

# Emerging Technologies in AML-CFT Compliance

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# Foreword

One of the undeniable outcomes of the COVID-19 pandemic is the fact that it has accelerated the digitalization survey of finance in a tremendous amount. As the society moves into a more cashless one, other fields such as commerce have adopted themselves into the new dynamics of the economical world. The trend of evolution has echoed itself in the criminal side of finance as the fraudsters started to look for new methods and ways to abuse the system and target victims.

According to the Feedzai Financial Crime Report Q3 of 2021, as the decrease in cash transactions is 48% and there is an 89% of increase in the P2P transactions in comparison to 2020, the banking fraud attacks has risen up to 259% and the dollar amount of online fraud attempts has increased 23%.

Among the main stimuli of financial crime, it is possible to count the unexpected acceleration of digital transformation with the global pandemic and the challenging regulatory requirements due to the expanding digital channels.

As the financial environment gets more digital every day, the conventional technologies remain insufficient to meet the basic requirements especially in terms of cost, time and safety. Digital-based automated solutions offer advantages in analyzing data in bigger volumes, with a higher velocity and in different structures. Therefore, in fighting financial crimes and ensuring better efficiency in Anti-Money Laundering (AML) and Combatting the Financing of Terrorism (CFT) compliance, the use of emerging technologies of artificial intelligence (AI), machine learning (ML), distributed ledger technology (DLT), e-KYC (Know Your Customer) and APIs plays a vital role.

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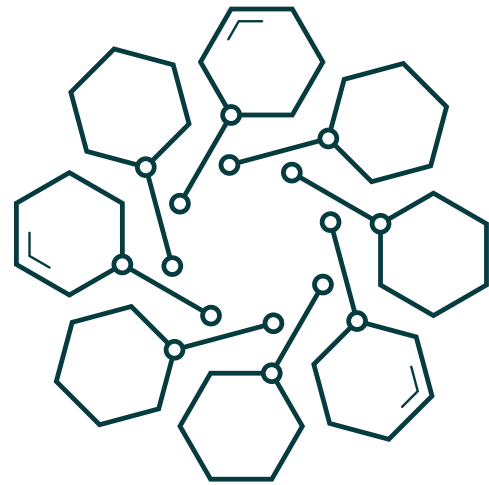
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This whitepaper explores the potential of emerging technologies in the financial world for the purpose of enhancing Anti-Money Laundering (AML) and Combatting the Financing of Terrorism (CFT) compliance efforts. Digital transformation and increasingly demanding regulatory requirements in the financial ecosystem caused an increment in the number and volume of the financial crimes which in turn peaked the AML costs for the financial institutions. The new automated technologies such as AI, ML, DLT, e-KYC and APIs offer many advantages in analyzing big data faster and in providing a safer digital environment. The use areas of the emerging technologies together with their pros and cons are discussed in detail in this paper in order to provide a holistic approach to the concept.



# The Use Areas of the New Technologies in the Financial Ecosystem

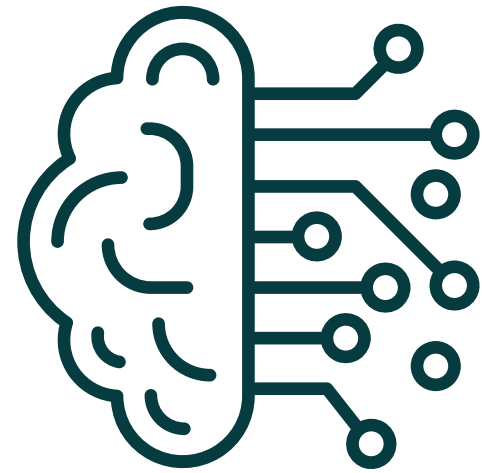


**AI and ML brought improvement in onboarding procedures, risk assessments, communication with qualified parties, liability, cost-efficiency and overall management.**

Digital transformation in the financial industry was both necessary and beneficial for ensuring the efficacy of the anti-money laundering (AML) and combating the financing of terrorism (CFT) efforts and increasing the efficiency of the fight against money-laundering and terrorist financing crimes in the digital world. Therefore, financial institutions have started to acknowledge the importance of adoption of the recent technologies into their AML compliance programs to support their operational workload and to remain compliant with the ever-evolving regulatory requirements. The tools incorporated may provide various solutions based on the needs such as automation for the use and classification of large datasets, artificial intelligence (AI) for advanced analytics, or machine learning.

In addition to the help in operational efforts, the adoption of digital solutions also improves the detection of the risks and monitoring suspicious activities for AML/CFT processes especially with the introduction of artificial intelligence (AI), machine learning (ML) and natural language processing. As the enhanced real-time monitoring and sharing of information among related parties promoted better supervision, they brought improvement in onboarding procedures, risk assessments, communication with qualified parties, liability, cost-efficiency and overall management.

# Artificial Intelligence (AI)

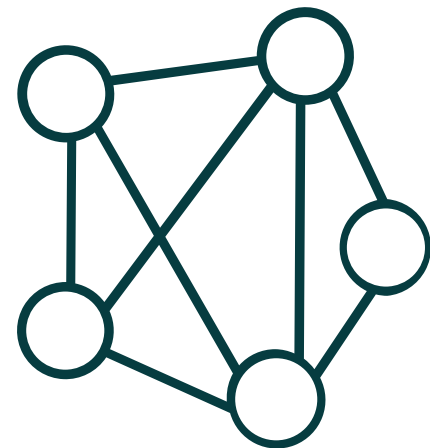


**Artificial intelligence technology is one of the most known and preferred technologies in the AML and CFT procedures as it offers a wide range of solutions to differing problems from security to productivity and cost-effectiveness.**

Artificial intelligence (AI) is defined as the science that imitates the cognitive thinking processes of the human mind such as recognition of recurring patterns, making logical predictions and decisions so that it can execute a task which is normally done by a human. The main feature of the AI is building automation to the execution process and problem solving via advanced computational techniques and algorithms which enables AI to collect and analyze data in different types, sources and structures. The level of the automation in AI may vary in different types of applications; however, the main idea of the concept is to bring intelligence and adaptability together to ensure the most effective and error-free solutions.

Artificial intelligence technology is one of the most known and preferred technologies in the financial industry, especially in the areas of AML and CFT procedures as it offers a wide range of solutions to differing problems from security to productivity and cost-effectiveness. In terms of risk management and better implementation of compliance requirements, adoption of AI to AML and CFT processes perform as a great functional addition to the operating systems of the FIs as it boosts the efficiency and simplifies the complex and demanding compliance procedures.

# Machine Learning (ML) and Natural Language Processing (NLP)



**NLP and ML technologies are able to improve themselves in combining different types of information.**

Machine learning (ML) is one of the subcategories of AI that educates a computer system so that it can autonomously read, analyze and learn from data without requiring human intervention. Machine learning systems build on pattern recognition abilities and experiences in order to resolve a problem autonomously. As the ML is mostly preferred for data analysis to develop an automated analytical model, the most common operational use of it is for supervision in AML and CFT processes. The capabilities of learning from previous cases and other systems, minimizing the requirement of human intervention in the process of monitoring, reducing false positives, improving risk management and solving complex cases are placing ML as the number one technology that benefits the financial institutions to alleviate the complex compliance requirements.

Another type of AI technology is natural language processing (NLP) which specializes in training systems to understand, make sense out of and manage human language. Fuzzy logic is the technique within the scope of NLP that empowers logic to take random or uncertain data and process it by incorporating multiple values. The final aim of fuzzy logic is to produce a functional output even though not necessarily a precise one. Similar to other AI-powered technologies, natural language processing and fuzzy logic tools improve the overall efficiency of the AML & CFT processes by supporting false-positives and false-negatives reduction especially in sanction screening processes. Their beneficial influence is seen most clearly in solving problems about data quality because these technologies are able to improve themselves in combining different types of information for instance linking results obtained from search engines with the PEP lists, detecting fraud attempts or monitoring sanction lists.

The Financial Intelligence Unit (UIF) of Italy and the Directorate General for Financial Supervision and Regulation of Bank of Italy cooperated and developed a fuzzy logic system for collecting AML indicators to serve non-banking financial intermediaries. The fuzzy logic application processes quantitative data such as international payments coming from or going to higher risk territories with the purpose of reinforcing the regular AML and CFT risk assessment processes of those intermediaries. The AML indicators to be constructed are collected from the mass of anti-money laundering reports database and Supervisory reports. The non-banking financial intermediaries are classed into sub-categories based on their types such as investment, asset management, payment and e-money, or credit supplier and on their primary activities such as open or closed end funds, funds transfer or payment services.

# Distributed Ledger Technology



**DLT is able to extend and improve the monitoring activities in comparison to the traditional methods.**

Distributed ledger technology (DLT) is very effective in enhancing monitoring and tracing cross-border and global transactions, therefore it also supports identity verification methods and correspondingly customer due diligence (CDD) procedures. DLT simplifies both the payment and CDD processes as it provides the users with the ability to supervise their own financial activities by offering a wallet to them. DLT also minimizes security concerns of the users by enabling higher accuracy and better quality of the data as well as offering a better cost-management.

Another benefit of DLT is that it would be able to extend and improve the monitoring activities in comparison to the traditional methods if the suitable safety conditions and regulatory environment are secured by managing the transactions with one shared ledger or with different interoperable ledgers. As the nature and possibilities of DLT become more common and understandable, it can also be used in ensuring security for contractual arrangements such as smart contracts. When a contract is built into securities via a ledger technology, each time a change or a transaction is initiated, all the shareholders within that contract will be notified.

Nine private corporations in Europe from various industries together with the support of the local supervisors gathered and created an entity that encourages the management of digital identities with a perspective that gives the power of control to the users which can be called the “self-sovereign identity”. To ensure its interoperability with the alternatives that may be built in the future, the European and Spanish standards are used in the system. As the entity is based on DLT technology, it offers a “wallet” to the users via which they can manage their transactions and other activities which eventually smoothen the whole identity and customer due diligence (CDD) related processes with other collaborative entities.

# E-KYC and CDD



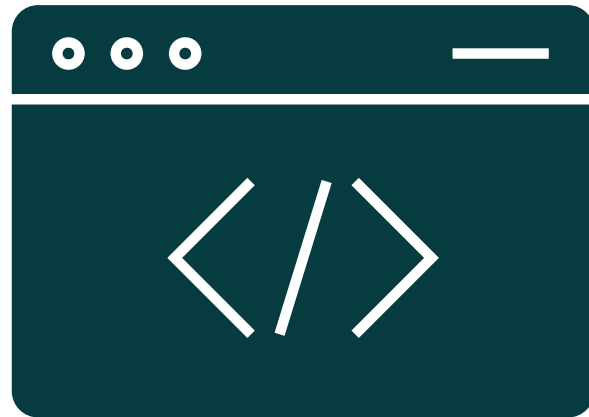
**E-KYC offers the most effective digital solutions for the CDD processes and therefore AML and CFT frameworks as well.**

ID verification and customer monitoring are the most important but at the same time burdensome steps of anti-money laundering (AML) and combating the financing of terrorism (CFT) procedures. In terms of efficiency, as the customer identification processes require extra time, cost and resources, they might not give the expected results, especially in cases of implementation on a non-risk basis applications.

The methods currently used in ID verification and CDD (Customer Due Diligence) processes remain insufficient in satisfying the expectations of both the financial institutions and the customers. On the side of FIs, in addition to the extra effort, the lack of accuracy in data quality, challenges in updating and matching the data and, also highly rule-based nature of the CDD measures are the main problems. For the customers, the whole process of collecting data for verification and submitting documents are exhausting and difficult most of the time. The new emerging technologies are expected to minimize or eliminate these issues via the introduction of more automated and efficient onboarding processes which are designed to be adjustable to the risk situation, general context and the individual while keeping the integrity of the system they are integrated into.

Technologies such as digital ID, e-KYC (Electronic Know Your Customer) and machine learning are becoming more and more preferable and advantageous in the financial ecosystem because they offer the most effective digital solutions for the CDD processes and therefore AML and CFT frameworks as well. For the purpose of increasing efficiency, speed and accuracy in risk detection and management against the financial crimes of money laundering and terrorist financing, financial institutions are looking for new ways to implement machine learning (ML) based monitoring systems into their already existing customer onboarding processes or adopt and settle a totally new system from scratch.

# APIs (Application Programming Interfaces)

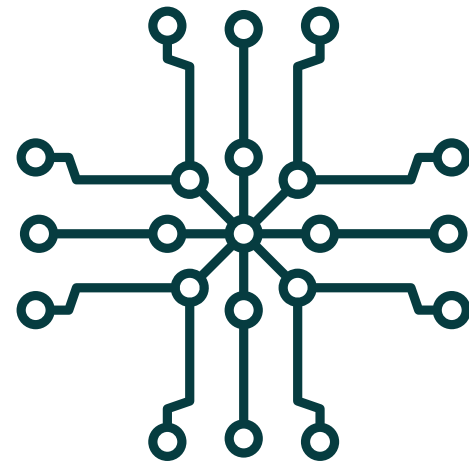


Among the emerging technologies that aim to enhance the AML and CFT efforts in the financial industry, the APIs (Application Programming Interfaces) provide solutions by making the integration of various compatible systems possible in a shorter period of time and including bigger datasets. What is meant by integration of different systems is combining monitoring tools with customer ID verification softwares or risk detection tools with customer risk profiles so that relevancy in the risk management procedures are increased. Financial institutions mostly struggle with integrating different incompatible systems which are built by various developers, therefore, this feature of APIs releases substantial burden from the operational side.

The most prominent benefits of the APIs are (but not limited to) boosting the level of interoperability, creating a more fragmented system rather than the traditional siloed systems, increasing automation therefore accuracy and optimization, simplifying the customer onboarding process by providing clustered and standardized data for achieving a more accurate risk profile.

**The most prominent benefits of the APIs are boosting the level of interoperability.**

# Regulatory and Operational Perspective: Pros and Cons of the New Technologies



**The potential of the emerging technologies is likely to open up new horizons in the financial industry for fighting against the money laundering and combating terrorism financing crimes in the digital era.**

Throughout this paper, it is highlighted how the emerging technologies disclose what kind of benefits to the AML and CFT efforts in the financial industry. Cost-efficiency, speed, automation, better monitoring, ID verification and risk-management and overall efficiency are among the most outstanding advantages of the AI and ML based technologies which in the bigger picture aim to promote the fortification of the fight against the financial crimes to a large extent. However, on the operational and regulatory side, the emerging technologies are posing specific challenges to the financial institutions. The nature of the regulatory landscape and accordingly the compliance requirements for AML and CFT still remain traditional in most aspects in comparison to the pace of innovation the new technologies offer. Therefore, the enhancements, implementation and adoption of the new technologies cannot go further and faster than they should be.

The AI and ML based transaction monitoring tools need to be built into an already existing and broader monitoring system that still includes human elements for effective analysis of unique alerts and risks at the transition phase because they require further improvement and adaptability for ensuring a complete compliance with the regulatory requirements. Another challenge of the new technologies are related to the scrutiny and security of the financial transactions actualized via DLT. The decentralized and non-intermediated nature of the ledger technology raises regulatory and jurisdictional questions.

To summarize, although the potential of the emerging technologies is likely to open up new horizons in the financial industry for fighting against the money laundering and combating terrorism financing crimes in the digital era, it seems that adaptation process of these technologies require more time before fully accepted by all the shareholders of the industry. The COVID-19 pandemic and the evolving consumer behaviors towards digitalization have accelerated the adaptation process and proved that users are ready to embrace the conveniences the technological developments can provide.

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# About Us

## Milestones

Fineksus was founded in Istanbul, Turkey in 2002 as a software and professional service provider to deliver technical consultancy, outsourcing services, standalone / SaaS AML and payment software solutions for banks, brokers and corporations. In the beginning of 2013, Fineksus started managing its ongoing GCC Region operations at its new office in Dubai, UAE.

Fineksus is the market leader of compliance and financial messaging solutions in Turkey by providing its products and services for more than 95% of the banking industry, and aims to expand its offerings global wide which makes the company at the forefront for providing AML solutions and financial messaging tools.

## PayGate™ Suite as AML trademark

Fineksus provides products and services across 29 countries from Hong Kong to the UK with offices in Istanbul, Dubai and Qatar. By meeting ever-changing demands of RegTech industry with 18 years of know-how, Fineksus develops cutting edge tools to bring value for more efficient and effective way of AML compliance and financial messaging. PayGate™ Compliance package covers all the fundamental operations based on AI and machine learning to maintain surveillance of financial systems.



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Know your risk.



**PayGate™ Analyzer**  
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