# The impact of New Technologies on the KYC and AML processes

ECB Operations Managers Group

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# Context

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**Compliance is in constant evolution. Increasingly complex financial crime practices, ever evolving regulation, result in more complex solutions. Keeping up with this demands expertise, focus and investment**

Different elements puts the Financial industry in the Spotlight to give a quick, effective and efficient answer to the non-financial risks. From a new digital era, which open an enormous variety of Financial Crime practices and channels, to a unique geopolitical crisis, which requires immediate action from the Banking industry to comply with financial sanctions.

Financial industry players are moving on the last decade from traditional risk management tools (spreadsheets, static reporting, rule based scenarios…) to modular architectures that provides a data-driven approach and allows to exploit new AML/CTF solutions based on Artificial Intelligence.

The private sector confront several obstacles to reach a full transition to new solutions. Internal limitations as data availability, new technologies complexity or high investment efforts, but also external difficulties as lack of regulatory clear instructions on the usage of new technologies or the explainability and interpretability of digital solutions.

In terms of regulations, recent AML laws are being published to reinforce prosecution against ML and TF crime and to regulate and advice on recent financial domains as cryptocurrencies:

- The European Union's Sixth Anti-Money Laundering Directive (6AMLD) broadens the definition of money laundering, hardening prison time and penalties and more

- The AML 2020 Act is the most significant reform to the U.S AML regulations since the USA Patriot Act aiming among others to extend law enforcement agencies power in U.S.

- New EU authority to fight money laundering oversighting crypto companies' activities

- New Cryptocurrency regulations/guidance in countries like South Korea, Singapore, Estonia

# Financial Technology Regulatory Sandbox

On the recent years different local regulators are contributing to spread innovation though the implementation of Sandbox environments. These environments allows private institutions to do live testing and simulate models on a controlled environment and under regulator's supervision. Some examples are:

- FCA initiated a Sandbox environment project in 2016. This solution is helping regulated entities to test innovative products, services and business models

- HKMA started this project in 2019 focusing part of the efforts on Network analytics application

- CNMV launched a Sandbox environment on Nov.20 to assist regulated and no-regulated entities to test new models' feasibility and provide regulatory advisory



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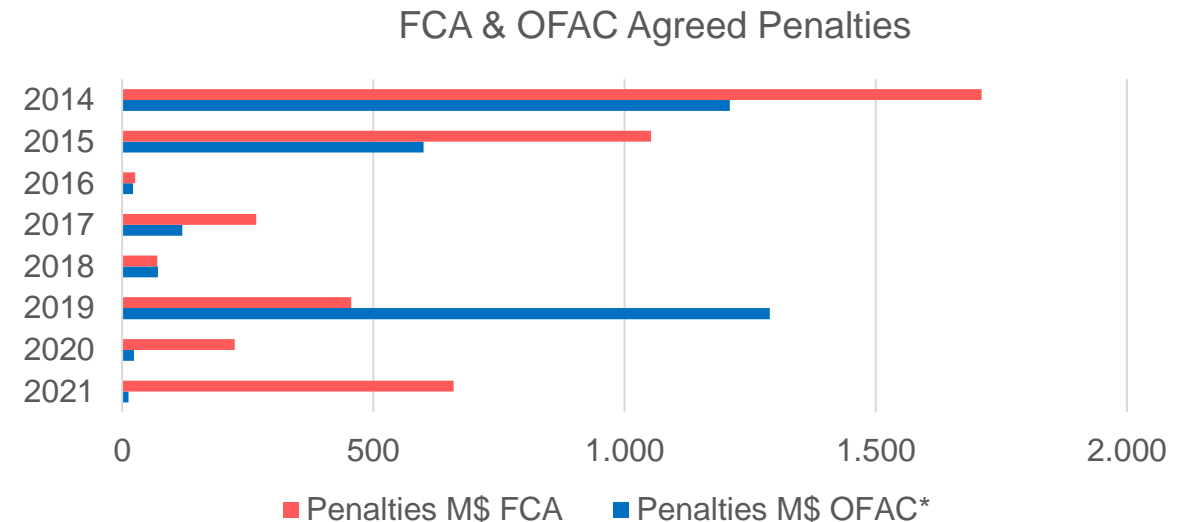
# Opportunities and Challenges for Banks

02

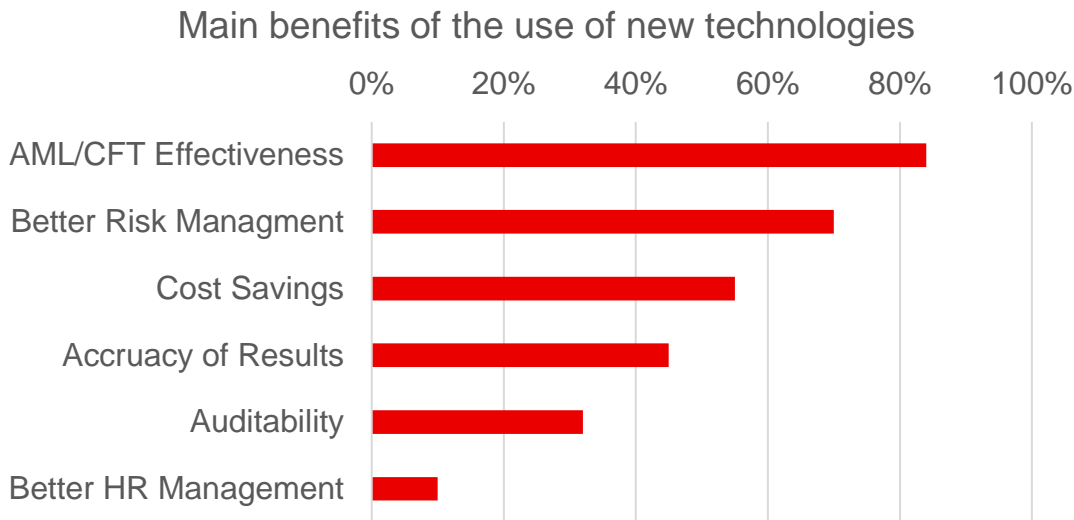# The Bank industry faces huge limitations using traditional technologies

Traditional systems require **high resource consumption**, however not meeting the required level of standards in terms of effectiveness or efficiency:

➢ **Human and capital resources:** employees to perform manual-driven tasks and processes

➢ **Technology:**

- stand-alone solutions with limited capacity to benefit from modular architectures

- Non-optimized controls drive to large number of potential non-relevant events to be analyzed

Fear of **regulatory penalties**. To overcome this situation, it is required a constant interaction between the private and the public sector to build a common understanding of the law and the controls

### FCA & OFAC Agreed Penalties



Penalties M$ FCA   Penalties M$ OFAC*

* OFAC figures only include AML related penalties

Source: U.S. Department of the Treasury / U.K. FCA

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# New technologies provide major opportunities to address those limitations…

## Main benefits of the use of new technologies

| | 0% | 20% | 40% | 60% | 80% | 100% |
|---|---|---|---|---|---|---|

- AML/CFT Effectiveness
- Better Risk Managment
- Cost Savings
- Accruacy of Results
- Auditability
- Better HR Management

FATF (2021), Opportunities and Challenges of New Technologies for AML/CFT

## Effectiveness

➢ Better identification and management of ML/TF risks

➢ Capabilities to use large volume of data on a faster and more accurate way

➢ Modular architecture to answer quicker to market demands

## Efficiency

➢ Reduce operational costs by focusing efforts on relevant events

➢ Leverage on Cloud technologies to reduce infrastructure costs

➢ Speed-up events identification and events analysis phases

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# …but also, important challenges

**Regulatory**
- ➤ Difficulties to demonstrate supervisors the right behavior of new models / algorithms

**Data**
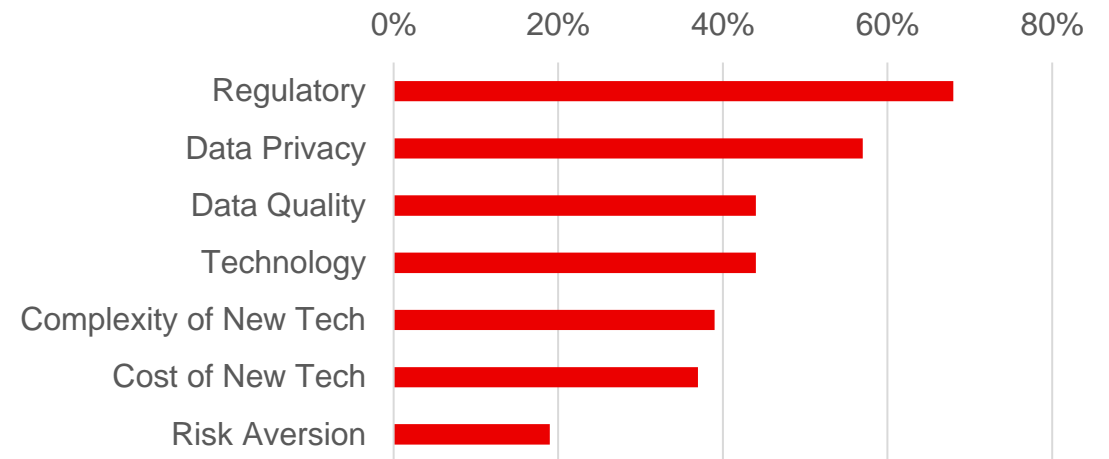- ➤ Restrictions to collect required level of data
- ➤ Make the right data available

**Technology**
- ➤ Complexity of new technology
- ➤ Lack of regulatory-proved solutions on the market

**Investment**
- ➤ Huge investment efforts to face technological and organizational changes. Invest on the right people and the right technologies
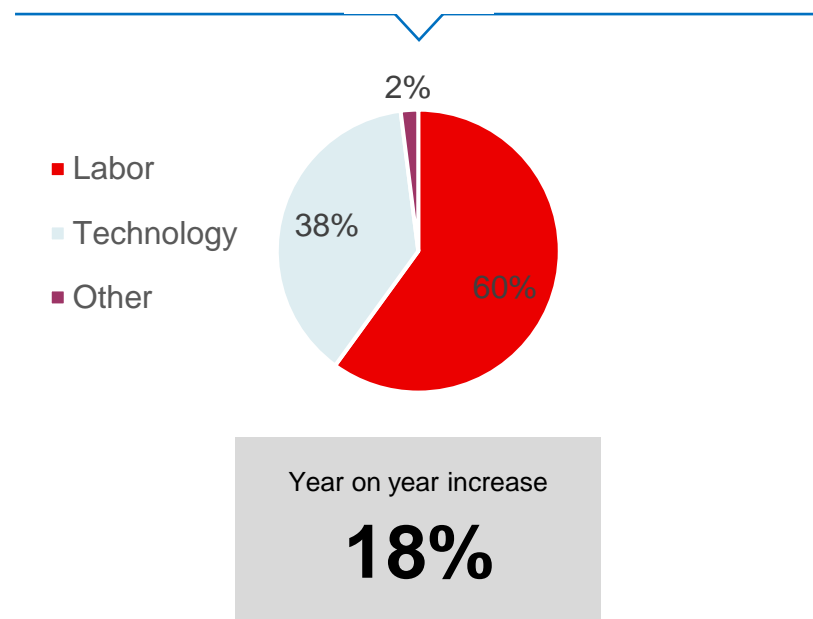
Main Challenges to adopt new technologies

| | 0% | 20% | 40% | 60% | 80% |
|---|---|---|---|---|---|

Regulatory
Data Privacy
Data Quality
Technology
Complexity of New Tech
Cost of New Tech
Risk Aversion

FATF (2021), Opportunities and Challenges of New Technologies for AML/CFT

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# The industry keeps investing at a strong pace

## $213.9 B

Projected total cost of financial crime compliance across all FIs in 2021[1]

- Labor
- Technology
- Other

2%
38%
60%

Year on year increase
## 18%

[1] Source: LexisNexis. *True Cost of Financial Crime Compliance Global Report 2021*

**Technology Investment Leads to Better Outcomes.** Entities with higher investment in technology over labor are more prepared and less impacted overall by regulatory changes or unpredicted events

**Operational challenges to gain efficiency.** Current situation requires most of the players to run traditional regulatory-approved technologies in parallel to new solutions. This avoids to benefit from new technologies efficiency

A **big piece of the Technology cost is allocated to Data** mining, data cleansing and data governance projects. This reduces the space for direct investment on new technologies specifically related to AML controls

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# New Technologies use cases in the KYC and AML/CTF space

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# New Technologies use cases in the AML/CTF space

Multiple new technology typologies can be explored to address some of the limitations identified in traditional technologies
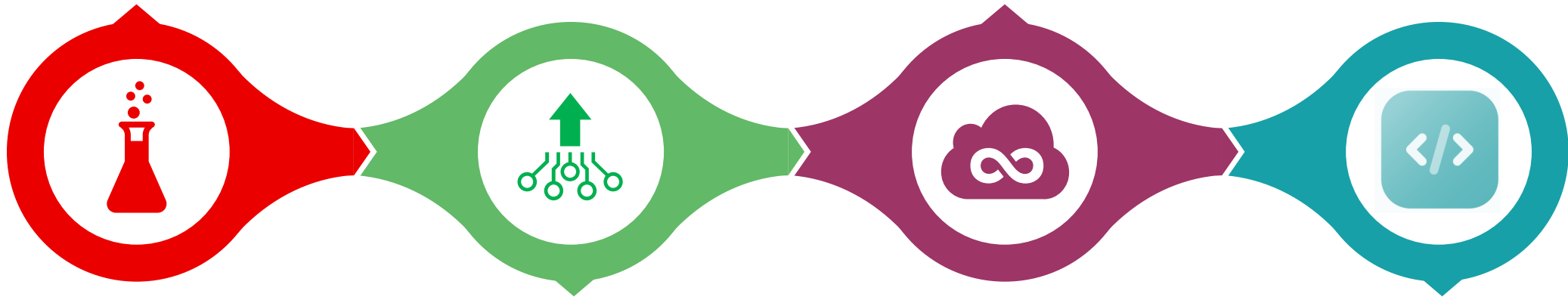
## Data Science

How to extract value from the data:

➢ Analytical models for outliers detection

➢ Predective models (Machine Learning)

➢ NLP & OCR technology

➢ Graph analytics

## Cloud

Shift from software you "buy" to software you get as a service:

➢ Hybrid Cloud

## Hyper automation

Automation of the process through tools that seek to reduce human intervention:

➢ BPM solutions

➢ Using cognitive steps

## API

Build an ecosystem where all actors can benefit and participate in:

➢ Replace main system integrations with API

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New Technologies use cases in the AML/CTF space

These new technologies can have multiple use cases in the AML/CTF space

**Hyper automation** of the KYC process though BPM solutions to limit the human intervention

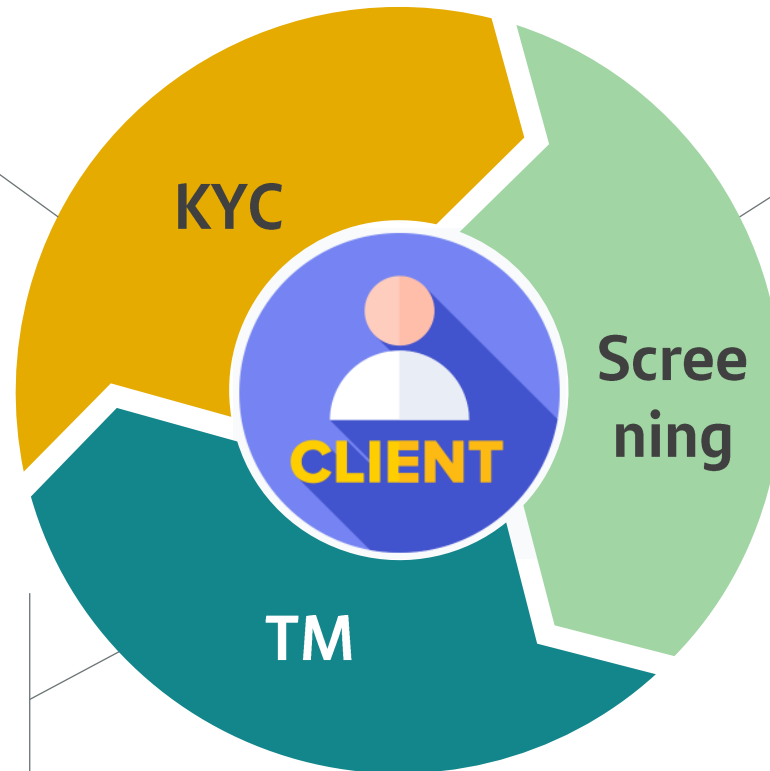Count on **APIs** to allow KYC automatic information enrichment from Trusted DDBB

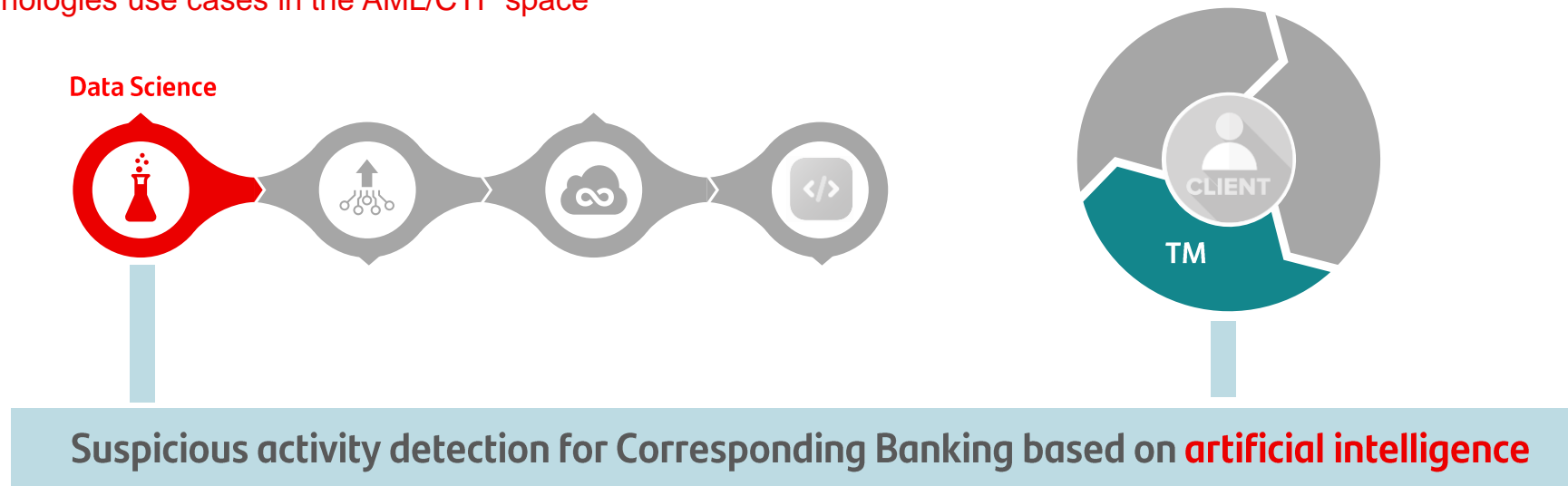Put in place **Biometrics** technology for the KYC process

**OCR capabilities** to automatize Trade Finance document review. Continuous training to spot names, countries, goods... on trade related documentation

The screening systems cross different fields and use **fuzzy matching logics** to reduce low quality alerts avoiding common names or alias

Usage of **artificial intelligence and robotic** to automate processing of adverse media reports

**KYC**

**Scree ning**

**CLIENT**

**TM**

**Advanced monitoring capabilities** for Correspondent Banking activity. Payments full path monitoring through outliers identification based on **unsupervised machine learning system**

**Network analysis** tools to monitor entities relationships (clients, non-clients, related parties...), individuals, payments...

**Automated Investigation for AML** by replicating the complex human decision-making process

**Data Science**

**Suspicious activity detection for Corresponding Banking based on artificial intelligence**

Detection is based on an Automatic Learning approach, within this sub-field, we can identify two approaches:

**Supervised:**

➢ Based on existing prior knowledge.
➢ Does not discover new patterns but reinforces existing ones.
➢ No variable modeling required.

**Unsupervised:**

➢ No labels required.
➢ Based on normality of the customers.
➢ Discover new patterns and existing ones.
➢ Require features engineering.

At Santander we have implemented **AI Systems with Unsupervised** approach for Correspondent Banking activity + rules based scenarios

# Impact in AML Operations

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# Impact in AML Operations

**Control Effectiveness drives to Cost Efficiency.** Through detection improvement, we reduce the noise and operational teams can focus resources to truly high-risk areas.

Expected Transaction Monitoring average operational cost reduction higher than

## 30%

### Team upskilling

A new set of data-oriented abilities. This profile upskilling is required on:

- AML operation data-oriented analyst profile, capable to understand the models generating the alert, detect issues or defects on the model and propose improvements

- Functional teams (mix of business / AML / operations expertise) in charge of the new systems calibration and models maintenance

- IT teams in change of the system update/improvement

### Strengthen coordination between lines of defense

Continuous feedback loop to improve system calibration based on alerts investigation results

Adapt Policies and Procedures to manage accordingly the applicability and maintenance of the new AI models:

- Define the required level of investigation for AI models alerts and model maintenance to ensure a proper AI model lifecycle management
- For automated AML alerts investigation, precise by procedure the scope and coverage of this alert automatic analysis

### Data Quality improvement plan

Ensure models are based on the right data. This requires an enormous effort to ensure:

- Data exploration and gathering

- Data cleansing

- Big Data capacities to make data accessible and exploitable

- A new data governance model to ensure a 100% secure data end to end process

# Key takeaways for the implementation of new technologies on the AML/CTF space

**1**

**A complex financial industry context**

- New financial crime practices and a complex geopolitical situation requires immediate and innovative actions from banking industry

**2**

**Strengthen ties with regulators**

- Work closer with regulators to get advisory, guidance or exchange feedback, would accelerate this digital transformation

**3**

**Protection, protection, protection**

- Complex and sophisticated financial crime practices require controls to be at the same level of sophistication

**4**

**Ensure scalability**

- Increase control effectiveness while ensuring efficiency is key to ensure new model sustainability on the long term

**5**

**Operations becomes a key player on this digital transformation**

- New technologies provide mechanisms to address those challenges and multiple use cases for the AML/CTF space

- It requires to invest not only in technology but also in people, processes and become a data-oriented organization

# Thank You.

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