



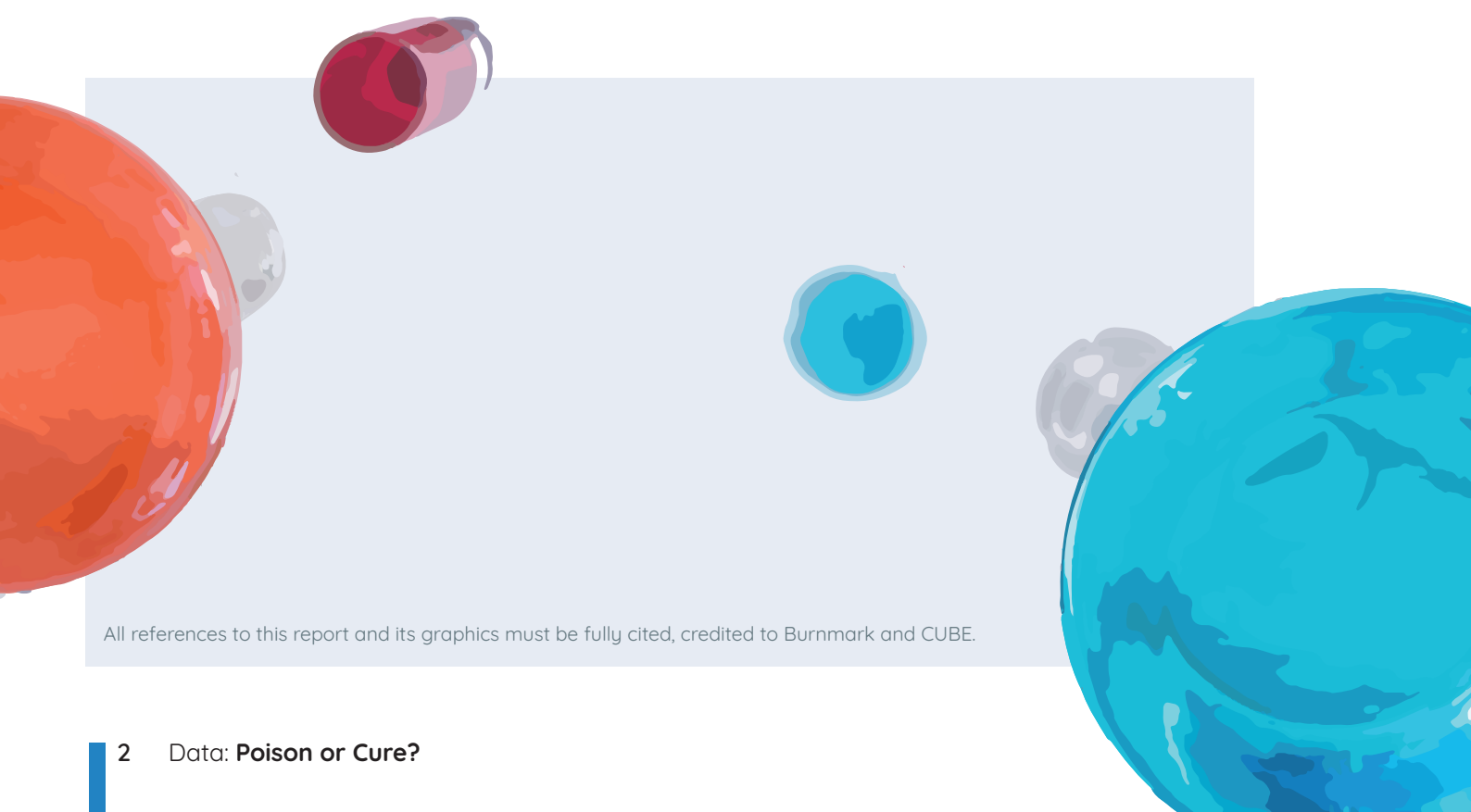
# Data: Poison or Cure?

How data intelligence is the  
cure for complex compliance



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## Editor's Note

I am pleased to present the findings from our latest research report, **Data: Poison or Cure?** With thanks for support from CUBE, a RegTech provider taking the entire regulatory internet and transforming it into regulatory intelligence. As the report will show, financial institutions continue to grapple with vast amounts of data, driven in part by increased digitization in 2020. With that in mind, CUBE makes for a fitting sponsor for our report.

**Over the past ten years we've seen a dramatic increase in regulatory activity over the past ten years - from innumerable volumes of new and amended regulations to increased complexity in compliance and reporting requirements. These are in addition to considerations around managing essential data security, privacy and consent-related concerns.**

Regulations around digital customer behavior constitutes more than 70% of new regulation today. The sheer volume and velocity of regulations published in last year stood at more than 300 million pages of regulatory documents. This complexity is further increased by the requirement to meet multi-jurisdictional compliance needs and deal with regulatory overlaps and inconsistencies.

2020 presented its own set of compliance challenges, piled high on top of pre-existing complexities. Financial institutions had to 'go digital', fast. It was imperative to continue to interact with customers (retail and corporate), using methods and channels that hadn't existed before, or were considered 'sci-fi'. Agility was essential to continuing business-as-usual, which meant finding new sources of revenue, handling digital onboarding, managing employees who were working remotely - all while remaining operationally effective.

RegTech has had to adapt to these changes too. At Burnmark, we looked at trends from the past year and found that the keyword that kept cropping up was data. Every trend we uncovered within RegTech revolved around data. Alternative data, especially, has had the biggest impact on RegTech and the wider industry across 2020. We have seen a rise in the use of devices from drones and wearables to new data points like automotive data and



social media being used in the pursuit of revenues, customer retention and efficiency. Data is being captured from websites, chatbots and mobile apps like never before.

Analytics-based tools and dashboards that configure this data have also been trending. Biometrics, predictive analytics, regulatory bots, big data analytics and cloud computing were areas with a huge amount of interest from startups, regulators, investors and banks. The shift towards a technology-oriented Chief Compliance Officer has also occurred in the past year, with several banks looking to hire data experts in the role.

In this report, we have devoted a section to emerging technologies where we explore the continued opportunities we see with artificial intelligence (AI). The future of AI looks set to be all about collaboration, with different parties of the regulatory ecosystem coming together to share data visualization and dashboards for better regulatory intelligence. Risk management techniques have evolved - the heightened risk around working from home, cybersecurity challenges and alternative data have all contributed to the creation of a new industry where RiskTech meets RegTech. Machine Learning (ML), Robotic Process Automation (RPA), Natural Language Processing (NLP), etc. have evolved as common tools between RiskTech and RegTech, used to mitigate risk and find efficiency for the risk, legal, audit and compliance teams. From money laundering alerts to sentiment analysis for anomalies, these tools and technologies in the RiskTech world are actively becoming integral to compliance and reporting.

Towards the end of the report, you can see the findings we have accumulated from our conversations with a diverse group of individuals working within large financial institutions. We asked them what impact 2020 has had on their businesses, their digital onboarding priorities and investment strategies.

We really hope you enjoy reading this report and find the opportunities around data in the wider RegTech space as interesting as we did.

**Devie Mohan**  
Founder, Burnmark

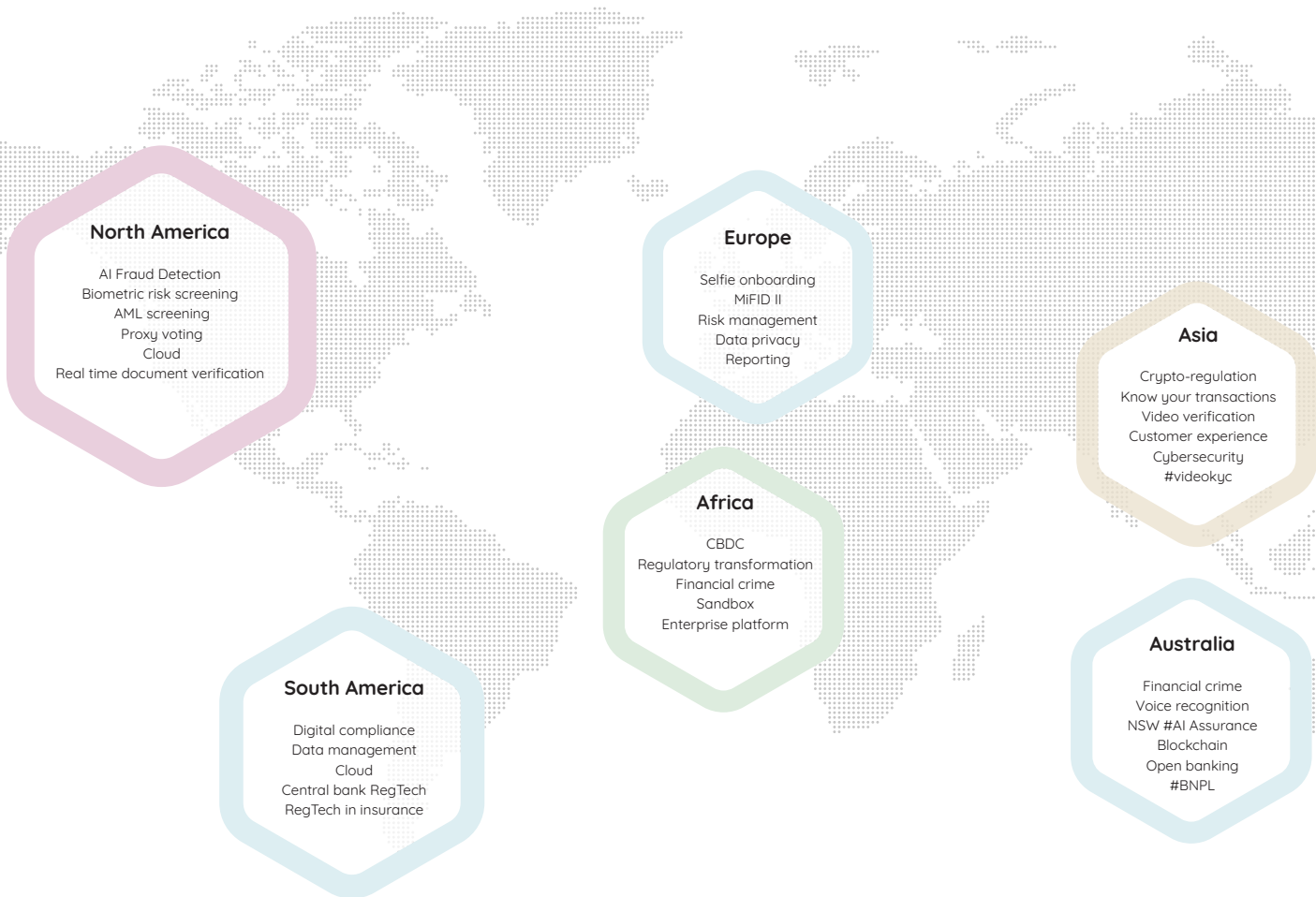
01

# Global RegTech Trends



## Keywords 2020

Burnmark has derived the keywords from secondary research of trends across countries. We looked at regulator consultations, banking CEO interviews, new startup announcements, startup product launch announcements and trends on social media to come up with the most impactful keywords by continent.



Source: Burnmark

02

# Alternative Data as an Opportunity



# Alternative data, supported by the Internet of Things, is enabling the analysis of digital behavioral patterns for a wide range of banking functions

## Alternative data

Financial and non-financial information that is secured from non-traditional sources. The data is then run through various analytical tools to derive insights on digital footprints and digital purchase behavior that complement information received from traditional sources.

			
<p><b>Sensors</b></p>	<p><b>Automotive data</b> Financial services firms are building capabilities for next-generation insurance products based on connected car datasets.</p>	<p><b>Health apps and devices</b> Health apps and wearables used by medical professionals provide useful data for health insurance and life insurance products.</p>	
			
<p><b>Location</b></p>	<p><b>Geolocation data</b> Shopping destinations, leisure behavior, driving and commuting patterns give real-time data about consumer purchase behavior.</p>	<p><b>Satellite imagery data</b> This is already being used in urban planning, related property financing, disaster management, agricultural insurance and land cover mapping.</p>	<p><b>Drones</b> They are widely being used for commercial loans, fire damage insurance, agricultural financial products and virtual site visits.</p>
			
<p><b>Websites</b></p>	<p><b>Social media data</b> Social media data is used in banking services ranging from onboarding and customer support to credit scoring and product offer management.</p>	<p><b>Website and traffic data</b> Website onboarding and purchase behavior data is widely used in the creation, design and pricing of financial products and services.</p>	<p><b>Web scraping</b> This is being used for lead generation, market analysis, price comparison, accounting as well as with open banking APIs.</p>
			
<p><b>Devices</b></p>	<p><b>Super apps</b> Super apps can capture data that a traditional bureau does not and enable financial inclusion and credit scoring.</p>	<p><b>Mobile phone usage</b> Mobile phone usage data, and data from bookmarks to installed apps to battery levels can be used in alternative lending and credit scoring.</p>	
			
<p><b>Psychometric</b></p>	<p><b>Behavioral biometrics</b> This is widely used by banks in digital onboarding, credit scoring, branch digitization as well as in consumer risk management.</p>	<p><b>Transaction data</b> Financial services firms can use financial transaction data to gain insights about customer spending behavior.</p>	
			
<p><b>Others</b></p>	<p><b>Expert views</b> Interviews and announcements from supervisors, competing firms and industry experts can help give a sense of interest rate outlook.</p>	<p><b>Online database</b> Database of companies and corporate registers in various countries can be tapped to locate corporate revenue and management information.</p>	

\*The above list is not exhaustive.

## Digital Onboarding

### Financial institutions have adopted digital onboarding in a big way in 2020

**February, 2020**

These Argentina and Panama-based banks signed up for selfie-based onboarding that uses face and document recognition to compare selfies to ID photos.



**May, 2020**

Luminor, a Lithuania-based bank, performs client identification with the help of a biometric 3D map of the face created with optical character recognition (OCR), data digitization and data review algorithms.

**Luminor**

**June, 2020**

Tandem, the UK-based challenger bank, signed up for passwordless multi-factor authentication technologies to handle PSD2-compliant strong customer authentication.

**TANDEM**

**August, 2020**

Texas-based Kleberg Bank digitized their account opening process with eSignatures that helped convert a 30 minute semi-digital onboarding process into a 2 minute fully digital one.



**September, 2020**

The Korean investment bank, KB, launched a biometric digital onboarding programme with facial recognition systems and integrated OCR. Its app M-able now allows fully digital onboarding using selfies and photo ID cards.



### Regulators have encouraged the use of technology for digital identities and verification in several countries around the world

**April, 2020**

SEBI in India has allowed the use of eSignatures, digilockers and electronic documentation to facilitate online know-your-customer (KYC) for investments and trading.



**April, 2020**

National Bank of Ukraine has allowed banks to conduct identification and verification using eSignatures as well as reading electronic chips on a biometric passport/ID card using near frequency technologies.



**April, 2020**

Australian Transaction Reports and Analysis Center has permitted the use of a risk-controlled ID proofing system using video calls and selfies.



**July, 2020**

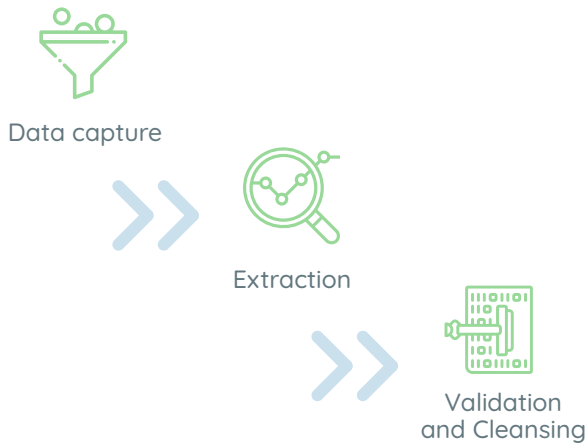
The Central Bank of Malaysia has Issued an eKYC policy to allow financial institutions to use video calls or utilize technology like artificial intelligence, machine learning and predictive algorithms to handle KYC.



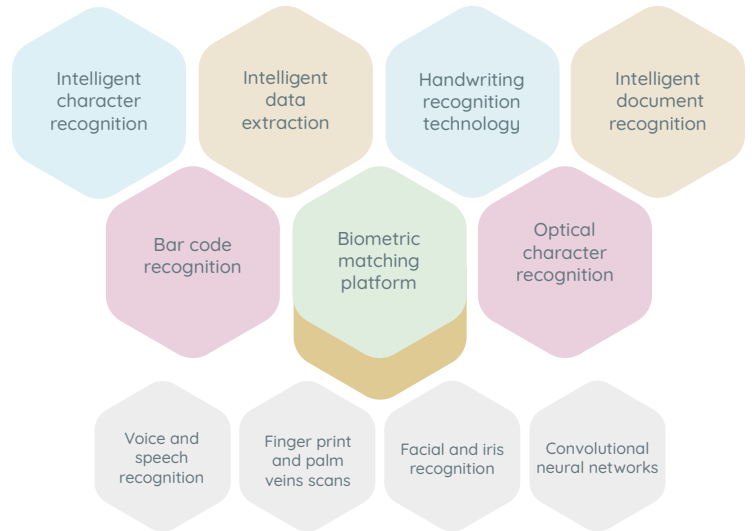


The key technologies for digital onboarding have evolved considerably in 2020

Key steps:

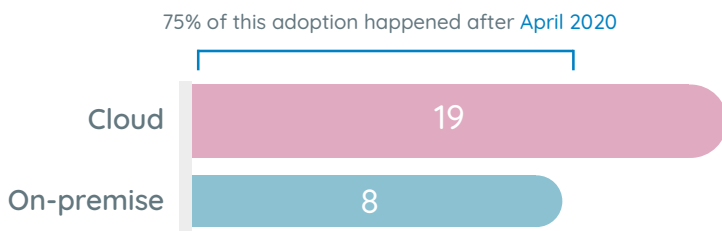


Key technologies:



There is a clear shift away from on-premise technologies to cloud-based technologies

Tier 1 financial institutions that invested heavily in:



Source: Burnmark



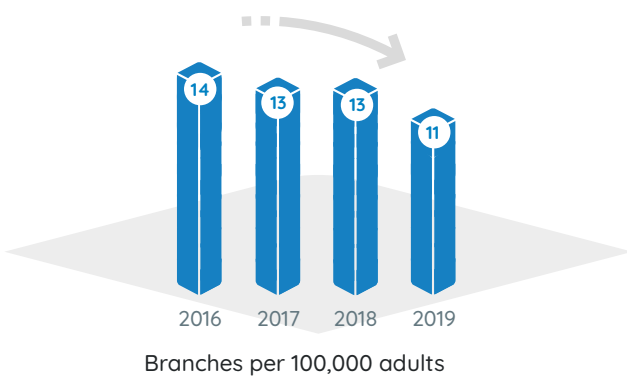
Insight

Community banks still seem to be adopting managed services and on-premise hosting services to manage their increasing operational costs and bring in innovation quickly.

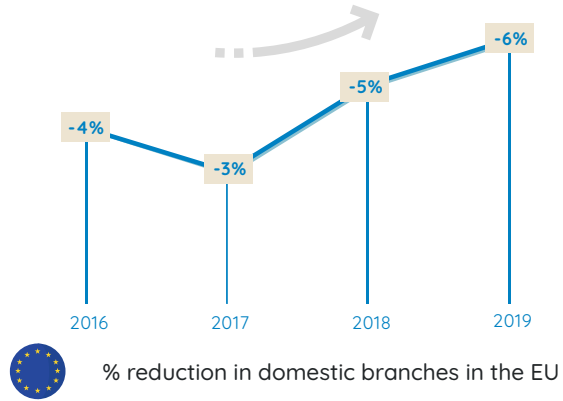
Most technologies for digital onboarding are currently on cloud



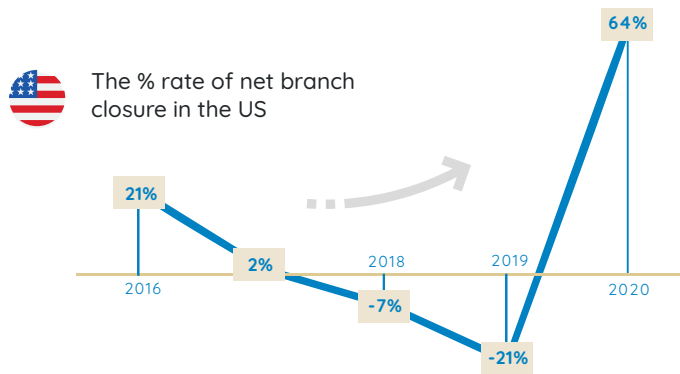
## Bank branches are closing at a faster rate than ever before



Source: The World Bank



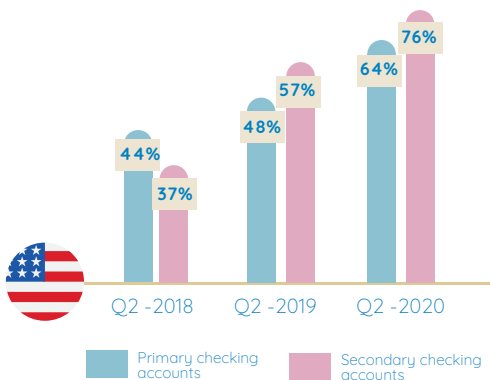
Source: The European Banking Federation



Source: S&P Global

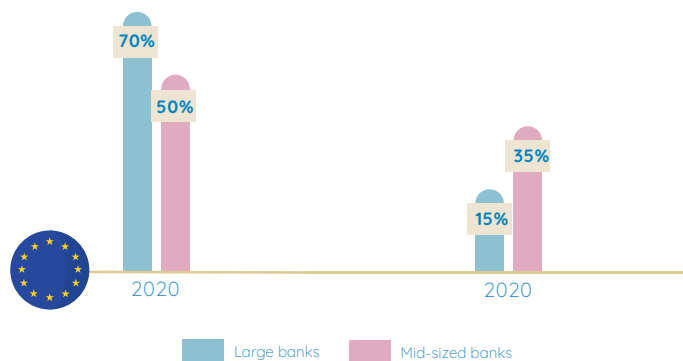
## And financial institutions have adopted digital onboarding in a big way

% of customers opting for digital onboarding for new accounts



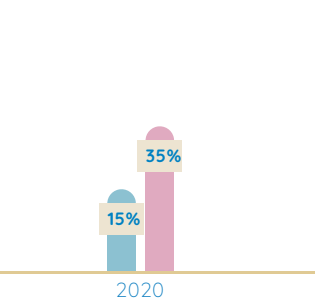
Source: Forbes

% of banks providing complete digital onboarding to retail customers



Source: Fintech Finance

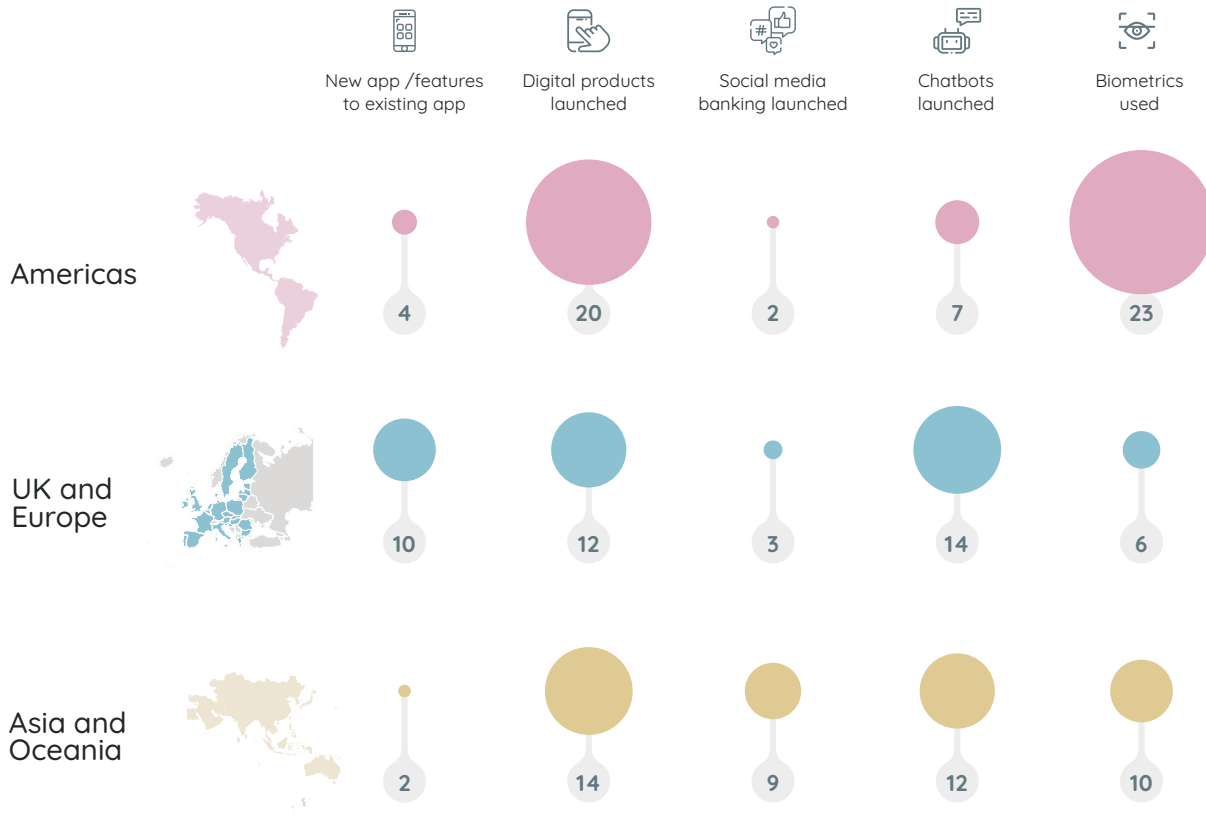
% of banks providing complete digital onboarding to corporate customers



Source: World Bank, S&P Global Market Intelligence, paymentcardsandmobile.com, Forbes, fintechf.com, nfcw.com

We looked at what a ‘digital footprint’ meant to financial institutions in 2020

Investment in a digital footprint from January ‘20 to March ’21.  
A study of 160 global financial institutions.



Source: Burnmark



Insight

We researched 160 global banks and financial institutions to understand their digital footprint. 93% of all researched institutions launched a digital product or channel in 2020-2021.

However, the challenge remains to make the process smooth and efficient.

## Globally, onboarding related technology companies have seen investor and client interest in their offerings

### April, 2020

An Israel-based developer of biometrics security technology raised \$145 million. It has a presence in the digital identity space for developing next-generation behavioral biometrics technology that integrates fraud detection and authentication capabilities.

### April, 2020

A London-based startup with a focus on artificial intelligence based ID verification platform raised \$100 million to support its growing customer base in the US, building alternative identity verification layers and working on projects like virtual voting.

### July, 2020

A Madrid-based startup providing biometric facial recognition technology using artificial intelligence has achieved a system to identify the face behind masks.

### October, 2020

The venture capital arm of a UK-based bank has invested in a Tel Aviv-based startup that provides technology to remove the need for passwords.

### December, 2020

A London-based financial data provider has tied up with Hong Kong-based RegTech startup which provides digital onboarding solutions around corporate KYC automation through live connections with company registries.

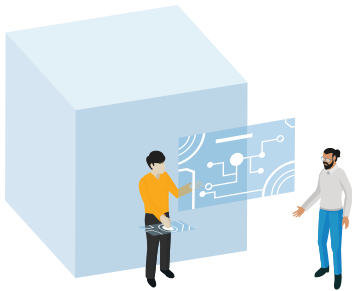
### February, 2021

A Spanish company specializing in selfie-based biometrics added 22 new clients in 2020 indicating a growing demand for biometric solutions like contactless access and 100% digital onboarding.

## Physical customer touchpoints are increasingly being converted to digital ones

Financial institutions are sitting on a treasure chest of data. Today, data enters into the banking system through multiple touchpoints and enables the design and implementation of customer lifecycle journeys and relationships. Not only

are institutions exploring new means of capturing data but are also increasingly gaining access to new types of data. Gamification and analytics of this data opens up even further opportunities in retail and corporate banking.



Institutions are designing and offering products that suit and cater to the customer lifecycle journey.



Institutions are creating and elevating customer experience to new levels of satisfaction.

### Digital customer touchpoints:





There's not a single CEO who doesn't think about this (data's ability to transform the company-customer relationship). It is extremely powerful.



Srini Nallasivan

Chief Analytics Officer, US Bank, June, 2019



## Branches

### 2020

The Portland, Oregon based Umpqua Bank had all 238 branches open through 2020 with appointments, where the branches were being operated mostly as Centers of financial consultation. They also used branches as community spaces for customers to relax and connect with personal bankers. The branch used large interactive screens for information disbursement on the bank's products and services.



### 2020

First National Bank of Pennsylvania converted the format of branches to a consultation-driven system with online prior booking of appointments with the bankers. This resulted in appointments increasing from 21 to 2700, between January and April 2020.



## ATMs

### 2020

Batopin, a cloud-based concept of an ATM was launched in Belgium involving Belfius, BNP Paribas, Fortis, ING and KBC. It aimed to provide 95% of Belgians with access to "a modern ATM service" within five kilometers of their location.



### 2020

Mastercard started providing a 'contactless' cash withdrawal experience across ATMs for its cardholders, facilitated by scanning a QR code displayed on the ATM screen of all participating banks.



## Mobile apps

### 2020

Credit Agricole simplified the procedure of payment of invoices using its mobile app using OCR technology and camera after culling all irrelevant data from the bills.



### 2021

ABN Amro's mobile banking app reached the magic number of 1 billion logins in 2020 with the bank deciding to add a range of new functionalities to the app in 2021, including integration with Google Pay.



## Social media

### 2021

South Africa-based Nedbank became one of several banks to launch a WhatsApp-based payments service in 2021. This is accessible to anyone with a South African identity document and bank account.



### 2020

Alfa Bank Kazakhstan, a subsidiary of Russia-based Alfa Bank) started using WhatsApp in 2020 to enable their employees to work remotely, and now handles 95% of all customer requests via WhatsApp. They saw a 15% increase in the number of requests processed and a 30% decrease in operational costs.



## Chatbots

### 2018-2021

Bank of America, since the launch of its voice activated virtual assistant ERICA, handled 50 million client requests within a year of its launch. It exploded in popularity in 2020 with 19.5 million customers and 105.6 million transactions on ERICA in Q1 2021 compared to 12.2 million customers and 27.8 million transactions in Q1 2020.



### 2020

Dubai-based Mashreq Bank launched the first digital engagement banking bot of the region which acted as a visual and conversational virtual chatbot assistant with the ability to cater to banking service requests.



### 2020

Kuwait based Burgan bank launched its voice enabled chatbot, powered by artificial intelligence and natural language processing, built to understand customer enquiries in an intuitive way while handling privacy and security concerns.



## Contact centers

### 2020

Rabobank realigned its contact Center strategy in a way that all customer touchpoints and communications—voice, web, chat and mobile—run on one platform, providing omnichannel management efficiency. If customers are browsing a particular page often, the agent who is informed about the products on that page handles the call and query.



### 2020

Greater Bank, an Australian bank, experienced a 50% increase in calls during 2020 and handled this by moving its contact Center staff to 40 remote locations connected by cloud technology, with no break in service.



We found use cases for several alternative data points in banks, insurance firms and financial institutions in 2020

**September, 2020**

This life insurance provider from Massachusetts, MassMutual, has decided to include the use of analytics on health data secured from wearable devices to predict long term mortality risk - thereby deciding premiums.



**August, 2020**

ICICI Bank, a leading private sector lender from India, started using satellite data to assess credit worthiness of its customers with the agricultural sector along with land verification.



**November, 2020**

Goldman Sachs' M&A team is leveraging drone technology to conduct virtual tours of prospective M&A clients.



**November, 2019**

Philippines-based CIMB Bank has started using smartphone data to assess the behavioral score of an applicant. The bank uses an external app to score applicants who possess insufficient traditional credit review data.



Bank of England uses datasets of online residential housing listings which provides region-specific dashboards of real estate activity, pricing, demand and supply, financing etc. that helps with their policy decision making.



**BANK OF ENGLAND**

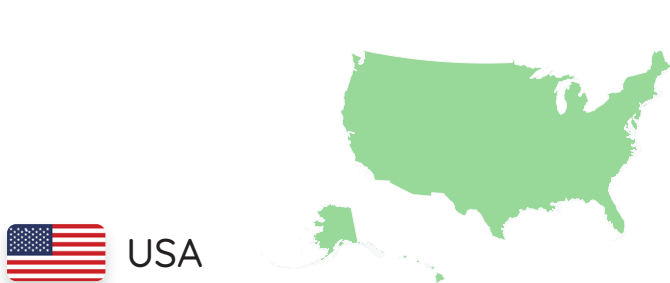


**Insight**

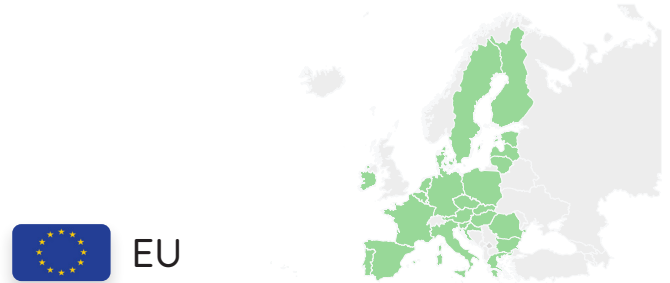
Alternative data will see increased adoption by financial players in this decade. However, it will also create a new set of challenges on the regulatory side as AI-driven, alternative data-based business models will have to adhere to data privacy issues, consumer data protection regulations and market abuse laws that will necessitate raising the bar for the compliance team.



## Regulations and compliance around data in 2020-2021



USA



EU

### Anti-Money Laundering Act (AMLA)

Provides for the most substantial and sweeping legislative reforms to the US Anti Money Laundering (AML) and Counter-Terrorism Financing (CTF) laws since the Patriot Act of 2001. The key areas are around whistle blower norms, beneficial ownership registration and violation of laws of the Bank Secrecy Act.

### Washington Privacy Act

Washington state will once again try to pass data privacy regulations akin to General Data Protection Regulation (GDPR) and California Consumer Privacy Act (CCPA). It proposes to create an inter-agency task force of local, state and federal officials to produce a comprehensive approach to digital identity verification.

### Security incident notification

The Office of the Comptroller of the Currency (OCC), the Federal Reserve and the Federal Deposit Insurance Corporation (FDIC) have jointly proposed that banks will need to notify the regulator about any “computer-security incident” (data breach) within 36 hours of occurrence.

### Kleptocracy Asset Recovery Rewards Act

Department of Treasury’s whistleblower reward programme for money laundering became law in 2020.

### Digital Finance Package

The European Commission adopted a Digital Finance Package in September 2020 that includes legislative proposals on digital finance, retail payments strategy and crypto assets. This is expected to drive a technology-friendly cross-border and sectoral data sharing framework with adequate consumer protection.

### Video and online identification

The Swiss supervisory authority FINMA has been revising and holding consultations around due diligence requirements for client onboarding via digital channels, the details of which have been included in a circular titled ‘video and online identification’.

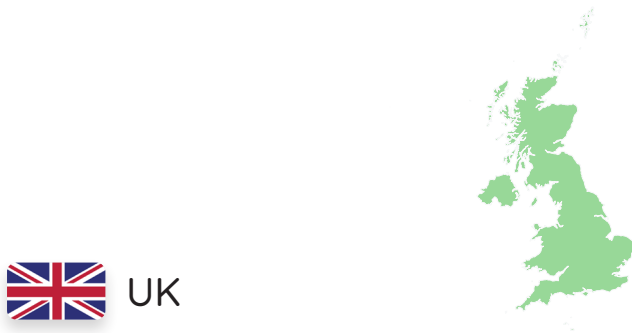
### eIDAS evaluation

The European Commission is evaluating the regulatory framework for electronic identification, authentication and trust services (eIDAS) and is likely to introduce a European Digital Identity by mid-2021 to secure the identification for public and private online services; especially cross border digital services.

### Cryptocurrency exchange regulations

The Estonian government passed legislation to tighten licensing requirements for cryptocurrency firms and have said all virtual currency service providers will be treated as normal financial institutions.

## Regulations and compliance around data in 2020-2021



### eIDAS certificates

Post-Brexit, alternatives to eIDAS certificates will be allowed to be used by Third Party Providers (TPPs) to access customer account information and also allow Account Servicing Payment Service Providers (ASPSPs) to accept legacy open banking confirmation certificates for 6 months of transition.

### Data Protection Act

UK's Data Protection Act (based on the EU GDPR requirements) has been formed into a new, UK specific data protection regime. UK government may consolidate the two laws (UK-GDPR and Data Protection Act, 2018).

### Duty of care consultation

The 'duty of care' consultation will be initiated by the FCA in 2021 that will focus on strengthening principles of businesses and propose firms' duties towards customers.

### Central Bank Digital Currency (CBDC) taskforce

Announced by Bank of England and HM Treasury, this currency is proposed to be for use by households and businesses and will exist alongside cash and bank deposits. This move is in line with the trend of decline in usage of cash.



## Asia & Oceania



China's micro-lenders (including fintech lenders) face regulatory overhaul as the capital and leverage requirements are being reformed. Currently they are only regulated by local and provincial financial regulation offices.



New Digital Signature Act took effect in South Korea that enabled the use of electronic signatures to ease conduct of digital business. The law also supported the use of identity proofing technology like biometric authentication and blockchain.



Japan has proposed regulatory amendments concerning fund transfer service providers, crypto asset exchange service providers and industry-wide intermediation services for various products of financial services.



The Reserve Bank of India has allowed banks and regulated lending institutions to conduct video-based customer identification processes for remote onboarding of customers. The onus lies on the regulated entities to ensure safe and secure storage of the video recording with time stamp information.

While regulators have risen to address the exceptional year that 2020 was, by providing guidance about remote working, eKYC, digital onboarding and cyber caution; the regulatory burden on banks and other financial institutions is not expected to slow down in 2021. Continued regulatory focus on data quality and reporting will prevail across the financial spectrum.

## New world, new data, new problems

### June, 2020

Citibank, the US based global banking group, announced a new team of 80 bankers from three existing groups – financial strategy, data science and shareholder activism – to use the power of data coupled with the banker’s expertise to offer solutions on a range of issues from capital raising and structure to activist defense.



### June, 2020

BNY Mellon rolled out new data platforms in relationship with Microsoft - cloud-based data vaults, distribution analytics and ESG data analytics – meant to help investment managers better manage their data.



**“Our vision is to take data from being a by-product of our traditional business, to thinking about it as the ‘new oil’ and an asset class in its own right.”**

Charles Teschner - Global Head of Data and Analytics Solutions, BNY Mellon

To identify the order of importance of customer level products with intent through data captured from campaign responses, digital footprints and web behavior, HDFC Bank in India used an advanced analytics platform, natural language processing and machine learning to process big data, verbatim feedback and strong recommendations. The outcome was the first of its kind derived in the Indian banking space which saw non-relevant communication reduced to 30% and engagement rates rise significantly.



**“Data saves the day at HDFC Bank. We understood our audience previously, but 2020 is different. To adapt to the change, we built additional arbitration layers over individual propensities, to orchestrate the feedback captured across customer’s touchpoints and recommend the right products in order of importance.”**

Sahil Aneja - Data Scientist.

Man Group, the publicly traded hedge fund, launched its data science group in January 2020 and has been evaluating more than 50 data vendors per quarter indicating a growing interest in alternative data led by advances in cloud computing and analytics tools to process unstructured data.



**“Though alternative data has been around for a decade, demand has been amplified since February, 2020. Generally, funds are purchasing more data and this is because there are more data vendors entering the market and different applications as well as interest from various sides of the investment verticals.”**

Hinesh Kalian - Director of Data Science.

## New uses of traditional data

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Alternative and new types of data are fascinating and bringing about innovative use cases, but firms are also finding several new use cases around available voluminous data in banks and financial institutions. Tools utilising big data, analytics, machine learning and natural language processing have helped bring these data points to the forefront of customer journeys and decision making.

We sought feedback from the market on whether they have observed any such use cases around traditional data recently.

### Compliance gap analysis tools

- This is an increasing area of interest for most global banks.
- Banks have recently used this tool for its clients to:
  - Assess under-staffed regions
  - Incorporate service areas such as corporate governance or cybersecurity
  - Helping customers who need to evidence understanding of all applicable regulations for their global businesses.

### Horizon scanning tools for regulatory forecasting

- These can be used for reactive updates (keeping the library up-to-date) or proactive alerts, to which every customer has a different threshold for how proactive they choose to be (for e.g. proposed rules versus regulatory blogs).



**Recognize that use of alternative data may improve the speed and accuracy of credit decisions and may help firms evaluate the creditworthiness of consumers who currently may not obtain credit in the mainstream credit system.** To the extent firms are using or contemplating using alternative data, the agencies encourage responsible use of such data.

Federal Regulators' Joint Statement  
December 2019



- This has recently been used to help banks who sought the earliest possible forewarning on proposed and pending regulatory events.
- Another use is for scanning insight articles to review potential trends they are seeing across the global regulatory landscape and anticipate changes as a result of such activity.

### Regulatory bots for predictive analysis

- Can be used to review potential trends they are seeing across the global regulatory landscape and anticipate changes as a result of such activity. Bots are being leveraged to help compliance become faster and more nimble with their internal decision making and processing.
- There is incredible interest on how data gathering and initial triage can be automated with relevancy being the highest priority.

### Existing data being used for new and innovative financial products

- Regulatory data has always been a key element to market data. The challenge is that it is delivered in its traditional format - unstructured text. As customers start to appreciate how RegTech can structure traditional data, use cases are expanded to bolster or supplement the market data sources for regulatory data flowing into systems; be it customer relationship management, market research, trading, investment decisions, etc.

## APIs as an emerging channel for alternative data

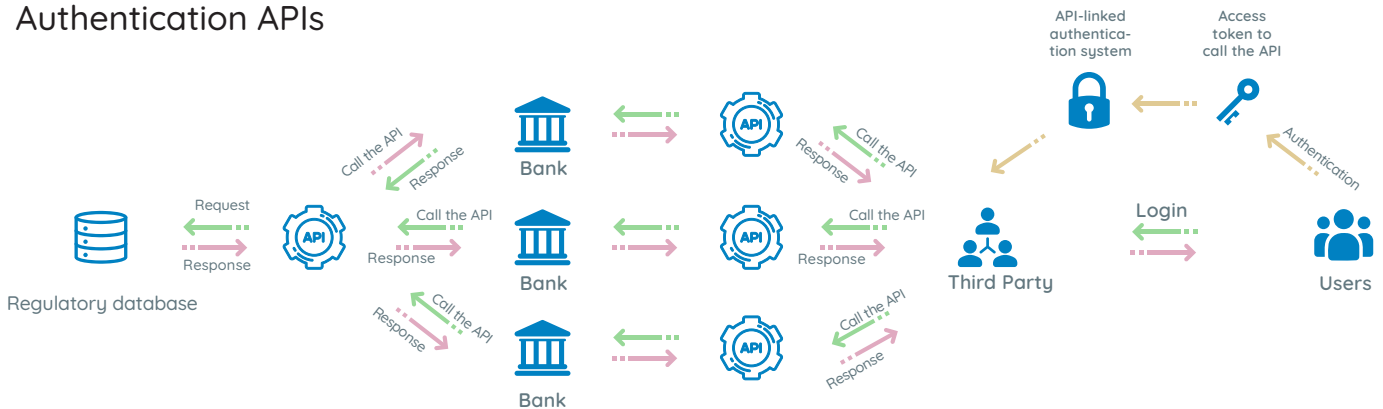
It's not just important for data to be sourced, used and managed, but it's also necessary to find the right channels to share data with third party partners, as well as internal partners. APIs have emerged to be one of the most popular tools in the RegTech world for data sharing - and for those using the REST protocol (Representational State Transfer protocol) especially so.

APIs are increasingly used for open banking, where data sharing is conducted between banks and third parties. Third party providers will receive access tokens to call the API,

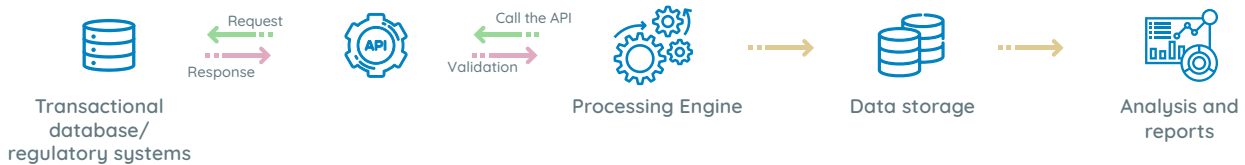
which will then request customer data after user verification. Banks can also use APIs to retrieve open banking standards from regulatory databases and registers. APIs are also used to streamline reporting, by retrieving data either from the transactional database or regulatory systems. The API will get a return of raw data, which will then be processed and stored for further analysis and reporting.

These processes use very similar data flows across use cases, which we have depicted below.

### Authentication APIs



### Open banking APIs



## Use cases around APIs in compliance

### February, 2020

The RegTech prototype tested by Lithuania's central bank involves open banking APIs to automate reporting for financial services firms. Built in collaboration with local tech companies, the API would automatically collect operational data from the bank's servers for reporting purposes.



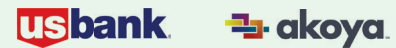
### September, 2020

The data sharing and exchange agreements have helped Wells Fargo and Yodlee share data with third party financial applications on Wells Fargo's platform. Wells Fargo has confirmed the transition of 99% of third party financial app screen-scraping to API-based data exchanges.



### November, 2020

US Bank joined the Akoya Data Access Network to transition from login-based screen scraping to API-based data access for customer account data sharing with third party players and fintech firms.



### June, 2020

Horizon introduced new APIs to its KYCware and AMLcop to further streamline onboarding, identify verification and AML screening. This enables automated KYC checks, encryption, screening of investors/customers/watchlists and systems integration for AML queries.



# Interviews



# Alternative Data as an Opportunity

## Jonathan Holman

Head of Digital, Santander Corporate & Commercial  
Visiting Scholar LIBF University College



### What is your current role in the RegTech industry?

I'm the Head of Digital for Corporate and Commercial Banking (CCB) at Santander in the UK. We support SME, commercial, and corporate customers both directly, with digital technology our customers use, and indirectly with technology that supports our colleagues.

I run a hybrid team of technology and business subject matter expertise, which covers all the horizontal functions of the bank that apply across all of our products and services. This includes servicing, sales, onboarding and financial crime, credit risk, fulfillment and legal, data and maintenance.

### Considering the past two years, how have data sources evolved in banking? Can you share any examples of alternative data sources that have come about?

So if you think about a sales funnel - from advertising, to leads and prospects to CRM based opportunities, to footfall data, to quotes, contracts, orders and deposit activity, e-commerce and payment gateways. And then on to order fulfillment activity, payments of course hit bank accounts, which are then reflected in monthly and annual financial accounts. Every part of most businesses end-to-end journey have been digitized, and so data from these digital sources can be used to track and correlate events leading up to a successful sale and revenue.

Each stage is a proxy for the rest, given normally established conversion ratios. So, if one source is easier to access than another, it can become a useful dimension in understanding things such as the credit risk profile of a business. In addition to this, other e-wallet and payment networks have sprung up outside of the banking ecosystem,

as have e-commerce marketplaces. Data from these sources also provides key insights into cashflows and business performance. In the RegTech space, artificial intelligence (AI) and machine learning (ML) has made scraping data from the entire web and understanding it at pace possible (news, forums, social media and more). This includes the deep web and the dark web.

### Are we seeing an end-to-end value chain being built in banks around alternative data?

Not really yet, however we are seeing banks go up and downstream of their normal data sets (bank transactions and financial account statements) to understand customers and businesses. This includes banks offering invoicing and accounting services, payment integrations with card acquiring services and some online advertising, e-commerce, accounting package and CRM aggregation and integration possibilities too.

### How are you using this alternative data?

We have Validis to aggregate accounting data connected to our credit risk system in the Cloud. We also have open banking data via Fractal Labs, coupled with their QR code and smart invoice payment solution tomato pay, which we'll offer to customers this year. We are looking at how to work these two data sets together, where they've not already been reconciled by the customers to create auto-validation of each data set. We're using Encompass to aggregate RegTech data, including company, individual, screening, adverse media, ring fencing and company court data in addition to stock exchange data and company registrar bodies, globally. We intelligently join and deduplicate the data we get here too.



## Alternative Data as an Opportunity

Jonathan Holman

Head of Digital, Santander Corporate & Commercial  
Visiting Scholar LIBF University College



### Is corporate company data seeing this magnitude of change as well?

Yes, it is. We're also starting to use this data to make our distribution and execution processes augmented and intelligent. Supporting our customers with cashflow forecasts or importer and exporter matchmaking, plus gamified invoices or even intelligent and dynamic lending products in future.

### Do you think the credit bureau model will evolve due to the barrage of new forms of data?

Data, is oil or soil or king, depending on your analogy, but it's very, very important. More data generally is better than less, and more correlated data is useful. So I think upstream and downstream data will continue to be used by banks and others to inform them about their customers risks, needs and next best steps. I think this will affect static data that the bureaus have tended to hold, but validating data, relying on it, and cross referencing it is very useful and helps to build on the trust people have in current ways of working and making decisions. So they will be forced to evolve, to become more behavioral, more real time and richer, but the credit rating agencies (CRAs) will survive as a validated aggregation source.

### Are there any use cases of this data being shared externally in innovative ways?

We are presenting back accounting analysis and cash flow forecast to customers, some of which is informed by AI. But we'll evolve these to include benchmarking against customers peers and industries. We're also hoping to use intelligence to share the content we have in our international proposition about navigating the shift into importing and exporting from and to new markets. We can do this on the basis of which market we project to be the next or even the first one that the company could expand to start trading with!

### Some countries have tried a KYC utility model. Is there merit in this, or does it remove the KYC-related competitive advantages for banks?

There is a Know Your Customer (KYC) and onboarding competitive advantage in digitising and automating the proposition. However this won't last for too long and given the extent to which regulation has become prescriptive now, there isn't really the chance of different interpretations either. So, I think personally the best long-term solution is to deduplicate the costs and efforts for each country as a whole, by having centralized KYC utilities and validation. This would need to be for people and companies and their relationships together.

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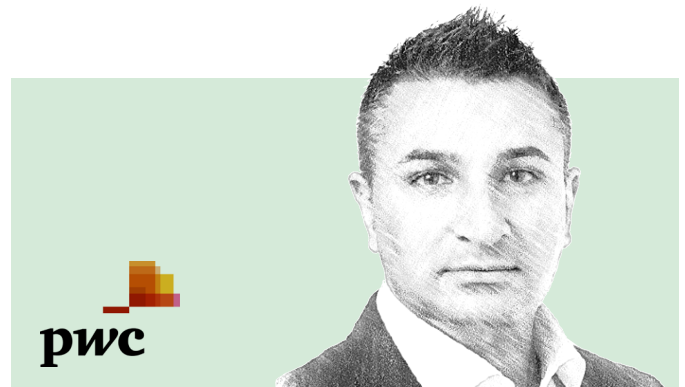
### What do you think are the trends around alternative data for the future?

I'm seeing companies like Localistico aggregate sales funnel data across the whole end to end. I think this will be a trend for consumers and businesses and their data too. These services will give projections and advise on what's best, in the way some utility switching companies are doing. I think this will help embedded finance propositions and lifetime dynamic financial services to exist. As a result of both of these changes, financial services will occur naturally in many parts of people's lives, without feeling like you're stopping running your business to do money or stopping engaging in your social life to pay for tickets or meals amongst your friends and family.

# Data Quality and Data Integrity

## Rav Hayer

Digital & Data Analytics Partner  
PwC



### Could you briefly describe your role at PwC?

I'm a Partner within PwC's Technology, Data and Analytics Practice, driving digital, data and analytics for banking. I also lead privacy for FS and Fintech for the UK. Prior to joining PwC, I spent over 15 years with Accenture, spearheading digital and data for banking.

### What are the key trends you have noticed in the financial services sector over the past year?

Over the last year, the need for rapid digitization of services has led to financial services organizations putting a lot of focus on their data strategies. Institutions are delving into their technology and data processes to improve data quality and better adapt to changing customer and business demands. What drives this?... Data. Data has become the new driving force. The power of insights provided by data has enabled organizations to ride-out the last year.

However, over the course of 2020 the industry, particularly incumbent banks, have also found data challenging, due to legacy IT systems, rigid governance processes and the emergence of new agile players. Banks are currently exploring new data management principles and emerging technology to increase accessibility to data and better service their customers.

### Why is data quality such a big topic from the past year?

Data is forming the basis of decision making with the financial services industry; poor quality data can lead to hidden operational costs, lack of compliance and poorly informed decisions. Quality data is also the bedrock to

enable other emerging technologies such as Artificial Intelligence (AI) and Machine Learning (ML) to operate successfully. Without processes and a governance structure in place to manage data sets, organizations will fall behind the curve as they are unable to gain the necessary insights into their business or customers to stay competitive.

### How can we ensure better processes and better insights, as well as better sharing of these insights?

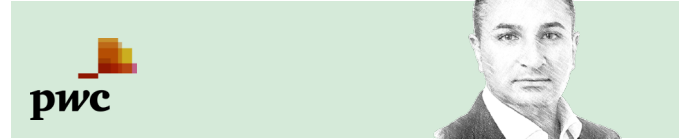
The adoption of emerging technologies, such as Cloud Technology, has and will allow financial institutions to scale in a more agile way, enabling them to better share and interrogate data. The push for Open Banking over the last few years has allowed innovative third parties, who are built on technology enabled platforms, to work with incumbents through API access to customer data. In order for collaboration within the industry to continue, incumbent banks will have to review their internal procedures to facilitate smoother partnerships with Fintechs. By improving API infrastructures, common standards, streamlining third party management and adopting scalable technology, banks will have the opportunity to deliver more customized products to clients and realize new revenue streams, but also survive in the future.

With better data quality and integrity comes more informed decision making. Process intelligence capability can give you real-time data from your processes. This enables analytics to provide insights for better and quicker business decisions, as well as taking action to improve processes. Integrating this into an architecture with other tools, such as GRC systems or regulatory horizon scanning tools, gives you further transparency about how processes are mitigating risks and meeting compliance obligations.

## Data Quality and Data Integrity

Rav Hayer

Digital & Data Analytics Partner - PwC



### Will data monetization options improve with better data quality?

Data monetization is a natural outcome of improved data quality. As data quality improves, the overall services being provided to customers across the ecosystem will improve. Incumbents will need to take a view of the industry beyond the services they provide to their customers. The better quality of the data they manage - coming through and sharing through API's - the more they will be able to use it to identify and mobilize new revenue streams and meet ever-changing, sophisticated customer needs. Data is no longer something collected for compliance purposes, but an asset that can be transformed to unlock key strategic insights, cost savings and new revenue streams.

### You mentioned briefly that it is not all about data quality, but also about data integrity. Does data quality lead to data integrity, and ultimately, data ethics?

Yes, data quality plays a role in the overall integrity of your data, however, data integrity is driven by the organization's overall culture. As data is an outcome of an organization's activities, robust processes will need to be in place to verify that data is complete, accurate and auditable, but also able to withstand external pressures. Without these principles, institutions will struggle to comply with regulation and attest that their data is being used as intended. Ultimately, as financial services institutions use data to drive decision making, they must ensure their products are delivered without bias and provide responsible outcomes to their customers, which leads to data ethics. Data ethics is the next trend we are seeing with organizations as they work to embed frameworks and adapt their culture to protect data and use it as it is intended.

Ultimately, as financial services institutions use data to drive decision making, they must ensure their products are delivered without bias and provide responsible outcomes to their customers, which leads to data ethics. Data ethics is the next trend we are seeing with organizations as they work to embed frameworks and adapt their culture to protect data and use it as it is intended.

### Is the sustainable use of financial services data an attainable dream for the future?

At the moment, sustainable finance is a hot topic and financial services institutions are having to think about how their data can be used to drive their ESG agenda, for example. The industry has to recognise the huge role it plays in driving climate and social change through its services, and the impact this has on how they are perceived. This is no longer a tick-box exercise, but a customer expectation. Banks will need to ensure they have the foundations in place to share data on sustainability. Data relating to investment strategies, diversity and climate change will now take on more of a focus and innovation in this space is expected to grow. Watch this space!

03

# Analytics as an Opportunity



Innovative analytics is now powerful and scalable enough to be widely adopted

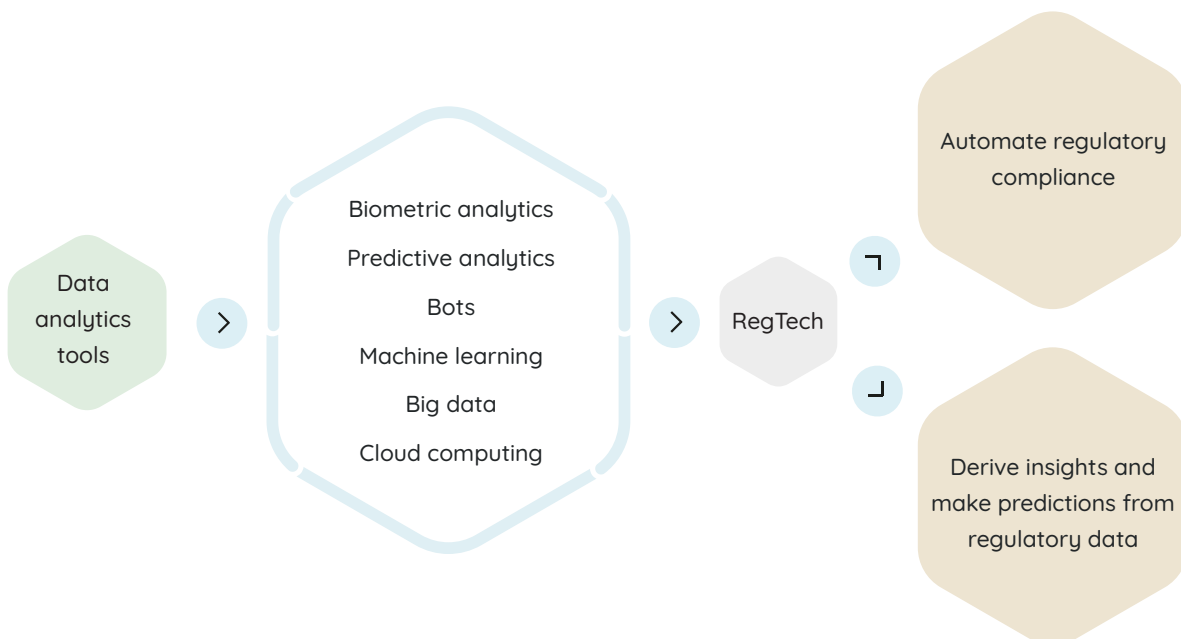


Data offers the intelligence to make sure what the client is being offered by the bank has value and relevance to their choices.

Sam Kumar  
Global Head of Analytics, Standard Chartered Bank.



Banks like Unicredit and Société Générale have launched analytical capabilities on their digital platforms in the past year. The first step for them was to invest in data platforms and APIs to create capabilities for data collection, modification, management and sharing. According to Raconteur, Société Générale combined machine learning with their cash management and foreign exchange digital capabilities to help clients manage all transactions from cash positions to different currencies. Analytics also tend to work closely with APIs to bring in additional capabilities to products.



## Biometric analytics

### Applications in RegTech

RegTech uses biometric analytics to enhance identity management processes. It enables firms to meet KYC and money laundering regulations.

#### Benefits:

Enables speedy and accurate user verification

Possible to create stringent entity and identity models within an organization

Decreases identity fraud

Installs audit trails for transactions

Possible to create stringent entity and identity models within an organization

#### The elements usually captured are:

Signature dynamics

Voice

Keystroke dynamics

Gait

Gestures

### Use cases

#### February, 2021

Sri Lanka-based Commercial Bank provides biometric logins to bank accounts via fingerprints and facial recognition and have added 150,000 new logins through self registrations in six months.



#### February, 2021

Cambodia-based Acleda bank has enabled customers to open accounts and apply for bank cards from virtual teller machines using facial recognition and fingerprint biometrics. The machine provides self-service account opening, ID document scanners and can print replacement cards if needed.



#### May, 2021

United Trust Bank from the UK has used its app to allow dual representing solicitors to use facial recognition and ID verification tools to prove their identity without a face-to-face meeting. The biometric identity check asks for a passport, driving license or national identity card for selfie comparison.



#### November, 2020

Singapore-based DBS Bank has launched online corporate account opening for SMEs through biometric authentication that provides password-less account access through mobile cameras and webcams. According to the bank, the online new account onboarding service takes just 20 minutes.



#### July, 2021

Knab, a Netherland-based challenger bank, has opted to go in for strong customer authentication combined with customer onboarding. They use contactless online and cloud-based biometrics, which are also spoof resistant and automatic with minimal human intervention.



#### August, 2018

Royal Bank of Scotland uses behavioral biometrics to monitor visitors to their websites and apps. As soon as customers log in, software starts recording thousands of movements on the keyboard, mobile app and website. It captures information on the angles at which a customer holds the device, what fingers are used to swipe/tap and how hard or light the customer applies pressure. On a computer, the software collects data on the rhythm of keystrokes and how the mouse is used. It builds profiles based on customers' gestures, and use them as analytics tools.



## Predictive analytics

### Applications in RegTech

Used in financial crimes prevention strategies

Involves the use of statistical techniques to predict the likelihood of fraudulent applications or transactions based on the transaction characteristics

Used in customer profiling, marketing applications, customer support and lifecycle journey mapping.

### Use cases

#### July, 2020

Piraeus Bank from Greece reduced data analysis and report generation time by 30%. The bank streamlined and automated the way it collects and manages risk data and produced reports with greater speed and accuracy with the help of predictive analytics tools around statistical analysis, data mining, management and reporting.



#### January, 2020

Wells Fargo has developed predictive banking analytics systems, which are able to automatically notify customers about unusual situations. If the client has spent more transactionally than average, the system can provide notifications to the customer.



## Bots

### Applications in RegTech

Regulatory bots can play a major role in data compliance solutions

They can scan for new regulations or changes in existing regulations across all countries

They can provide context to rules when there is conflicting legislation when the bank operates in multiple jurisdictions

#### April, 2020

The financial Center's Financial Services Regulatory Authority (FSRA) have introduced a "RegBot" which runs on natural language processing and machine learning that identifies and clarifies information and risk gaps in licence applications. The RegBot is expected to increase business efficiency and reduce turnaround time while ensuring compliance with FSRA's rules and regulations.



## Machine learning

### Applications in RegTech

Combat money laundering through analysis of customer behavior and transactions

Conduct fraud detection by identifying deviances from normal patterns of transactions

More efficient regulatory reporting through automating large parts of reporting and formatting requirements

Identify and perform access management by reviewing and validating accounts

Cybersecurity through pattern detection and cyber-crime mapping

Monitor transactions by reducing false positives

Enable better risk modeling with algorithms applied to large and diverse datasets



The advanced concept of AI and machine learning introduced in recent years has made the qualitative leap to biometric systems.

Yorck Reuber  
CTO North Europe, AXA



#### July, 2020

The multinational Chinese bank implemented risk management solutions backed by machine learning models for its small and medium business clients, significantly improving the accuracy rate of its risk prediction models.



#### September, 2020

The US-based bank initiated the use of machine learning tools to analyze credit risk by predicting default rates and thus risk model scoring in the energy, transportation, media and health care sectors.



#### April, 2021

The French asset manager announced that it will utilize machine learning to estimate carbon emissions for companies that do not report their carbon footprints and is expected to manage this data for 10,000 companies.





## Big data

### Applications in RegTech

Enable fraud detection

Handle compliance and regulatory requirements

Segment customers effectively for marketing, support, etc.

Perform risk management and analytics

#### January, 2019

Citibank is betting on big data through investments in technology start ups and forming collaborations to handle cybersecurity.



#### October, 2020

HSBC, the British multinational financial services group, has been leveraging big data to enrich voluminous quantum of unstructured data for the prevention of financial crime.



## Cloud computing

### Applications in RegTech

Improve data sharing capabilities with regulators

Monitor the current state of compliance against upcoming regulations

Provide better and quicker compliance with fast-changing regulations



With increasing regulations governing open banking, we now have an even stronger case to securely open our systems to external partners. This is where cloud-native and microservice applications come in.



Rudolf Schmidt  
Chief Technology Officer, Fidor Bank



#### November, 2020

Was one of the first banks in the US to announce migration of all its on-premise data Centers to Amazon Web Services cloud, which is expected to improve management of data at a much larger scale in order to deliver an enhanced customer experience.



#### February, 2021

The collaboration was announced to enable the US-based custodian and investment bank to help its clients predict daily settlement failures with a 90% accuracy, incorporate collateral management and liquidity solutions built on cloud as well as digitally transform the settlement process.



## Where did investors of data and analytics see the potential in 2020?

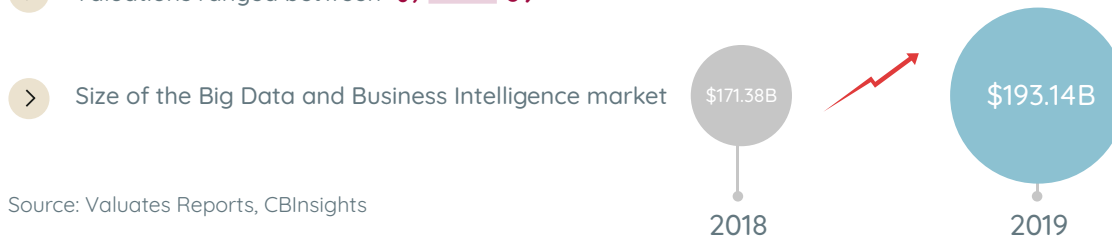
### The unicorns and decacorns of 2020

> Big ticket investments of **≥ \$100M** received by **7** firms.



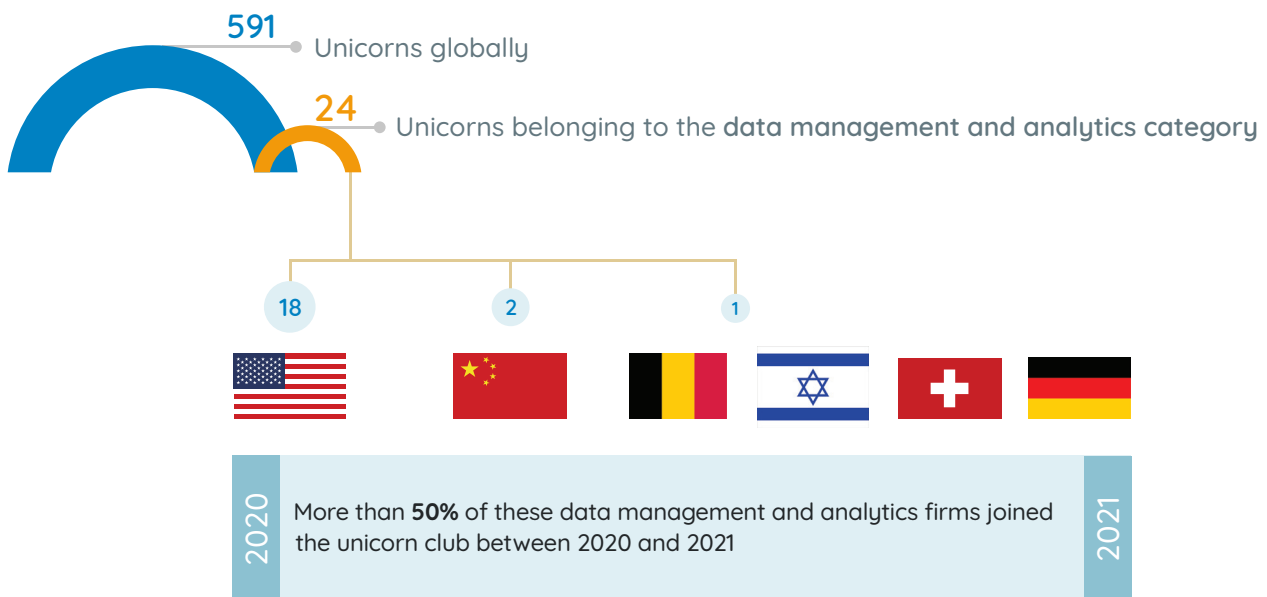
> Revenue increase ranged from **20%** to **174%** in fiscal 2020.

> Valuations ranged between **\$1B** and **\$479B**



Source: Valuates Reports, CBInsights

### Today



Source: Burnmark

## Investments in alternative dataset providers

In 2020, an Israel-based solution provider in AI-Driven behavioral biometrics received investments of **\$20 million** from **4 global banks**.



A California-based startup that collates transaction data from credit cards and analyzes various trends received investments of **\$25 million** from Citibank and Goldman Sachs in 2019. This firm was taken over by New York-based financial data company Bloomberg in December 2020.



**Our clients are increasingly incorporating non-traditional data in their investment and business strategy decisions.**



**Bloomberg**

Shawn Edwards  
Chief Technology Officer, Bloomberg

## The Chief Data Officer (CDO) has evolved as a key role in most firms

- > First Chief Data Officer ever appointed in 2002
- > Chief Data Officer numbers 12% — 2012 67.9% — 2019
- > Top management's access to data analytics **80%**
- > Global Front line staff access to data analytics **50%** (Brazil and Germany fare better at **58%**)
- > **Santander** appointed a new CDO and head of data transformation in February 2021. The position will lead the initiative to create a data and analytics center of excellence among other initiatives.

## Data overload

- > **700%** rise in data generated by the financial services sector each second, 2016-2020
- > Unstructured data remains majorly non-analyzed. Barely **1%** is run through analytical tools

Sources: NewVantage Partners, MicroStrategy, Sigma

## Do organizations care about this data?

- > Big data and analytics are creating the desired outcome 48% 2015 → 96% 2020
- > The number of companies that have invested more than \$500M in data initiatives 12% 2018 → 16%
- > Data and analytics are important to the business growth and digital transformation 94% of respondents

## Technology

- > 9.1% of executives pointed to technology as the principal challenge to becoming data driven
- > Cloud migration 2016 → 2020 (100%)



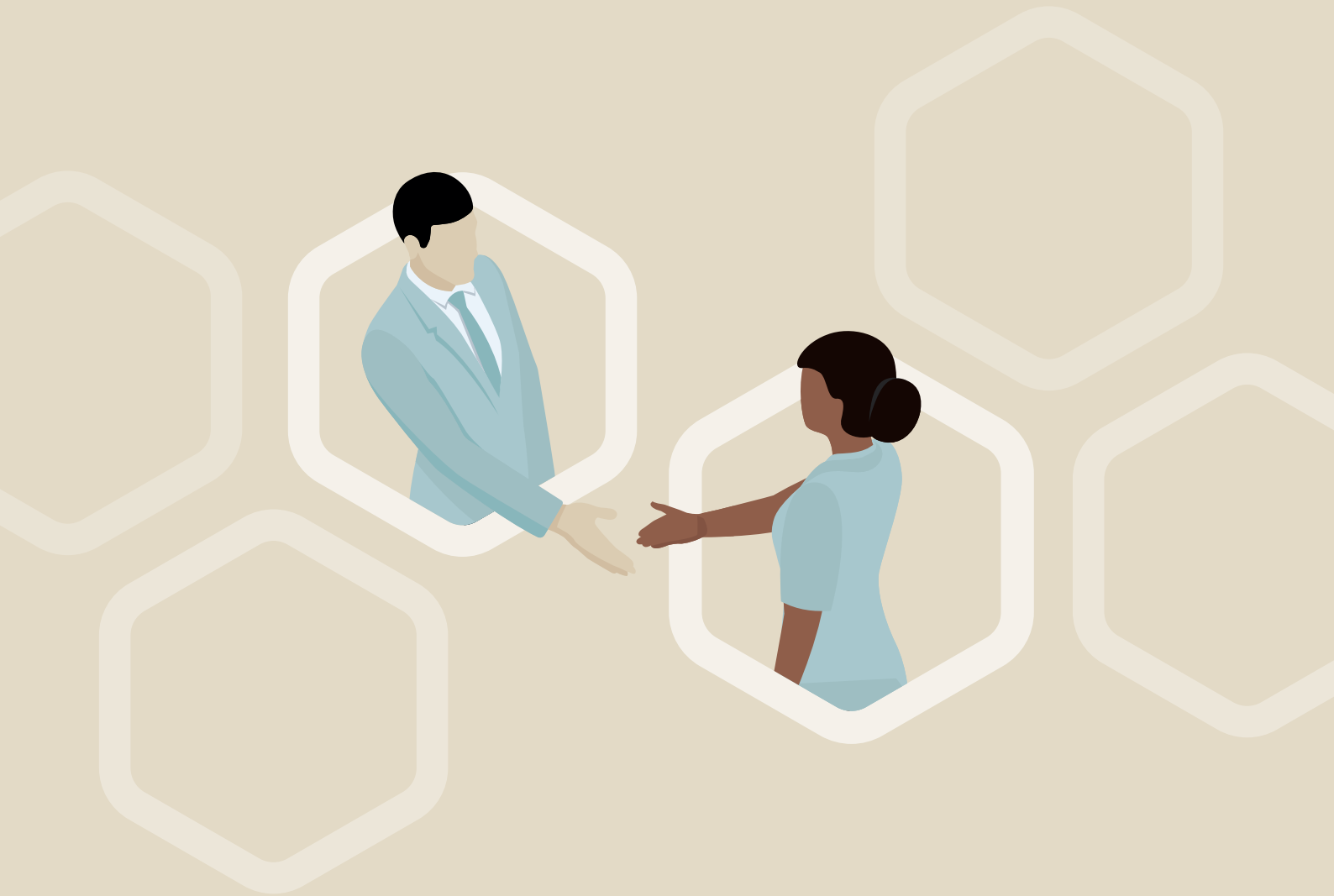
**It's going to give banks that were already piloting or looking at these types of things validation that they're heading in the right direction. So they're going to keep moving forward with that.**



**Marc Butterfield**  
SVP, New Product Development, Innovation and Strategy  
December 2019

Sources: cbinsights.com, 2021 Big Data and AI survey (New Vantage Partners), 2020 Global State of Enterprise Analytics (Microstrategy), Top 20 Big Data Statistics 2021 (Sigma Computing)

# Interviews



# Analytics as an Opportunity

## Sylvia Yarbough

Financial Industry and Compliance  
Innovation Expert



### What is your role in the RegTech industry?

I have been in the financial service industry for over 30 years, working with some of the largest US banks. I have recently re-entered the consulting arena after six years as a head of Compliance Shared Services at Citizens Bank. My teams included Regulatory Change, Enterprise Risk Assessment, Governance and Compliance Analytics. My time spent with both bank regulators and the Board of Directors provided me with a unique perspective on the evolving challenges of the financial service industry and regulatory compliance.

### What are some of the major initiatives and trends in customer data analytics you have noticed in the past couple of years in the financial services industry?

The financial services industry, just like other industries, is trying to leverage data and analytics to solve many challenges including target marketing, process optimization and managing risk. With the advancement of technologies such as machine learning (ML), the past couple of years have shown significant enhancements in areas such as anti money laundering (AML), QC/QA and regulatory change management. These are the easy wins for risk management and process optimization.

Changes in these spaces help organizations do more with less. The more difficult areas that continue to make slow but steady progress are those such as target marketing, sales, and underwriting. Leveraging algorithms from customer data is being explored by banks. However, progress is much slower than other industries because banks must walk a regulatory tight rope on how data analytics can be applied without violating regulations, or risking the fiduciary trust customers place in them.

### What are the key differentiators in the way in which banks use data and analytics versus that of Big Techs?

Banks are governed by more regulatory and fiduciary responsibilities than Big Tech. Although we have access to a variety of customer data, both from internal and external sources, we must be more judicious in the usage of data. Like all companies, banks are looking to accomplish three objectives, acquire new customers, expand services, and retain existing customers; all while managing risk and improving operational efficiencies.

Over the last ten years banks have spent more time on using technology to improve the back end of risk management. This includes investments in more sophisticated credit models especially in analyzing portfolios for risk exposure and potential default. In addition, banks have focused on reducing cost by improving automation in areas such as AML, and fair lending analytics.

Banks have also had to up their game in marketing and customer retention to ensure they're offering the right solutions to the right customers over their life journey, such as home equity after the mortgage, or credit card after the student loan. However, data allows for better and faster access to information to aid in marketing the right product at the right time. Banks aren't selling consumable goods (clothes, vacations, phones), they are leveraging data to be better financial partners to their customers.

## Analytics as an Opportunity

Sylvia Yarbough

Financial Industry and Compliance Innovation Expert



**We've heard quite a lot about digital KYC and digital imaging (at bank branches) lately. Have you come across any interesting use cases or pilots around these?**

For a long time, banks have been trying to figure out how to integrate biometrics into the customer experience. Some features - like using fingerprint to unlock your online banking account - have finally taken hold. Others, like using facial recognition software to access your account online, at the ATM, or in branch still has some ways to go.

We know the technology exists and is proven to work. However, unlocking your phone screen is a far different risk than unlocking your bank account. Prototypes and testing have to meet an even higher standard for financial institutions to make this technology common place. There are a few banks experimenting with the technology. However, this has not become a standard in the industry as of yet. The biggest benefit of facial recognition technology to the industry and the customers is the significant reduction of fraud, which on average cost US banks over one billion dollars a year. The bank that is really able to capitalize on this technology may find a significant increase in customers share of wallet based on the enhanced security.

**There must be several challenges banks face while implementing some of these use cases as well, the most obvious being those around regulatory restrictions. What challenges do they face?**

The intersection of Big Data and customer rights continues to be a problem for all industries. It is especially unique to banking, which has over 50 years of federal and state regulations that are very prescriptive about consumer privacy, fair lending, and fair banking laws. At the same time, these technologies have been evolving. Banks have been in the crosshairs of regulatory and media scrutiny coming out of the great recession. They must walk a fine

line when it comes to expanding the use of data while working with the regulators to bridge customers' needs with customers' rights.

In the last few years, we have started to see an upside, with banking regulators beginning to be more open to expanding the use of data in their published statements and guidance. Some have even begun to host think tank events or sandboxes, to get team members from major financial institutions together to focus on solving problems using data. Examples include in the AML and the fair lending space. The regulators realize technology is outpacing the regulations and seem to be open to looking at new ways to reconcile the two.

Most banks have typically had data collected and stored on a variety of platforms and legacy applications and the information is seldom connected or accessible. Imagine if we were to get all of the information collected and ported into data platforms that could appropriately, clean, synthesize, and mine. Imagine if we could then layer it in with external data and begin to apply AI. I believe it is a sea of untapped potential.

04

# Emerging Technologies



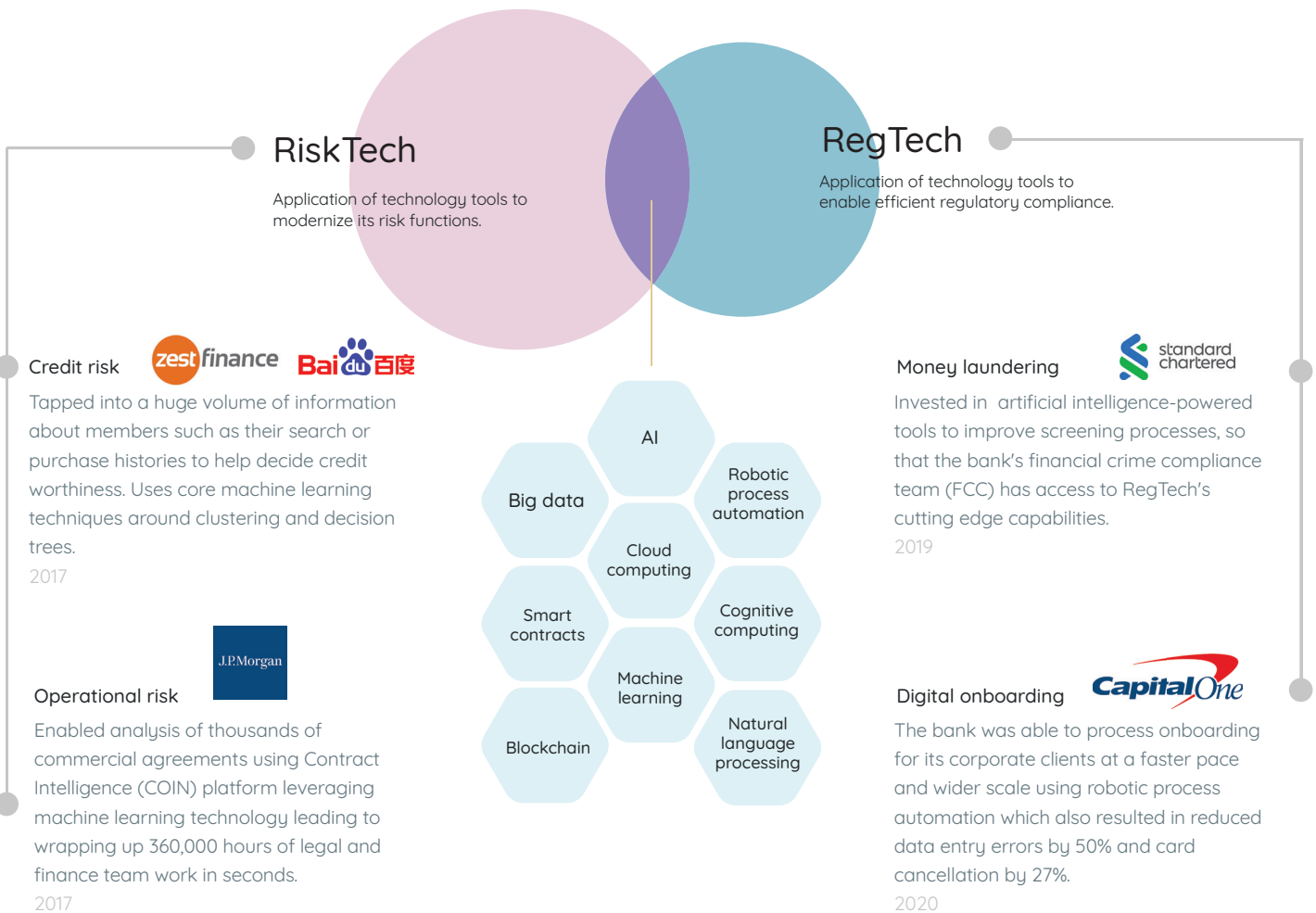


## RiskTech meets RegTech

**RegTech for regulatory change management and traditional risk management capabilities are now merging together with adaptable and scalable new products.**

Regulation evolves from addressing risk. The two are inevitably linked as they both relate to the overall effort of managing risk. When a financial institution is faced with a new set of regulations, it will mostly reach out to buy or implement a technology tool to enable compliance with that particular regulation. However, it is often the case that the solution has not served its full purpose because the same tool can also be used to mitigate the risk in the first place. Artificial intelligence is armed with machine learning algorithms that can better assess credit worthiness (credit

risk); vast volumes of data points in a few seconds to produce insights about optimal pricing levels (market risk) and several other financial risks like fraud risk, insurance underwriting risk, reputation risk, operational risk and counterparty risk. The ideal situation is the one wherein one, or a combination of, technology tools not only address risk, but also regulation and compliance. This is how common set of tools can address risk and compliance, through RiskTech and RegTech to form an enterprise wide comprehensive solution. Both entail analyzing volumes of data (structured - unstructured - alternative) to improve capabilities in both risk management and compliance. RegTech is a subset of RiskTech and there is a meeting point between these two functions which is enabled by common technology products.



# Interviews



# Global RegTech Trends 2020

## Linda Gibson

Director, Head of Regulatory Change EMEA  
BNY Mellon | Pershing



### What is your current role in the RegTech industry?

I head up Regulatory Change at BNY Mellon's Pershing. My role involves horizon scanning across new regulations and changes to existing requirements to form a joined-up view of the impact and timing, all of which is increasingly relevant in a post-Brexit world. Looking holistically at regulatory change can help reduce duplication of technology changes and cut the time on analyzing each regulation individually. My focus is to support our clients, across both our wealth and institutional client sectors, to lessen their regulatory burden.

Having previously worked in senior roles for the UK regulator, as a Head of Compliance and as a compliance consultant, I have in depth experience of the regulators' processes and expectations and help translate that into practical guidance.

### There is quite a lot of uncertainty around Brexit-related regulatory transition. Has this also created opportunities for innovation?

We are now seeing a 'resetting' of how financial services regulation is made in the UK, with an early example being the UK's new prudential regime for MiFID investment firms. Firms should expect that the UK approach will differ to the EU regime, not only in terms of timing but also in the substance and rules they adopt. Meanwhile, European regulators are also moving ahead with their review of existing regulations. For example, changes to MiFID II and MiFIR are being proposed to elements that have not worked as expected, as well as recalibrating it on the basis that the UK is no longer part of the EU.

So we are beginning to see the differences in approach.

Firms whose business straddles across different jurisdictions should be looking at their business strategically to create efficiencies. Data collection is worth review, especially given the increased and diverse demand for management information (MI) to be collected, managed and reported with each new regulation. This demand does not look to be easing up, so best to tackle now. Firms can usefully look at their own data to understand what it says about their business. There is an opportunity here to work smarter.

We expect that compliance transformation programmes will be reviewed in the context of further regulatory divergence during 2021 and beyond. Nobody wants to make changes to the way they handle their data only to have to unpick that approach where there is regulatory divergence. Looking ahead and joining up common approaches to data requests and reporting will be key.

### Has the pandemic given you an opportunity to review operational structures and costs?

Covid has accelerated the drive to automation, but for some firms which operate on legacy or multiple systems there may still be a high level of manual processes driving data management. These manual processes are not only time consuming but prone to error. We have seen that where forward looking reviews have been done effectively, the result has been the digitization of work streams and greater efficiencies across many business processes, while continuing to offer high client service levels. It's a win-win situation.

## Global RegTech Trends 2020

Linda Gibson

Director, Head of Regulatory Change EMEA - BNY Mellon | Pershing

BNY MELLON | PERSHING



### Business continuity and resilience have been hot topics for the past year. How are you seeing organizations deal with this?

Globally, regulators are expecting firms to plan for 'when' a crisis will happen, as opposed to having a collection of tools to be used 'if' something happens. This requires a significant shift in culture and goes way beyond what used to be called business continuity planning (BCP). The proposals to extend regulation in terms of firms' operational resilience were thrown into sharp focus during the pandemic. Although firms can never plan for all eventualities, the events of 2020 did highlight the benefit of planning responses to both common and more extreme events and the assumption that they will occur at some point.

The crisis has also highlighted the importance of having robust technology frameworks in place to support not only the continuation of business activity, but also in responding to the new, remote ways of working. During the peak of the volatility in 2020, financial services companies were still expected to deliver the same high standard of service, the same efficiencies and the same security of transactions. Developing operational resilience and the ability to remain agile to deal with future uncertainties and operate remotely yet successfully will become the 'new normal'.

### There is an increased desire to offer employees the ability to work from home. What are some regulatory trends you have observed due to this shift?

Being forced to work remotely has accelerated the need for innovation of workspaces, digital capabilities, and client communication channels. Without the crisis we likely would not have seen this level of change for a number of years.

From a trade surveillance perspective, we have seen an increased focus in how surveillance tools are utilized. With the enforced move to remote working due to the pandemic, compliance monitoring became a challenge for some firms and the importance of establishing a complete surveillance programme has become clear. Mapping data across an organization is a complex undertaking but is necessary

for holistic surveillance. Further, risk management systems require good quality data in a consistent format, and this is especially true when data is being pulled from multiple sources - the output is only as good as the data provided.

We expect that compliance transformation programmes will be reviewed in the context of further regulatory divergence during 2021 and beyond. Nobody wants to make changes to the way they handle their data and then have to unpick that approach where there is regulatory divergence - looking ahead and joining up common approaches to data requests and reporting will be key.

### What are some interesting innovations you have observed around collecting, storing, and using data within retail and corporate banks?

Covid-19 has provided an opportunity for firms and the industry more broadly to come out of the pandemic stronger than they entered it, by rethinking processes that can be a pain point for clients and a risk for continuity planning in the future.

It demonstrates that technology and regulation can work simultaneously to boost companies' operational resilience and better prepare them for future shocks. With robust contingency plans in place, and the infrastructure to adapt effectively to new working environments, financial services companies will be in a stronger position to take future volatility in their stride.



## Ben Richmond

CEO and Founder - CUBE

Burnmark asked CUBE CEO and Founder, Ben Richmond, to set out his perspective on the past year and unpick 5 key areas for emerging opportunities.

# The Evolving Landscape of Regulatory Intelligence and the Opportunities for AI

**2020 marked the dawn of the digital workforce. This shift forced organizations and individuals worldwide to cope with re-imagined operations, processes, working culture, new technologies around alternative data, new realms of cyber-crime and regulatory uncertainty. The essence of the year was speed and financial institutions had to rapidly adapt to the new reality to survive.**

In 2021, regulations continue to evolve at break-neck speed with added layers of complexity. Spurred on by the pandemic, the ambit of regulations has expanded to incorporate risks, from managing a virtual workforce, volatile macro-economic, ESG and political factors. Accuracy and efficiency are now essential to organizations' compliance and risk management strategies.

The opportunities created by alternative data and analytics have been tremendous, as Burnmark's research shows. Risk management operation models are evolving to meet the shifting requirements of global financial systems, with major impetus. Individual institutions continue to respond with innovation and improved predictive models. It is with innovation and evolution in mind that I set out my five key areas for opportunity into 2021 and beyond.

## 1

### Technology as the cornerstone of all risk management strategies

A 2021 IT Compliance survey of security assurance professionals found that 65% of global technology companies still manage risks in an ad-hoc and reactive manner. Financial institutions must be proactive, rather than reactive and will need to embrace new and innovative technology in order to do so.

In addition to making processes more efficient by minimizing human errors, technology-led solutions can cut operating costs by >10% - creating an enormous bottom line impact potential. The use of technology for compliance needs to eventually become a business mandate for the effective top-down implementation of risk management strategies.

This mandate has to come from the board room.

The CEO of a large bank spends anywhere between 10% and 20% today on compliance, while also facing significant reputation risks and dealing with tactical challenges on a daily basis. A technocentric approach could bring down these costs and immediately improve financial institution's bottom line by 10%.

## The Evolving Landscape of Regulatory Intelligence and the Opportunities for AI

Ben Richmond  
CEO and Founder - CUBE



### 2

#### Embracing RegTech in a confident and proactive way

RegTech promises to disrupt the financial industry by providing technologically advanced solutions to the demands of compliance. Several banks have dipped their toes in RegTech, very cautiously, but we need to create a step change by fundamentally transforming their entire operating models to be underpinned by technology and to use the full power of AI. The buying strategies and the speed of implementation of RegTech tools need to improve.

The advent of AI-based operating models is decreasing turn-around time for responding to newer regulations, scanning pro-actively for reputational financial risks and bringing all geographical portfolios onto one platform. For example, horizon scanning tools are now aggregating varied data points to anticipate regulatory changes that might come into play, so that firms are ready to implement such changes from the first day that they come into force. It adopts a lens of digital footprint, while scanning financial services regulations across multiple countries in multiple languages – to instantly reveal country specific compliance risks and gaps.

### 3

#### Using alternative and newly emerging data points to exhaustively predict risks

The velocity of data emerging through virtual channels and alternative sources has multiplied immensely in the past year. Factors related to confidentiality, social media data, IoT, recording and monitoring of digital communications, etc. have had a large bearing on organizational risks. Aspects of ESG have come to the fore, with its own new governance challenges. It is, of course, of utmost importance for organizations to anticipate these risks and pre-emptively mitigate them.



## The Evolving Landscape of Regulatory Intelligence and the Opportunities for AI

**Ben Richmond**  
CEO and Founder - CUBE



### 4

#### Underscoring the role of the Compliance Officer

The pivotal leadership role responsible for corporate governance, the role of the Compliance Officer, is becoming increasingly critical. According to the 2019 Nasdaq Global Compliance Survey, compliance professionals said that they expect understanding technology capabilities and implementing them at their firm to be the biggest compliance challenge over the next 12 months – for the first time in five years. Despite the push to digital, more than half of the respondents found current automation levels to be insufficient.

To adapt to the needs of the digital world, the Compliance Officer must understand the role of technology and AI for compliance. They must be a dedicated resource focusing exclusively on compliance and must set the tone for the manner in which the leadership engages with regulations.

### 5

#### Creating a bespoke risk management model

While there are millions of available data-points and factors, the key to a successful operating model is to understand what risk factors are most relevant for a particular organization. Firms can then utilize technology to validate the comprehensiveness of their model, prioritize the identified risks and implement the steps needed to maintain it and ensure it is up to date.

The implementation of technology-enabled risk management systems by financial institutions are a win-win for all stakeholders involved. In addition to reducing exposure to financial and reputational risks, it can translate to substantial cost savings that can be passed on to consumers.

The underlying theme across every area of opportunity is technology. Technology, data, automation, and innovation – as well as a willingness to embrace these elements – is critical to the future of compliance and ultimately the future of finance. Technology and data uses are evolving and, while there remains a degree of trepidation over handing compliance to AI, the rewards far outweigh any risk.

05

# Global Bank Survey

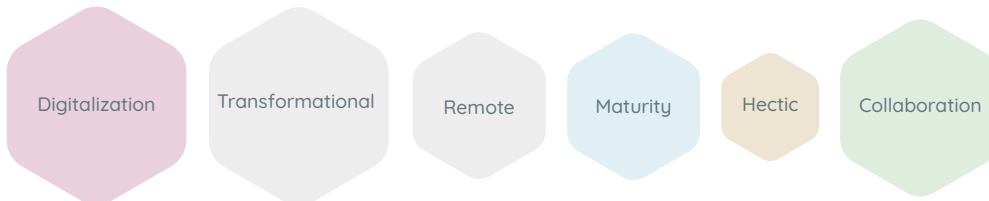




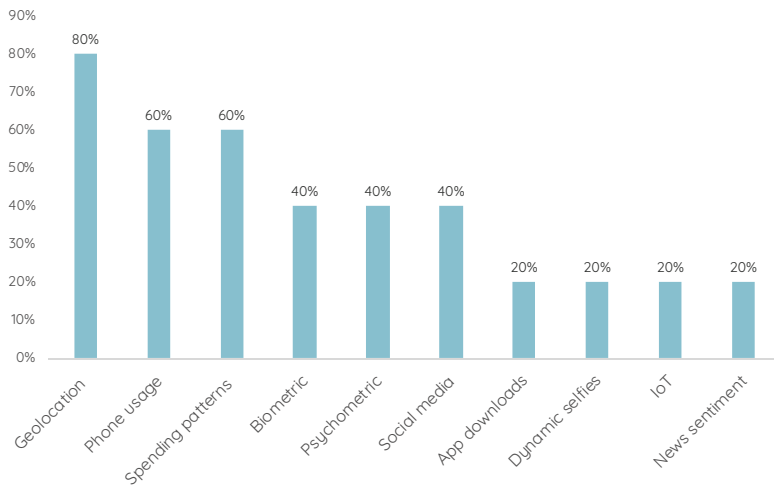
## The impact of going digital in 2020 for these global banks



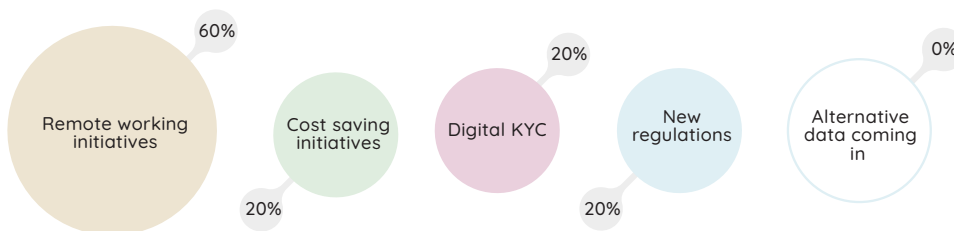
- > **100%** of respondents said that 2020 was a year of major transformation for their organization
- > **100%** agree that new types of data and advanced analytics offer opportunities to compliance teams.
- > Phrases used to describe 2020



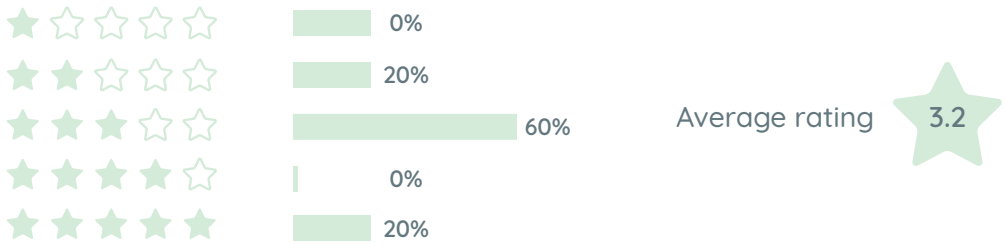
- > What forms of alternative data does your organization currently use?



- > What had the biggest impact in 2020 within your organization?



> How would you rate your organization's level of collaboration with RegTech firms?



> What are your priorities in terms of data-related compliance investment for 2021-22?

- 1 Improve data quality
- 2 Transform processes
- 3 Improve privacy and security
- 4 Improve data analytics and automation
- 5 Improve reporting
- 6 Improve data management
- 7 Bring in new data types
- 8 Improve documentation
- 9 Improve data disposal

# Editor's Conclusion



## Editor's Conclusion

**So, is data poison or cure? It's fair to say that having looked at the research before us, data is the new commodity – it is the cure. However, that is not to deny that an element of 'poison' lies within. The main takeaway? Data is only as good as what you can do with it, and its integrity – which comes with a swathe of challenges in itself. This will, however, keep the regulatory ecosystem churning.**

'Go digital' has long been the key strategy for financial institutions and businesses around the globe. However, the pandemic has seen a digital acceleration. "Go digital" in collaboration with "go technology" has offered an ambitious yet practical solution to many of the challenges faced by the financial industry. As the world began working from home, open banking opened up several possibilities for customers and the market players. Staying at home meant the world plugged in to the "cloud" to connect to external systems far and wide. As branches across the world started closing, more and more customers became accustomed to online modes of accessing financial services. As the micro, small and medium sized enterprises struggled to stay afloat in 2020, central banks and supervisors like the Hong Kong Monetary Authority (HKMA) guided its banks to use Machine Learning to analyze vast amounts of alternative data to generate a credit scoring system that decided the credit worthiness of MSMEs. This facilitated quick dispersal of working capital loans as a lifeline.

An innovative cocktail of APIs, data sciences and analytics have been used judiciously by financial institutions around the world to deal with challenges that are faced by financial institutions, including compliance and a variety of risks.

"Go digital" is built on a solid bedrock of data. Data is personal; it belongs to you and I and all of us. It is about our lives. All of these things form data points, which in turn is the lifeblood of modern financial institutions, who are tapping into a constant flow of our data.

Data is the biggest buzzword in the financial industry. Be it traditional or alternative data, it is the most important tool for new product design and enhances customer support and of course, in turn, builds relationships.

The scope of digital expansion and the power of technology when combined with human intelligence will create opportunities and success that may be considered 'unbeatable' if deployed at the right time, channel and space within every vertical in an organization.



There is no way this quantum of benefits will become available to customers in the absence of regulatory intelligence tools. To be a part of this web of interconnectedness, which is so essential to thrive and survive, it is of perennial importance that financial institutions make the right decisions and choices about what technology suits their taxonomy the best.

If the last year has taught us anything, it has shown us that no amount of preparation is ever adequate, and that it is important to understand our core strengths and play to them for long-term survival. The technology, data and analytics team need to have autonomy and authority to be productive in order to continuously upgrade against new challenges and opportunities.

Finally, it's all in the data, fine tuning and understanding this and what this means for your business will determine whether data is your oil, soil or your king!

