance in banking

Conclusion
Implementation success in RegTech 2.0 will come from nurturing wider-ranging and value-added collaborations across all parties.

The Startups

Though heavily dependent on the external ecosystem of regulators and banks, the RegTech industry is still all about the startups. We collected data on 401 RegTechs including 352 startups, focusing on those with traction in terms of sales to banks, or funding. We focused on the compliance RegTechs rather than the KYC/Identity RegTechs which form a large category by themselves.

Burnmark's RegTech classification based on all digital use cases of banks.

Regulatory Compliance

Regulatory intelligence
Compliance & governance
Regulatory reporting

Risk Management

Market risk
Conduct risk
Cyber risk

Financial Crime

Financial fraud
Money laundering & Terrorist financing
Market abuse

Identity Management

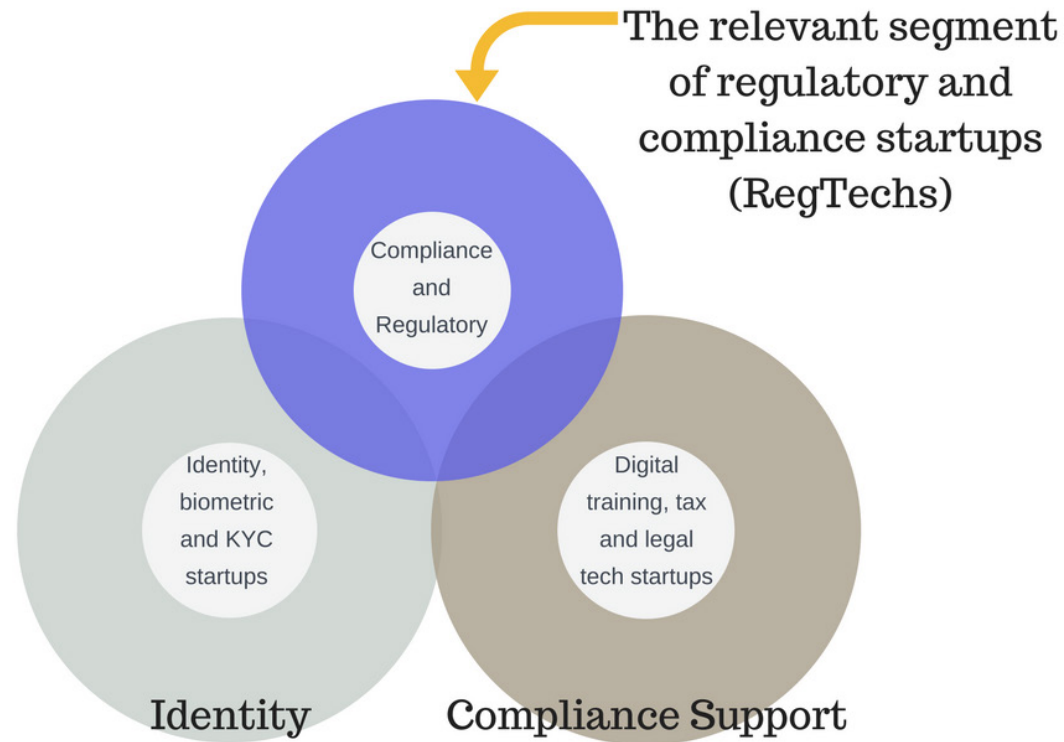| KYC for identity verification	KYC for onboarding	KYC for AML checks

Regulatory compliance. RegTech startups with offerings that help banks in gathering regulatory intelligence, mapping policies, compliance governance and automated data sharing with regulatory authorities

Risk management. RegTech startups with offerings that help banks detect market risks, monitor employee conduct for suspicious behaviour and protect data from numerous cyber risks

Financial crime. RegTech startups with offerings that help banks monitor financial transactions in real-time to detect fraud, market abuse, money-laundering or terrorist financing activities
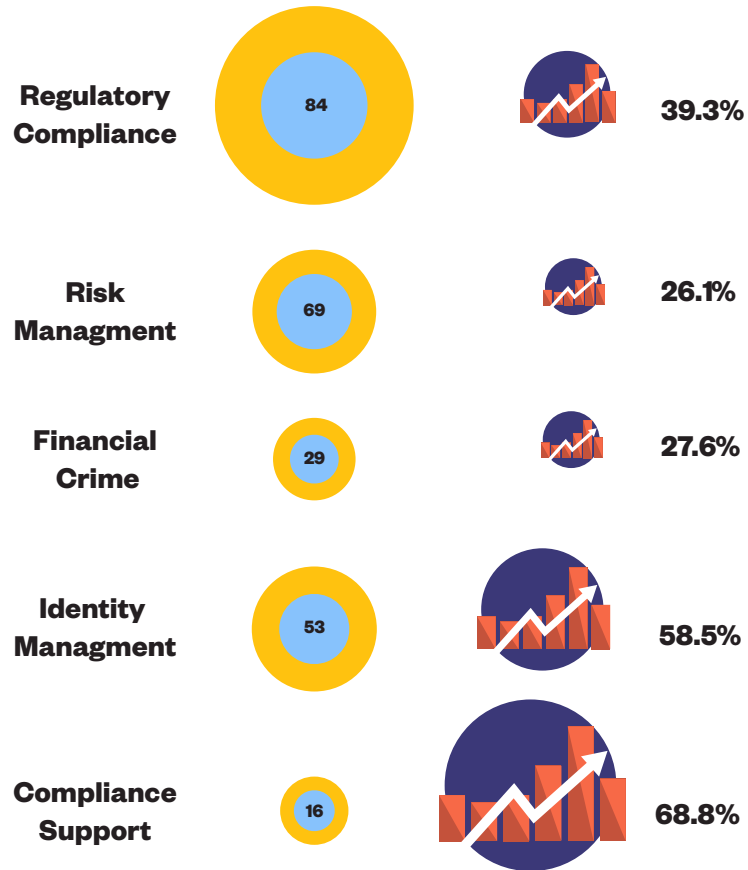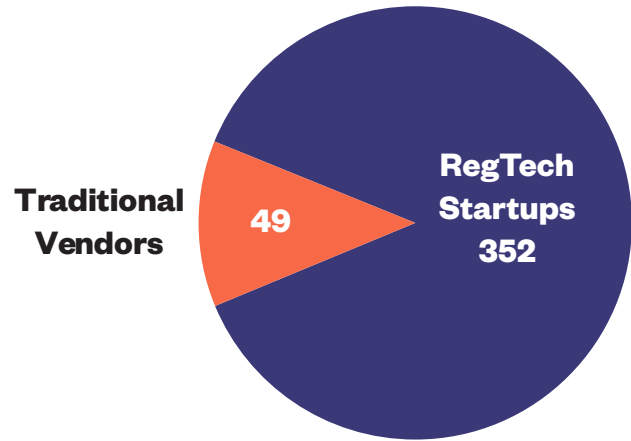
Identity management. RegTech startups with offerings that help banks with Know Your Customer (KYC) procedures, anti-money laundering sanctions and anti-fraud screening

Burnmark's RegTech classification based on all digital use cases of banks.

The relevant segment of regulatory and compliance startups (RegTechs)

Compliance and Regulatory

Identity, biometric and KYC startups

Digital training, tax and legal tech startups

Identity

Compliance Support

No segment in financial services is entirely independent. RegTech has significant overlap with the Identity, Data, KYC, Biometric, Compliance Training, Tax and Legal industries. However, for purposes of analysis, we have looked at startups who primarily operate in the compliance and regulatory space with clear use cases for banks and significant traction selling into banks.

RegTech segments have shown significant growth from phase 1.0 to phase 2.0

Traditional Vendors 49

RegTech Startups 352

Segment	RegTech 1.0	Now	Growth
Regulatory Compliance	84		39.3%
Risk Managment	69		26.1%
Financial Crime	29		27.6%
Identity Managment	53		58.5%
Compliance Support	16		68.8%

Number of segment startups in RegTech 1.0 (2010-2015)

Number of segment startups now

Segment growth from RegTech 1.0 to RegTech 2.0

THE BURNMARK REGTECH SURVEY

We conducted a survey of selected RegTech startups who have worked with banks globally, and 45 RegTech startups responded. We asked questions about their offerings, engagement models with banks, underlying technologies & deployment models and the challenges they are facing scaling up.
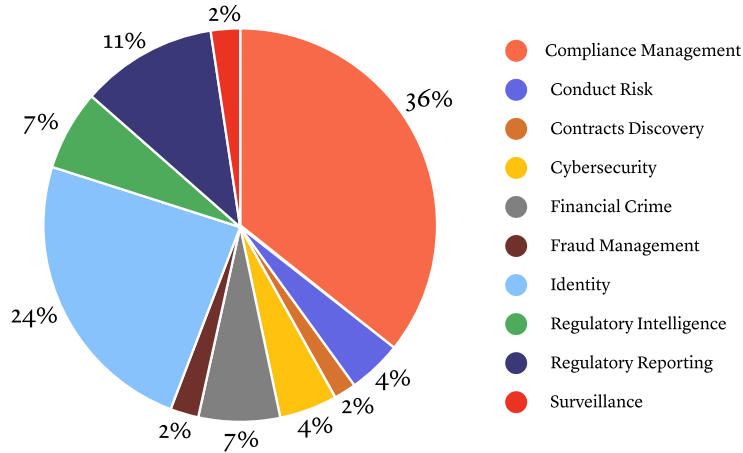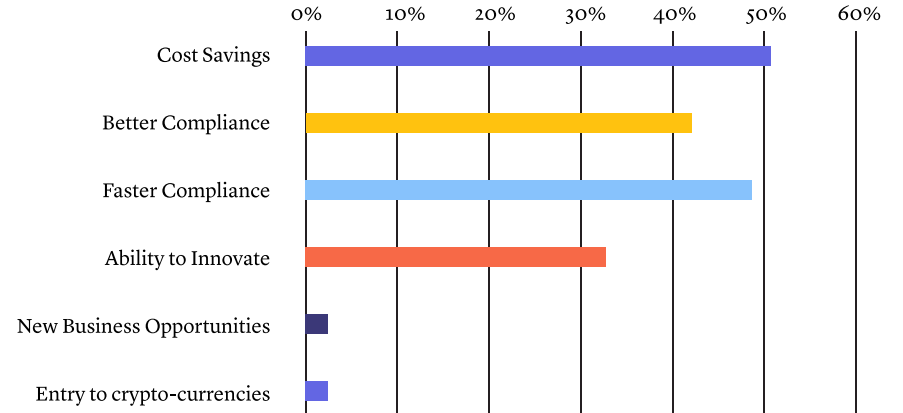
SURVEY PARTICIPANTS

THE BURNMARK REGTECH SURVEY
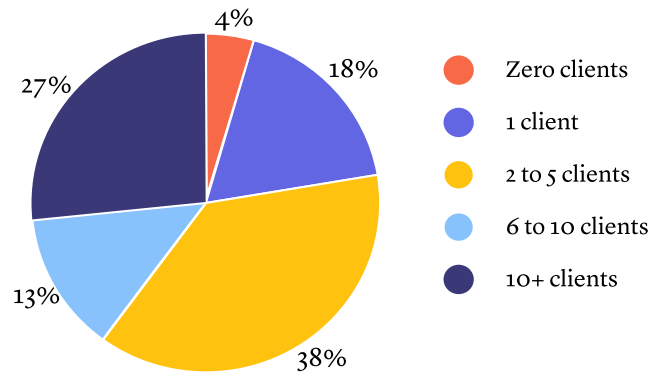### A selection of questions we asked the startups

What segment do you play in?

- 36% Compliance Management
- 2% Surveillance
- 11% Regulatory Reporting
- 7% Regulatory Intelligence
- 24% Identity
- 2% Fraud Management
- 7% Financial Crime
- 4% Cybersecurity
- 2% Contracts Discovery
- 4% Conduct Risk

Legend:
- Compliance Management
- Conduct Risk
- Contracts Discovery
- Cybersecurity
- Financial Crime
- Fraud Management
- Identity
- Regulatory Intelligence
- Regulatory Reporting
- Surveillance

What business benefits do you primarily offer to banks?

- Cost Savings
- Better Compliance
- Faster Compliance
- Ability to Innovate
- New Business Opportunities
- Entry to crypto-currencies

(x-axis: 0% 10% 20% 30% 40% 50% 60%)

How many banks have you worked with?

- 4% Zero clients
- 18% 1 client
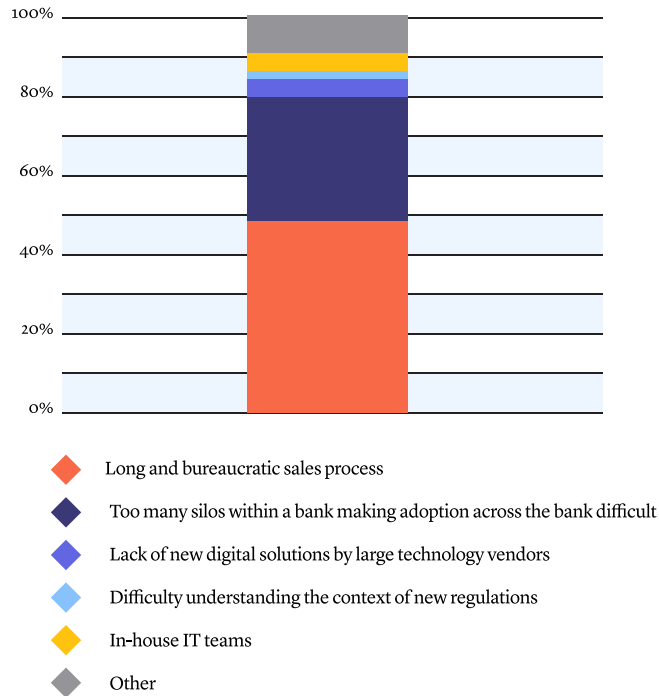- 38% 2 to 5 clients
- 13% 6 to 10 clients
- 27% 10+ clients

Some of the early RegTech firms have already worked with 10+ banks, but mostly in a PoC deployment model.
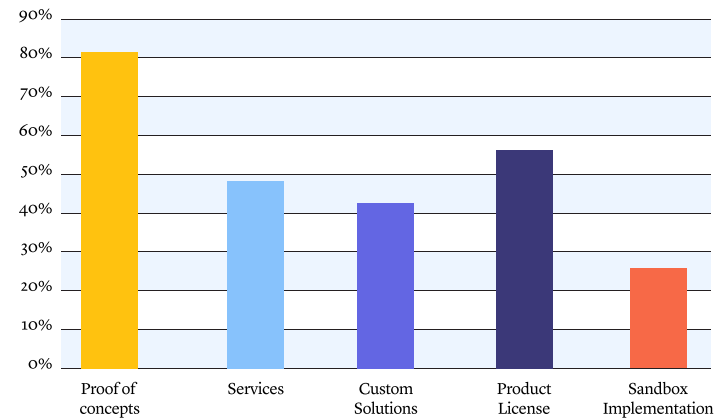
THE BURNMARK REGTECH SURVEY
A selection of questions we asked the startups

What are some of the challenges you faced working with a bank?

◆ Long and bureaucratic sales process

◆ Too many silos within a bank making adoption across the bank difficult

◆ Lack of new digital solutions by large technology vendors

◆ Difficulty understanding the context of new regulations

◆ In-house IT teams

◆ Other

What types of engagement have you had with banks?

In RegTech 1.0, startups have been engaging with banks primarily through proof-of concept, while in RegTech 2.0, product licensing and services engagements are picking up pace.

QUOTES
What RegTech startups have to say

"

Datarama.

Current legacy solutions used by banks are ill-fitted to meet the stringent requirements increasingly implemented by regulators all around the world. RegTech is a seamless way for banks to meet these requirements, without needing to overhaul their existing models entirely. RegTech is the future of facilitating compliance management.

AUTHADA

As a RegTech startup we deliver more than only a concept of utilising technology innovation for the purpose of handling the complex requirements of regulation and compliance. We deliver trust and security in digital business processes.

kompany
global company intelligence

The ability of companies to become compliant is hampered by a lack of understanding of the law, institutional inertia, and technical bottlenecks within organizations. We address these in the onboarding and business verification processes by combining AI and robotics, to exceed regulatory requirements.

GOVERNANCE.iO

In 2017 banks start realising that RegTech does not disrupt their business, but is here to help them. RegTech can make banks more efficient, saves costs and reduces liabilities. A win-win-win situation.

Seal

Banks are open minded to working with startups and as they appreciate the innovation that comes from these companies vis-a-vis large traditional vendors. We are seeing increased adoption of machine learning and natural language processing in the handling of hundreds of thousands of QFCs, and derivative contracts and the need to provide compliance to mandatory regulations such as SR14-1, IFRS15, IFRS16, ringfencing and GDPR.

finform
digitizing & approving formalities

RegTech is a necessary way to handle the increasing regulatory bureaucracy.

TransparINT

Although the desire for better technology exists, financial institutions are generally discerning customers. This requires new solutions to actually perform and provide a much greater lift in terms of better compliance and increased efficiency than existing solutions.

alyne

We've seen an acceleration of adoption rates in recent months with the emergence of value-add RegTech solutions

instead of the pure hype topics (e.g. blockchain, AI etc).

CHAINALYSIS

Compliance has to move away form the last century idea that we know where you sleep (KYC) so you better behave i.e. repercussions, to a framework based on resilience where the infrastructure is hardened to a degree where you cannot do wrong to an extend that it really matters.

QUMRAM

Many banks are struggling to grasp the context of upcoming regulations, and understand what they really mean on a practical level. As an example, most believe that by recording voice and email communications, their digital record-keeping will be MiFID II compliant. But it won't, unless they add websites, client portals, social media, instant messaging and any other form of e-communications to the growing list of digital channels that must be recorded for compliance.

REGDELTA
A JWG Solution

If the RegTech industry is a mountain, we are now only at basecamp. Serious co-operation and collaboration between technology firms, regulators and financial institutions is necessary to drive the innovation in the timeframe required.

AiDA

RegTech is growing tremendously with many banks and wealth funds at the verge of implementing the right solutions. Our Know Your Traders solution has been deployed and in huge demand to monitor trading floor irregularities.

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QUOTES
What RegTech startups have to say

"

FINOMIAL

Banks are in the business of providing outstanding experiences to their clients throughout the client lifecycle. But increasingly the customer experience gets compromised by the heavy demands of regulatory compliance.

CORLYTICS

From our perspective, the most important thing for us when selling to FIs is to understand the problems that they are facing. Understanding the problem enables us to accurately convey our value proposition, which is key to keeping conversations going. The second major piece that we needed to understand is that the sales cycle is long, and for major tier 1 FIs, there will be multiple people/ departments involved. We needed to be patient and work with each department to convince them of our value to ultimately find a business

sponsor who is willing to pay. There are a number of steps to get there.

GECKO GOVERNANCE

We were formed from the struggle in the industry to find something that was easy to use, dynamic and could cope with the different work flows required from 40 Act funds in the US or AIFMD in Europe.

iSignthis®

The value proposition of RegTech needs to be made clear at the onset - it is not only a means for achieving management and consistency across compliance requirements, but also a means to drive efficiencies across the back and front office functions.

AML Partners
A Behavioral Risk Mitigation Firm

Banks are looking for end to end ecosystems that can handle everything from KYC Lifecycle Management to AML

transaction monitoring to the screening of realtime SWIFT CHIPS FEDwire payments to case management. An ecosystem like ours reduces the number of ETL data movements between multiple disparate systems etc.

veridate financial

The sheer volume of clients in the remediation process of adopting an end-to-end solution like Veridate needs a management buy-in before we are able to implement our solution as the support staff we need to work with have a natural resistance to change and automation.

S PHONIC

There is a real desire for banks to want to engage with RegTech firms and key is to find a project which allows for an initial validation of your technology and grow out from there.

GRC solutions

Banks are seeing that the old ways of dealing with compliance simply haven't worked. Time spent on compliance training doesn't equal competence, adaptive eLearning reduces the cost of lost productivity whilst increasing understanding and reducing risk across the bank.

kompli-global
Gold Standard Compliance

It is very easy to criticise traditional banks but you have to appreciate just how large these organisation are, the pressures they are under and the many facets of regulation they have to deal with. However, key to a successful working relationship with RegTechs will be appreciating that your RegTech solution is almost certainly only addressing a single piece of the complex compliance pie. The challenge for many of these institutions is knitting all of these solutions together.

Trulioo

..PSD2, for example, asks banks to make certain elements of customer data available to third parties, while GDPR aims to give control back to EU citizens and residents over their personal data. With advanced electronic identity solutions – like Trulioo – banks are able to comply with both regulations, while still delivering customers a quick and seamless onboarding experience.
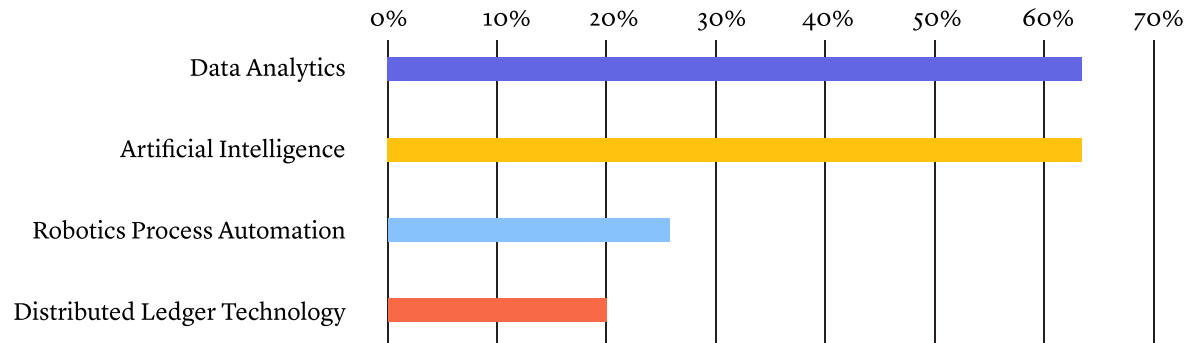
ComplyAdvantage

Banks face an amalgamation of risks, and by working with RegTechs who have laser-focused expertise and open architectures, they can work to meet their bigger picture requirements. When integrating with legacy systems the solution is to not actually integrate - it's all about ingesting better data, and not massive infrastructure, allowing banks to bolt on and run.

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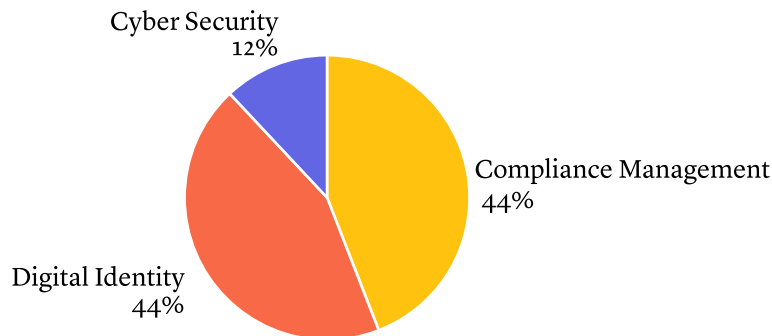# AI technologies are far more popular with RegTech startups, much more than DLT

Underlying technology for RegTech solutions

We asked our respondents about the underlying technologies to their RegTech products and solutions. Almost all of RegTech is based on analysing data for KYC or onboarding or fraud or crime or reporting, so data analytics featuring as the top response was not surprising. However, we also see a wide adoption of technologies supporting AI (machine learning, NLP) within the RegTech firms. Distributed Ledger Technologies (DLT) like blockchain were far less involved in their solutions.

For the firms offering DLT solutions, we found that the most popular use cases were around digital identity and compliance solutions. 12% of firms with an underlying DLT technology offered cybersecurity solutions.

Most popular use cases for DLT-based RegTechs

Cyber Security 12%

Compliance Management 44%

Digital Identity 44%

SURVEY FINDING 2

The timeframe for implementation in banks is far longer than what most RegTechs expect

After our online survey, we reached out in person to the RegTech startups who mentioned they have worked with more than ten banks. We wanted to get more information on the engagement modes and a typical time frame that they have experienced during the procurement and deployment stages.

We discovered that most RegTechs (91%) have only done PoCs with banks. We had two RegTechs who came back with stories of multiple implementations - one RegTech mentioned they have implemented in eight banks in one domain area and with two banks in multiple domains. Another mentioned implementations in four banks in one domain area and in one bank in multiple domain areas.

Below is a snapshot of typical turnaround times that RegTechs say have experienced during the procurement and deployment stages. On average, RegTechs see a shorter duration of 1-3 months in getting a PoC approval from banks after a qualified meeting. PoC approval to PoC completion stage takes a bit longer and is in the order of 3-6 months. The last stage of converting a PoC into an actual sale of products, custom solutions or services seems to take the longest and is said to be in the order of 3-9 months.

RegTech	1st Contact - getting PoC approval	PoC approval - PoC completion	PoC completion - 1st sale (license, services)
RegTech 1	1-2 months	2-3 weeks	6-9 months
RegTech 2	1-5 months	3-5 months	1-6 months
RegTech 3	1-3 months	6 months +	8 months +
RegTech 4	6-12 months		
RegTech 5	3 months	3 months	3-6 months

Source: RegTech startup inputs

Most startups we spoke to spoke about the time for internal approvals, and handling approvals from multiple areas within the same bank as the biggest challenge. In most cases, they will need to connect with internal IT and legacy systems and this could cause a significant resource drain as well. Operationally, the typical institution uses fragmented legacy technologies and equally fragmented data sources. The integration with the siloed data infrastructure of the banks also becomes a bottleneck in the onboarding process. This aside, it is notoriously tough for a RegTech startup to negotiate with an entity whose IT, business and procurement departments are often individually influential and organizationally aloof. The short existence of most RegTechs also implies that many FIs are still unfamiliar with its reliability and acceptance, creating another barrier in RegTech procurement.

POINT OF VIEW

The $100 billion question: how do you scale RegTech faster?

Richard Maton, International RegTech Association

It is a figure that has been used to estimate the global costs of compliance with new regulations within financial services. At the heart of this $100 billion challenge and opportunity is the failure of legacy thinking, technology and processes to scale with breadth, depth and speed of new regulatory requirements across multiple jurisdictions.

RegTech solutions apply core new technologies with lower-cost models to people and processes that disrupt legacy approaches. The impact includes a reduction in costs, improved regulatory effectiveness and better revenue generation, customer engagement and capital allocation.

Design principles for Financial Institutions

Financial institutions are finding success by creating multi-disciplinary teams to define regulatory problems and possible "good" outcomes more efficiently. With this framework, new technology solutions can be evaluated with a fuller understanding of the impact on people and processes, and the constraints of legacy technology, data management capabilities and operational risk.

The collaborative mindset that underpins a successful RegTech strategy extends to engagement with other institutions and regulators to test and scale solutions faster with reduced cost and risk. Examples include the development of shared testing facilities for solutions using machine learning to automate the management of regulation impact and change.

Implication for RegTechs

This emerging model from financial institutions gives RegTech companies the opportunity to co-create and scale solutions faster in partnership with institutions and other solution providers.

While institutions want great ideas and technology, they need a clear demonstration of RegTech impact for their business. Given the complexity and breadth of the problems, they are also looking for the right partner to solve together with an understanding of client's infrastructure, security, data, protocols and controls across locations.

Regulators as enablers

RegTech solutions are being adopted by supervisors to cope more effectively with their new responsibilities and to inform policy development.

RegTech enablement policies include digitising regulatory handbooks, developing prudential reporting standards based around XBRL, and listing RegTechs complying with these reporting standards.

These approaches enable institutions to mitigate risk in selecting and working with new firms. Though regulators may not certify RegTech solutions, development of testing mechanisms such as sandboxes provide regulators with the opportunity to act as observers as part of a systematic validation of the effectiveness of new solutions.

Facilitating Global RegTech

RegTech is a global opportunity, requiring both global and local facilitation and support. This is why the International RegTech Trade Association (IRTA) has been created to enable RegTech collaboration at local and global levels. These initiatives will include helping people shape and navigate the expanding RegTech landscape, enabling faster procurement, supporting development of publication standards for digital regulation and broader work on data standards.

The IRTA approach is collaborative, engaging with RegTechs, financial institutions, regulators and investors while looking to complement and support work already underway by others in the RegTech ecosystem.

Fulfilling RegTech's $100bn+ potential will be achieved by people with the same collaborative mindset working within emerging frameworks to disrupt legacy approaches with a shared understanding that the status quo is our biggest risk.

The Banks

We spoke to banks about their expectations
on collaboration with RegTech startups
- and whether the benefits delivered so
far have lived up to expectations. We
also spoke about gaps, challenges and
opportunities for better collaboration in the
future.

INTERVIEW

Regulatory Technology at DBS Bank Singapore

Conversation with Chee Kin Lam (Group Head of Legal, Compliance and Secretariat) and Team

We have developed an approach to compliance risk based on identifying the top thematic risk areas impacting the bank. These are risk areas we monitor on an on-going basis. Since these are our top risks, we are continuously looking for the most transformative approaches in managing these risk areas. So I think it is pretty safe to say that we will be very happy to experiment with RegTech under any of these themes. The main thing though is to first establish a very well defined problem statement associated with that risk theme and then to allow people with very diverse yet complementary skill-sets to work on the problem.

What has been your experience with RegTech solutions and startups?

My view of RegTech is that there are a lot of solutions looking for problems. There is room for improvement in the problem statements that may help create better and more commercialisable RegTech. For example, I am a little cynical of the large number of RegTechs addressing KYC/CDD using Blockchain (alone). All that happened was people latched on to Blockchain and said, "That it is the solution"; however, what they are doing is in essence digital identity authentication. So in my opinion, the flaw in thinking is equating digital identity with KYC/CDD. The reason this happens is because the problem statement wasn't accurately defined. While it is universally acknowledged that KYC/CDD is a major industry

problem, it cannot be solved merely with digital identity. There are other issues with KYC such as the unwrapping and the screening problems. If you don't actually attack all the components of the problem that are identity, unwrapping, and screening, you are only solving a part of the full problem. Worse, when this then gets road tested in a real banking environment, you end up taking what is today an operational end-to-end process in doing customer on-boarding and KYC and breaking it into different parts to solve digital identity, but introducing even more process hand-offs and operational risk - to solve digital identity but not looking at the way this fits with the rest of the problem.

How do you approached identifying, experimenting and potentially implementing RegTech solutions?

At DBS we try very hard to begin with an accurate problem statement. Problem statements are derived from, for example, the biggest problems and risks, and finding those things that our people don't like doing or our customers don't like. Once you have found those problems, then you need to bring in the regulatory professionals with domain knowledge. I have observed many RegTech projects run by operational efficiency specialists identifying a problem, then going straight to designers and engineers, and trying to solve that problem with a technological innovation, but failing to adequately consider the regulatory perspective. In RegTech, we must also be mindful of the need

to demonstrate to the regulators that this is a good and appropriate thing to do. Why this is better from a controls perspective than what we had before. If you don't have to do that, if you're not also thinking about designing for the regulator, then in my view you are not doing RegTech, you are doing operational excellence. The key differentiator between fintech and RegTech and LegalTech are centuries (legal) or years (regulations) of professional domain knowledge which needs to be factored in. This expertise is a problem for most startups, as it can be harder to find people with requisite regulatory and compliance knowledge.

What are some examples where a technology solution has worked (or is being evaluated) in your legal and regulatory area?

Like most banks we constantly monitor our payment transactions and have tools to identify – representing fraud risk, AML risk or sanctions risk. The issue here is that a lot of 'false –positive' situations get flagged for review, meaning that sometimes as many as 90% of these alerted transactions are not actually suspicious. Each of these alerted transactions warrants deeper investigation which ties up resources. This is a field where analytics is tremendously beneficial, but how do you do, at scale, a series of very fast experiments. So we did a tie up with a tertiary institution and worked with a few Masters' students on mathematical models. They crunched through our historical data looking for

The importance of accurate problem statements
Conversation with Chee Kin Lam and team (continued)

patterns and were able to come up with algorithms that overlaid our current system and provide better predictive capabilities to refine our fraud identification criteria and reduce the number of false positives.

Next, when we were looking more deeply into the area of transaction surveillance, we discovered that our teams kept complaining about the numerous system logins that they had to undertake before they could even start addressing the flagged cases. Some had to do 20 logins to a variety of systems. To address this problem, we worked with a vendor on a process automation solution (RPA) streamlining the sign-on.

We are also currently evaluating and running PoCs working with a few AI startups. One is around Natural Language Processing (NLP) for name identification and the interesting thing here is to be able to have a smart enough algorithm to discern the different roots of an Asian name. For example, Mr. Wong in Pinyin mandarin is expressed differently in Cantonese, Vietnamese or in Korean. We are also evaluating AI to automate the review of low risk legal contracts eg. non-disclosure agreements, to free up legal resources to focus on higher value-add work.

Our measure of success with technology as an enabler in regulatory compliance must necessarily be whether we produce better compliance by the employee and customer population. What we do, must work in practice – must be executable. If the final output by compliance is just several policy memos that are

hosted on intranets which everybody has to read then we are not doing our jobs properly. We are not delivering what the regulator wants and what our internal client actually needs, and what our customers will benefit from.

How have you overcome the typical large bank issues when engaging RegTech startups?

At DBS we have been embedding a culture of design innovation and experimentation across our senior managers. We also spend a lot of time during our leadership meetings to align and push forward the technology agenda. In the legal and compliance function, we have 27 people on our executive leadership team and as much as possible we make every effort to build consensus on where we are going. We are reasonably aware of the macro trends in tech – eg. mobile, sensors, analytics, cloud, and so on - and we feel we have a level of capability to make decisions on RegTech evaluations. And our technology support teams are also aligned closely with us. An added capability that I have in the DBS setup is that Legal and Compliance is centralized and I oversee the budget for all legal and compliance transformation so can direct spending as appropriate.

Our evaluation and experimentation/PoC with startups and tech vendor solutions has made us acutely aware of a potential fragmentation of tools and applications that we might be implementing. In order to avoid this situation we have seen a need to establish

an overarching platform frame for onboarding these new digital technologies and making sure they speak to each other at a legal/compliance level instead of at an individual function level – eg. control room, trade surveillance, AML surveillance and so on. It will take time, but there is a need for that.

What areas of RegTech are you focused on going forward?

There are three areas with the first two being identified by IIF in their RegTech report. IIF identified KYC utilities as a major area and also data analytics as another key area for RegTech. The third area we are interested in is AI.
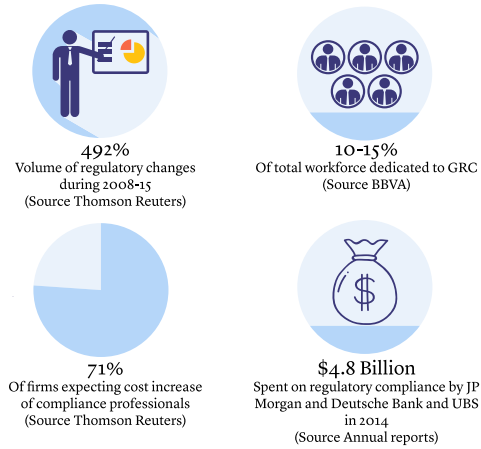
I would add that it's very difficult to do any large scale RegTech project without the public sector either leading it, or doing it public/private. Many regulators - with financial, data and cybersecurity interests - potentially have a stake. So maybe just to close off, I would say another thing DBS finds useful is the overall Singapore "Smart Nation" initiative which allows alignment conversations to take place along a wide array of stakeholders, to come to decisions on which things we will ultimately do.

As transcribed and edited from a conversation in the DBS offices, Singapore.

DBS was Digital Bank of the Year at Euromoney's Awards for Excellence 2016

INSIGHT 1
Automation of regulatory process as a quick-win

492%
Volume of regulatory changes
during 2008-15
(Source Thomson Reuters)

10-15%
Of total workforce dedicated to GRC
(Source BBVA)

71%
Of firms expecting cost increase
of compliance professionals
(Source Thomson Reuters)

$4.8 Billion
Spent on regulatory compliance by JP
Morgan and Deutsche Bank and UBS
in 2014
(Source Annual reports)

Automation Candidate	Degree of manual processing	Technology	Regtech examples
Stress testing		Artificial intelligence, Data analytics	Ayasdi, Algorithmica, AlgoSave
Reporting		Robotic process automation, Data modeling, Smart-cubes	Vizor, AxiomXL, Bearing Point
Risk management		Robotic process automation, Predictive analytics	AlgoDynamix, NewRM, Fortia financial solutions
Financial Crime		Artificial intelligence, Data analytics	NICE, AML Accelerate, Ancoa, Rippleshot
KYC		Artificial intelligence, Data analytics	Trullioo, Signzy, Isingthis
Regulatory impact assesment		Artificial intelligence, Data analytics	Regdelta, Enforcd, Lexemo, CUBE

Source: Burnmark

"We discovered that our teams kept complaining about the numerous system logins that they had to undertake before they could even start addressing the flagged cases. Some had to do 20 logins so we worked with a vendor on a process automation solution (RPA) streamlining the sign-on."

- DBS Bank, Singapore

Ayasdi worked with a major bank to automate its stress testing, from a nine-month process requiring hundreds of employees to a three-month process using less than 100 specialists.

RegDelta helped a bank reduce the time of regulatory gap analysis estimated to take a manual effort of approximately 3.5 months. The bank achieved the same results in 20% of the time and a fraction of the cost with RegDelta platform.

Findings

From 2008 to 2015, the annual volume of regulatory publications, changes and announcements have gone up by a staggering 492%. FCA estimates over 300 million pages of regulatory documents to be published by 2020. Banks now dedicate 10-15% of their workforce to compliance, and around $80 billion is spent on governance, globally.

- Banks have to streamline and then automate low complexity, yet, resource demanding compliance activities to improve cost efficiency and resource optimisation in light of an ever growing amount of regulatory requirements

- RegTech 2.0 will see bionic compliance capabilities complementing compliance professionals who can leverage technology to design control procedures and processes according to shifting regulatory requirements

INTERVIEW
Our journey with RegTech

Conversation with Eduardo Avila (Head of Supervisory Relations), Carlos Menendez, Carmelo Quintana, Maria Encina (Financial Engineering Team)

BBVA

On RegTech areas of focus.

Firmwide, BBVA has focused efforts on the organization and management of their financial data. We are progressing towards establishing a BBVA wide data platform and library (Datio) to enable a one-source location for all financial data with clear common standards in order to avoid the data siloes and inconsistencies in data of the past. This platform covers Risk, Finance and Regulatory data and will form the basis for integrated regulatory reporting in the future. We feel that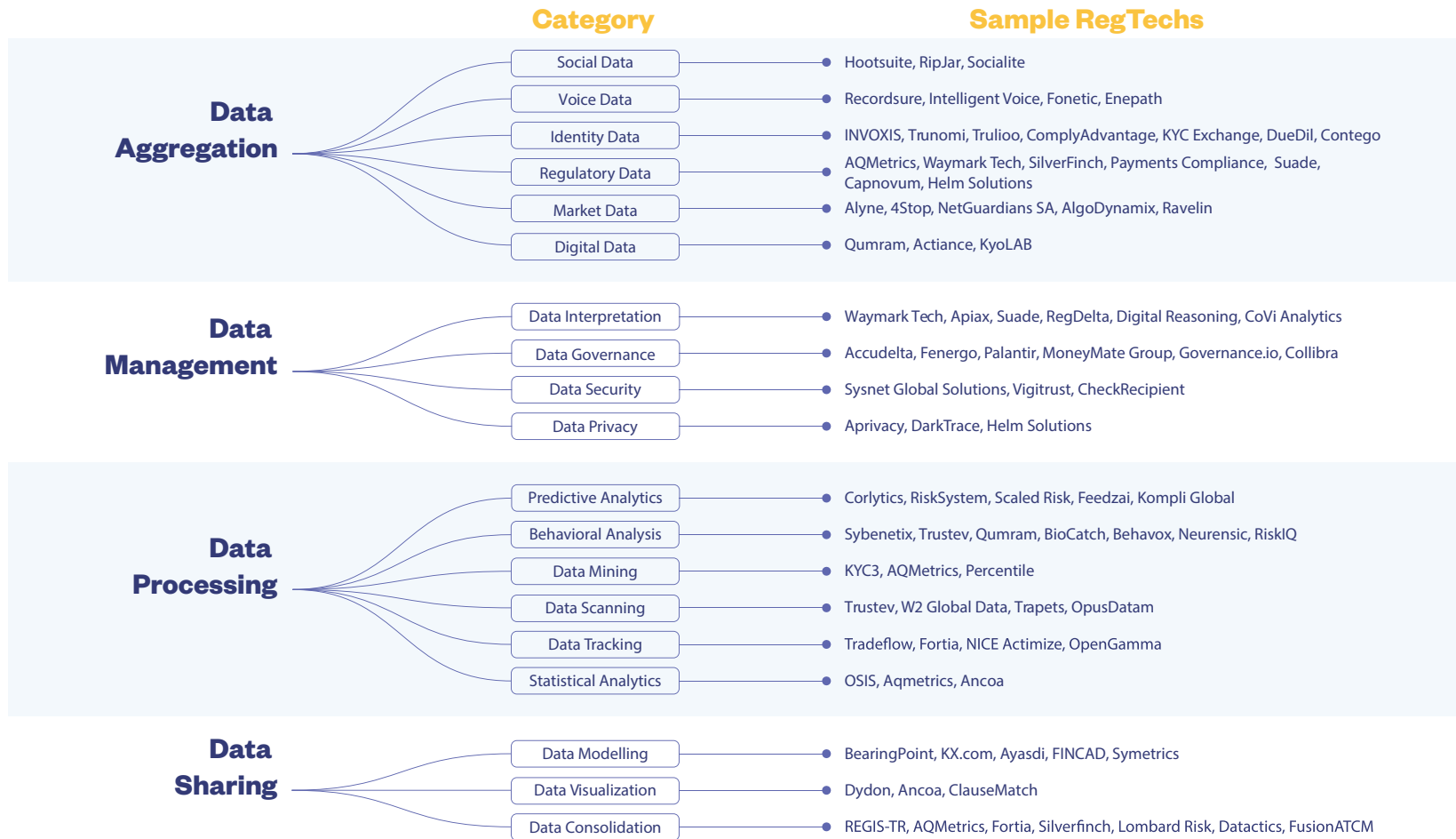 having this goldern source of data will form a fundamental building block in how we do regulatory reporting incorporating RegTech developments.

On experimenting with RegTech startups.

It is often the case that despite the RegTech technical solution being superior we have encountered second-order type management challenges relating to how our firms can engage and translate a pilot into an implementation. For example, during the process of finalizing the terms of one Pilot engagement, this startup didn't have resources to conduct legal contract negotiations. Hence whilst our BBVA legal teams were engaged, it required a lot of time and going back-and-forth between parties to establish the terms for their engagement.

On dealing with the regulator regarding RegTech.

We had informed and involved all our regulators during the pilot of this RegTech solution. The regulators involved were DNB (Netherlands), Bank of Spain and representatives from the ECB since BBVA is a systemic bank. It was apparent to us that the regulators were at different levels of maturity with regards to evaluating RegTech solutons and hence bringing them along required some time and effort.

There is an ECB level bank industry initiative to establish data standards and libraries to harmonise data standards and requirements across the banking sector. The initiative is called BIRD (Banking Internal Reporting Dictionary) and is aimed at consolidating data definitions related to FINREP, COREP and Credit. The initiative also covers reporting production process standards and is being led by a pool of banks.

On the future of RegTech.

Where we see opportunities for RegTech in our particular area of regulatory compliance is in consolidating financial data libraries and enabling the checking and testing of data robustness. We see opportunities for using RPA (Robotic Process Automation) across this area of financial aggregation, checking and regulatory reporting. We also view software-as-a-service from a private cloud critical

as any incremental improvement to the software suggested by the range of banks using the software would raise the overall level of functionality and performance. Startups need to understand the regulatory framework and the key requirements in the compliance area that they are addressing. Whilst the RegTechs are creating solutions that may be able to deliver on the new regulatory reports, they still have a huge legacy of reporting that needs to be optimized and upgraded. This backward integration is a key consideration for banks that need to utilize RegTech solutions.

As transcribed and edited from a telephonic conversation with BBVA.

INSIGHT 2

Harnessing the power of data to optimise regulatory compliance

"

We are progressing towards establishing a BBVA wide data platform and library (Datio) to enable a one-source location for all financial data with clear common standards. This will help us avoid the data siloes and inconsistencies in data of the past. This platform covers Risk, Finance and Regulatory Data and will form the basis for integrated regulatory reporting in the future. **"**

- BBVA

Findings

In 2018, GDPR (General Data Protection Regulation) and PSD2 (Payments Services Directive) will prompting a complete overhaul of the way banks approach their customer data. MiFID2 and 5th AML directive will also impact on how banks monitor and report the transaction data.

- Data forms the cornerstone for regulatory compliance and banks will need to deploy powerful technology solutions that gather, structure, analyse and present data for regulatory review.

- In RegTech 2.0, banks will manage their data resources holistically, incorporating proprietary internal data complemented by external data sources to fill logical gaps. This big data resource will form the basis for data-driven analytics that support judgement based compliance with all upcoming regulations.

Harnessing the power of data to optimise regulatory compliance

Category   **Sample RegTechs**

Data Aggregation

Social Data	Hootsuite, RipJar, Socialite
Voice Data	Recordsure, Intelligent Voice, Fonetic, Enepath
Identity Data	INVOXIS, Trunomi, Trulioo, ComplyAdvantage, KYC Exchange, DueDil, Contego
Regulatory Data	AQMetrics, Waymark Tech, SilverFinch, Payments Compliance, Suade, Capnovum, Helm Solutions
Market Data	Alyne, 4Stop, NetGuardians SA, AlgoDynamix, Ravelin
Digital Data	Qumram, Actiance, KyoLAB

Data Management

Data Interpretation	Waymark Tech, Apiax, Suade, RegDelta, Digital Reasoning, CoVi Analytics
Data Governance	Accudelta, Fenergo, Palantir, MoneyMate Group, Governance.io, Collibra
Data Security	Sysnet Global Solutions, Vigitrust, CheckRecipient
Data Privacy	Aprivacy, DarkTrace, Helm Solutions

Data Processing

Predictive Analytics	Corlytics, RiskSystem, Scaled Risk, Feedzai, Kompli Global
Behavioral Analysis	Sybenetix, Trustev, Qumram, BioCatch, Behavox, Neurensic, RiskIQ
Data Mining	KYC3, AQMetrics, Percentile
Data Scanning	Trustev, W2 Global Data, Trapets, OpusDatam
Data Tracking	Tradeflow, Fortia, NICE Actimize, OpenGamma
Statistical Analytics	OSIS, Aqmetrics, Ancoa

Data Sharing

Data Modelling	BearingPoint, KX.com, Ayasdi, FINCAD, Symetrics
Data Visualization	Dydon, Ancoa, ClauseMatch
Data Consolidation	REGIS-TR, AQMetrics, Fortia, Silverfinch, Lombard Risk, Datactics, FusionATCM

Source: Burnmark

Big data technologies have evolved at tremendous speed, alongside fintech, in the past decade as well. There are several capabilities within these firms (a small indicative sample to the left) which can be used to take digital regulatory and compliance activities to the next level. RegTech capabilities using data based technologies are endless.

Developments in big data technologies are enabling global banks to create and handle new RegTech use cases

INSIGHT 3
Financial crime remains a sweet spot for RegTech

Silent Eight
Quantaverse
Dynamic GRC
Cynopsis Solutions
Arctic Intelligence
Fortytwo Data

AML Accelerate
Coinr m
TransparINT
Nice/Actimize
Hummingbird
Nextangles

Magnitude of money laundering is estimated to be around $2 trillion annually

Trustev
Risk Ident
Feature Space
Bankers toolbox
Chain Analysis
Evercompliant
Starting Trust
Identity Mind
Arachnys
Behaviosec
Rippleshot
Ravelin
ThetaRay
Feedzai
Aprivacy
Ripjar
Fonetic
This is me
AK-5

Identity theft, credit card fraud cost US consumers $16 billion per year

Anti Fraud Regulations
5 AML directive
Money Laundering
Financial Fraud
Financial Crime
Market Abuse
Market Abuse Directive

Elliptic
Trade Flow
Ancoa
Actico
Trapets
Alto
Neuroware

Market manipulation cost global markets $3.4 billion in just one quarter in 2017

Source: Burnmark

Note: This is not an exhaustive list.

> The issue is that a lot of 'false–positive' situations get flagged for review, meaning that sometimes as many as 90% of these alerted transactions are not actually suspicious. Each of these alerted transactions warrants deeper investigation which ties up resources. This is a field where analytics is tremendously beneficial, but how do you do, at scale, a series of very fast experiments?
>
> **- DBS Bank**

Findings

- RegTechs using sophisticated data analytics saw rapid deployment as point solutions in the risk areas of Fraud, AML and Sanctions as they provided more robust capabilities than legacy rules-based approaches.

- In RegTech 2.0, we predict that the solutions targeting financial crime will evolve into more robust end-to-end coverage of the problem areas in banks. The solutions in this phase will combine improvements in identity detection, investigation and analytics of entities and owners as well as machine learning to filter out deviant transaction patterns.

Regulatory processes moving from de-centralised to utility models

RegTech utilities in action

KYC Utility Development

Banks
- Operational efficiency in due diligence
- Better AML/CTF screening
- Shorter time to revenue

Customers
- Faster customer onboarding
- Lower risk of identity theft and fraud

Regulators
- Establish common KYC standards across industry
- Easier policy harmonization

- KYC Exchange Net AG has set up a shared platform for KYC and CDD that is currently being used by banking clients like Commerzbank, Societe Grenerale and Chartered through service contracts.

- AxiomSL and BearingPoint are helping banks in Austria manage Smart Cube reporting requirements prescribed by Austria's central bank, the OeNB, through a reporting utility platform that includes all of the necessary data mapping, transformation, drill-down and reporting functionality.

Utility models are being tried out by banks, vendors and regulators.

INSIGHT 4

Regulatory processes moving from de-centralised to utility models

"Singapore is in the process of creating a national KYC utility which involves several layers of identity verification depending on the purpose of the transaction, the extent of information involved, and the degree of rigour required."

-Monetary Authority of Singapore

"We collaborate with other banks actively. We have common issues, such as adverse news, which we share experiences about. UBS, for example, is across the road from us, and I meet them regularly. We should be competing on creating value for the end client, and not how we're implementing defense mechanisms. On defense we could collaborate more with other financial organizations."

- Credit Suisse

Findings

- A central source for KYC data and standards is a win-win-win proposition for banks, customers and regulators. Banks can reduce their collective KYC costs and customers will experience a smoother onboarding process. Regulators also benefit from a common basis to raise standards and facilitate better monitoring across different banks. Regulators such as MAS in Singapore and OeNB in Austria are facilitating dialogue between banks under their supervision in setting up shared utilities.

- Industry utilities will emerge as an important area of collaboration between banks, regulators and RegTechs during RegTech 2.0. The success of these utility models are also indicative of the transition in banking from a "vertical pipe" (solely of in-house services) to a "platform approach" incorporating a curated set of in-house and external banking services.

The Regulators

Not surprisingly, one of the biggest beneficiaries of the RegTech revolution has been global regulatory bodies. In phase RegTech 1.0, most regulators chose to observe, sometimes closely, the potential of technology startups. Some launched sandboxes, some launched accelerators. However, RegTech 2.0 will see the emergence of a new breed of "SupTech" startups that will work alongside regulators in meeting challenges.

INSIGHT 5
SupTech meets RegTech

Source: Burnmark

SupTech will see regulators collaborating directly with RegTech startups

> "SupTech is essentially the other side of the same coin – applying technology to enhance the way MAS carries out its financial supervision functions."
>
> **-Monetary Authority of Singapore**

Consumer Financial Protection Bureau (CFPB) uses complain supervision technology platform to supervise consumer complaints for over 3,000 companies in the US including a large number of non-banks.

Vizor has developed a technology for financial regulators that automatically monitors financial institutions to determine whether they are meeting regulatory requirements. Vizor serves several central banks, as well as bank regulators in England, Canada, Ireland, Saudi Arabia and more than a dozen other countries.

Findings

- In RegTech 2.0, regulators, especially in the regions with fintech hubs, will become significant users of RegTech themselves (unlike in Phase 1.0 where direct involvement with RegTechs was minimal except via accelerators) to keep up with the supervision challenges. SupTech, the emerging segment of RegTech, can enable regulators to take a data-driven approach to supervisory process and shift from a retrospective to a forward-looking approach.

- RegTech deployed by the regulators (SupTech) will enable them to take a data-driven and predictive approaches to supervision and potentially facilitate a shift from retrospective review to more forward-looking supervisory approaches.

POINT OF VIEW
What can regulators do more to support RegTech firms?

Conversation with David Lawton (Co-Head of Regulatory Advisory Services, Alvarez & Marsal and Former FCA Director of Markets, Market Policy and International)

In your view, what are the drivers for regulators to promote and support the RegTech ecosystem?

From a regulatory point of view, I think there are two drivers for regulators to be interested in RegTech. The first is guilt. Over the past 5-7 years, legislators and regulators have introduced a swathe of regulations in the industry that is costing firms huge amounts of money. Regulators feel guilty about the burden. Their cost-benefit analyses typically show the costs as immediate and measurable, while the benefits are unquantifiable and normally spread over the longer term. Anything that can help banks handle compliance more efficiently is good news from the regulators' perspective. The second driver is competition, particularly from a UK angle, i.e. regulators have an explicit operational objective to promote competition in the interest of consumers. Unlocking the dynamics of the market is an important element for getting a better outcome for consumers, and is heavily dependent on new entry and innovation. Typically, those two things go hand in hand because you can only be successful if you have a different business model from the incumbents' and one way you can be different is by being leaner and meaner, or by having a new technology.

In addition to these drivers, do you think regulators also have an indirect objective to assess RegTech solutions and help RegTech firms understand regulations?

In terms of RegTech, we need to distinguish between firms that require a regulatory license versus those that are suppliers to firms which require a regulatory license. Most of the startups that we have had conversations with are doing things that do not in themselves require regulation. So, regulators are interested in how those startups are doing, but they are not particularly sponsoring them. They are sponsoring the firms who are buying the services. Another point is - if you are in the RegTech space and you are not regulated, you need to have a good understanding of the regulations, because that, in essence, is what you are selling. You are selling compliance with 'X'. If you have got no idea about what 'X' is and what it means to comply with that, the credibility of your offering will be compromised. There might be a role for regulatory consultants in helping deliver some of the regulatory expertise to startups. The startups that we have talked to have great ideas based on innovative technology. They can see potential applications in the regulatory space, but they don't quite know how to cross the t's and dot the i's. These RegTech startups do need to be confident and comfortable with the 'Reg' part.

Why do you think the understanding of regulations is so important for RegTechs?

There are two reasons. One from the RegTech side i.e. you come off as a more credible supplier if you understand the regulations. Another is from the banks' side. A RegTech solution can't be a blackbox to banks. They need to be able to explain to regulators how a certain piece of technology helps them comply. On both sides of the relationship, there has to be some regulatory content

What is the role of the regulator in this? Do they want the direct communication with the RegTechs themselves to know what they are talking about?

I think that dialogue happens, but it is informal. From a regulatory perspective, you want to understand something in the marketplace, but you don't want to get drawn into either endorsing or signing off on somebody's product. It's the regulated entity's responsibility to demonstrate to you that they are complying and how they are complying.

There are many regulations with conflicting requirements. You have MiFID II on transparency and there's GDPR for privacy of personal information? How would technology deal with the grey area?

One of the things you have to do in MiFID II is submit transaction reports to regulators, with specified information, including who the trader is, i.e. personal information.

POINT OF VIEW

What can regulators do more to support RegTech firms? (continued)

Regulators say there's no contradiction with GDPR. But some banks are nervous and are discussing whether there could be some encrypted solution. There is also nervousness about possible changing regulatory interpretation in the future. I think the big ask is from RegTechs is whether they can solve both problems. It's much easier for RegTechs to say to banks: here's my solution that can be configured in many ways that gives the flexibility to respond depending on how the regulations are interpreted.

As a regulator, what were your key challenges? What help you were seeking from technology?

Regulators themselves are spending money on technology that help them collate and interrogate data more effectively. There are a number of elements to it:

1. Transaction reporting: The legislation is constructed on the idea that the individual transaction report itself will unlock the issue. Actually, that's not how it works. You typically only dig out the transaction report when you got some other piece of information to alert you that there might be something to explore – an aberrant price movement, an email suggesting an attempt at manipulation etc. That's typically the way regulators have looked at things. But there is also great value in looking at transaction reports as an aggregate data set, and employing more sophisticated technology to find patterns in the aggregate data.

2. Regulations require firms to send regulatory returns that include information on prudential capital, client assets, product sales etc. Those regulatory returns are done at various times and in different formats. What you need is simple tech that enables you to bring all the data together, at the right level of aggregation, across firms, across sectors etc., to allow you to look at the overall perspective, as well as to uncover hidden risks.

Are RegTechs for banks or regulators? Do you think the long-term benefit will be more for banks or regulators?

A classic answer to this is it's a win-win. If it helps banks deliver what regulators are demanding and help them serve the consumers better, more cheaply and more effectively, we are all for it. The challenge for banks is how does RegTech dovetail with what can have significant investment in multi-year IT programmes. A startup's solution could be fine for a patch or a fix on a specific issue, but it can't supplant my strategy. And if you are a major bank, you will never handover your entire tech strategy to a little IT startup.

From a tactical perspective, what is your advice to RegTech firms?

To me there are two interesting space for RegTechs to focus upon:

1. Using "big" data, partly from a compliance perspective, and partly to help revenue generation. What can you do more effectively by analysing big data whether it's credit scoring, market abuse, finer insurance premium pricing etc.? There is also a sub-segment to that - To what extent can we use semi-public data that's not mine i.e. social media footprint etc.? It takes you into privacy. Firms are asking what can I use data for and what can't I use data for?

2. Bringing together disparate data: For example, to enable compliance functions or risk functions to efficiently identify the areas in which to go deeper. Or to be able to take multiple data points and try to build a more effective alert mechanism.

How about regulation themselves such as MiFID2, GDPR etc.?

The number of regulations can sometimes seem limitless, but the different types of regulatory intervention that they embody are limited to a small number On the prudential side regulators ask: Do you have enough capital, enough liquidity? On the conduct side regulators ask: Have you kept client money separate from your own, how do you manage conflicts of interests etc.? There are limited interventions that regulators make. So RegTechs should focus on these interventions instead of tens of thousands of pages of regulations.

INSIGHT 6
Regulatory sandboxes are more popular in Asia

15%

The number of RegTech firms in regulatory sandboxes. Sandboxes are primarily for FinTechs and regulated entities outside of RegTech.

50%

The number of FinTechs supported by FCA amongst all global regulatory sandboxes since 2016. Shows significant commitment and maturity from FCA.

80%

The number of regulatory sandboxes launched by regulators in Asia versus the rest of the world.

Source: Burnmark

Findings

- Regulatory sandboxes are one of the most common initiatives from regulators around the fintech space, which have helped them successfully observe and understand the boundaries of fintech solutions. This has also been one way of encouraging and supporting innovation in the industry, making data and banking/regulatory APIs readily available for interested fintechs - mostly those interested in getting regulated.

- RegTech has not been a popular entrant into the sandboxes as they tend to work directly with banks rather than through regulatory channels.

- The first RegTech firm to get into a sandbox (FCA UK) was Tradle, a DLT-based identity firm. There are more entrants into FCA's 2017 programme like nViso and Saffe, as well as in 2017 programmes of regulators across Asia.

Regulators across the globe are upbeat about RegTechs

We are exploring opportunities to create a regulatory sandbox, an environment in which companies can test new products and business models without worrying about the regulatory consequences.

At this point in our risk assessment programs, the power of machine learning is clearly evident. We have utilized both machine learning and big data technologies to extract actionable insights from our massive datasets.

The purpose of LabCFTC is twofold: The first is to provide greater regulatory certainty that encourages market-enhancing fintech innovation to improve the quality, resiliency, and competitiveness of our markets. The second is to identify and utilize emerging technologies that can enable the CFTC to carry out its mission more effectively and efficiently in the new digital world.

We are looking at the extent to which we can make parts of our handbook initially machine-readable and then

fully machine-executable. Effectively converting, probably initially our regulatory reporting rules, into truly unambiguous rules that machines can interpret and implement directly.

Where this rapid shift of the financial landscape will end up is not yet clear, but for regulators, I can confidently say that remaining open, engaged and globally connected will mean the best chance for this technology to bring benefits to all participants in the financial sector.

The end goal of a data-driven supervisory process is to shift from a retrospective to

a forward-looking approach. The fast-growing amount of data reported to supervisors combined with technological improvements in fields such as artificial intelligence and machine learning allows for the potential of a much more automated supervisory process.

Whenever there will be functional and market-capable RegTech solutions that require the involvement of supervisory authorities and regulators, e.g. By RegTech-compatible design of reporting requirements, BaFin will be glad to participate in the concrete discussion.

RegTech intersects with SFC's remit in two ways. First, it can

be used to achieve greater compliance and risk control by those we regulate, including both traditional intermediaries and fintech players. Second, we can use some of these technologies to supplement our own risk monitoring, surveillance and supervisory capabilities.

The reason why we're so interested in RegTech is that we see it has the potential to revive better outcomes for consumers. For us it seems that this is a win for us as a regulator, for financial institutions to do their job more effectively and efficiently, and for consumers because it should deliver better outcomes in the end.

POINT OF VIEW

What can banks do to better partner with RegTech firms?

Peter Lancos and Sonal Rattan, Digital Compliance Experts

RegTechs should offer support services for ongoing regulatory changes post implementations

"Many a time RegTech is done in transformational projects staffed by special groups, contractors etc. Once the regulatory solution goes live, the contractors leave and there's no one left to manage the system. Trying to understand who takes over the regulatory changes is a challenge for banks after implementation." – Peter Lancos

RegTechs should understand and appreciate the differences among banks when it comes to compliance and be flexible to build custom solutions

"Every bank set up is different: rules, legal bandwidth, regulatory interpretation is different between banks, so it is hard for RegTech startups to streamline." – Peter Lancos

"One size fits all does not work in banks in terms of regulatory compliance. The way each bank deals with regulation is different. Product RegTechs will find it more challenging than solution RegTechs." - Sonal Rattan

RegTechs will succeed at a micro-level, not at a macro-level

"Fragmentation makes a regulatory strategy impossible - especially due to geographic spread and banks having separate teams set up to deal with individual regulations. "– Peter Lancos

It takes much longer for successful deployment and sign-off than you think

"It sometimes takes 6-7 months to get internal approval within banks for tools that IT can build in 3-4 months. For one of the data aggregation tools that was built in-house in a bank, with no customer interface, it took 43 approvals before it was rolled out in a single country." – Peter Lancos

"It takes 9-12 months for onboarding a RegTech solution and 6-9 months for deployment. So, my advice is give yourself lead time to implement - it takes twice as long to deploy as you think." – Peter Lancos

What can banks do to better partner with RegTech firms? (continued)

Partner with other RegTech providers or with regulatory consulting firms to offer holistic solutions to banks and to make in-roads across disparate compliance teams.

"It is much easier to get budget approvals for the big 4 consulting firms, who are more established than individual RegTechs. Consulting firms are outside the bureaucracy of banks – huge advantage; they can create a unified interface with RegTechs, and get them working within banks." - Sonal Rattan

"I feel it is essential for banks to have regulatory expertise support, to actually write the rules that go into the rules engine of RegTech solutions. Consultants could have a tool box with different RegTech solutions like 'LEGO' pieces that can be combined to create complete solutions. That's the future." – Peter Lancos

Data-based use-cases are most popular for outsourcing

"RegTech firms are useful for cybersecurity and topics such as data transfer, data protection etc. Any RegTech that can add intelligence to data and reduce manual effort is a prime target for use within banks." - Sonal Rattan

> "**For data companies, banks are seeing use cases complementing existing products and white label solutions. The most popular use cases are data privacy and cross border data transfers.**"
>
> **- Peter Lancos**

Wider-ranging and more value-adding collaborations will arise

Collaboration Model	Initiative Examples	Benefits	Players Involved
Bank - Bank	Machine Learning tool for compliance (ING, CBA)	Mutualize cost of compliance and consistent interpretation of regulation	ING, Commonwealth Bank, Nordea, Santander
Bank - Regulator	KYC utility in Singapore	Offer faster digital onboarding service to customers while meeting the KYC requirements	MAS, OCBC Bank, Standard Chartered, UOB, DBS
Bank - Startup	RegTech accelerators RegTech investments	Use advanced technologies for faster, better and cost-effective compliance	Citi, HSBC, UBS, NASDAQ, BNP PARIBAS, Standard Chartered, BANK OF ENGLAND
Bank - Vendor	Cognitive RegTech	Traditional vendors leverage advanced technologies to make strides into RegTech	MIZUHO, IBM Watson
Bank - Regulator - Startup	Distributed ledger for regulatory reporting	Develop effective, future-proof solutions that meet the needs of all parties involved	RBS, FCA, r3.
Startup - Startup	Comprehensive compliance offering	Combine niche technology expertise to create a complete solution for compliance	encompass, ComplyAdvantage
Regulator - Startup	Regulator Sandbox Regulator accelerators	Allow startups to test innovative business models and allow regulators to experiment with new technologies for supervision	FCA, Tradle, R²A
Regulator - Regulator	Home-Host regulator collaboration	Harmonize policies across borders to promote banks and fintechs to expand and operate smoothly	ASIC, FCA, MAS

Collaboration models and new ways of working are emerging between all parties of the regulatory ecosystem.
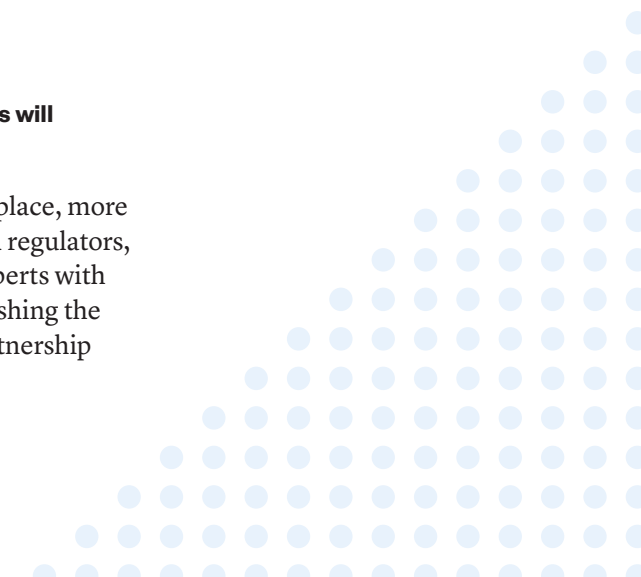
Conclusion

> " Realising the benefit of Innovation doesn't miraculously happen just by buying a software or investing in a startup. It's a journey of incremental steps in experimentation, discovery and transformation. And achieving a transformation isn't easy, it's about processes and organisational culture as much as it's about technology.
>
> - Kevin How, Alvarez & Marsal "

RegTech 2.0 will emphasize the implementation of propositions into the mainstream.

As this sector transitions into a next phase of growth, stakeholders are seeking ways to facilitate mainstream adoption of RegTech solutions to their compliance challenges which are getting ever more complex. Finding efficient ways to get a technology solution understood, approved and deployed is part of the puzzle that needs to be solved as soon as possible. Building on these implementation success stories (and learning from the failures) will be an important aspect of RegTech 2.0.

RegTech tools are going to be a catalyst for a broader reengineering of compliance processes.

Technology solutions currently available and those still to emerge will enable a rethinking of existing regulatory compliance models, having a global impact on both banks and regulators. Fulfilling regulatory compliance needs to become more cost-efficient and sustainable for banks in the long-term. Regulators, on the other hand, are on a journey to utilise RegTech to upgrade their supervisory and risk monitoring capabilities.

Broader collaboration and new modes of partnerships will emerge.

While many collaboration efforts are already taking place, more partnership modes - RegTechs and banks, banks and regulators, RegTechs and regulators, and regulatory domain experts with RegTechs - will only strengthen the industry. Establishing the factors that support environments for successful partnership models will be an integral part of RegTech 2.0.
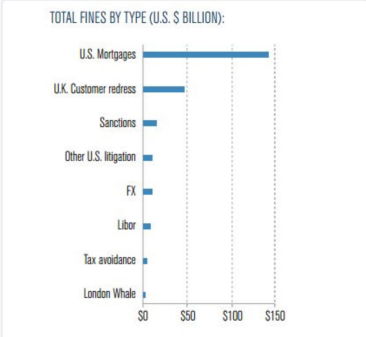
RegTech on Twitter

NXTERA Ltd @NxteraUK · Oct 16
Bank of England takes another step towards embracing **DLT**, RegTech
financefeeds.com/bank-england-t... via @FXFinanceFeeds

Bank of England takes another step towards embracing DLT, RegTec...
The firms the Bank of England's FinTech Accelerator would be working with in the latest cohort of proofs of concept include Chain, Digital Reasoning,...
financefeeds.com

Waymark Tech @waymarktech · Jun 13
Fines have been rising in #finance since 2009. Shows you the need for #regtech. (graph from @alvarezmarsal) #compliance

TOTAL FINES BY TYPE (U.S. $ BILLION):

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#LegalTech Startup Financings Take Off As Automation Hits White-Collar Industries
cbinsights.com/research/legal... #insurtech #fintech #regtech

Stefanie Zinsmeyer @StZinsmeyer · Jan 10
RegTech has made it possible **for** supervisors to collect huge amounts of data from digital financial services. This can help **regulators** do a better job of supervising DFS. But if more data is being collected supervisors could find themselves struggling more than before.

CGAP ✔ @CGAP
Today's technology has made it possible for supervisors to collect massive amounts of granular data from financial services providers – but should they? goo.gl/HGi1PL #financialinclusion

@ALEXKWIATKOWSKI • OCT 10
Collaboration, as I think we all know, is key to the future of FS and the sector's use of fintech/RegTech

@FINTECH_MATT • OCT 26
Any compliance officer will tell you- compliance is expensive. More damaging tho is the cost of noncompliance

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China's Central bank to regulate rapidly growing #fintech http://bit.ly/2w1quty #regtech

@HEAVENS_LUCY • OCT 5

Investments in #regtech firms grew >38.5% between 2012 & 2016 with #London the global leader in deals http://bit.ly/2yJsyUp @burnmark_
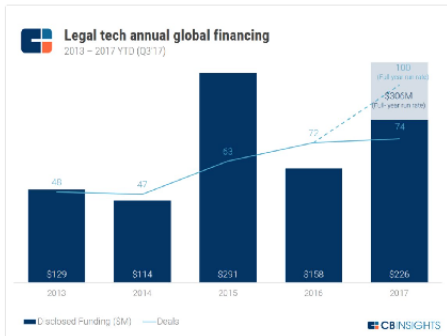
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Regulatory changes needed to foster growth of #fintech in the Middle East http://bit.ly/2iFpjHY via @gulf_news @citi

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Regulators are catching up on #regtech collaboration with @MAS_sg setting up a data analytics group via @OpenGov_Asia

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