VALORES

VCIS Delivering Disruptive Technology to more Efficiently Combat Financial Crimes

VCIS utilizes analytics to create a comprehensive understanding of the entities involved in investigations, such as people, transactions, and companies, as well as their interrelationships. By doing so, analysts and investigators are empowered to detect and disrupt even the most intricate criminal schemes, enabling them to effectively combat financial crime.

Our powerful investigative technology is designed to combat financial and economic crime, providing robust solutions for investigations, internal audits, AML alert reviews, KYC activities, and more.



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Introduction

In a rapidly evolving global financial landscape, banks and financial institutions are embracing cutting-edge technological solutions to remain competitive. The ongoing technological revolution is not only influencing operational efficiency but also shaping the strategies employed by forward-thinking banks to attract and retain customers. Unlike traditional approaches, contemporary banking strategies transcend isolated operations, integrating information across the board to enhance customer service and proactively identify instances of fraud, particularly in realms like mobile phone-based fraud.

One notable trend is the shift towards a more interconnected approach, where banks leverage innovative solutions to break down operational silos. This interconnectedness enables a holistic view of customer interactions and transactions, fostering a seamless and personalized banking experience. Furthermore, the adoption of advanced technologies facilitates real-time fraud detection mechanisms, a crucial aspect in an era where cyber threats, including mobile phone-based fraud, are on the rise.

A key focus for tech-savvy banks is the utilization of customer mapping and location-based data. In this context, 'location' emerges as a transformative element, becoming the new magic word in the banking sector. By harnessing the power of geospatial data, banks can gain valuable insights into customer behavior, preferences, and patterns. This not only aids in tailoring services to meet individual needs but also serves as a strategic tool for expanding into new markets.

The integration of location-based data into banking strategies opens avenues for targeted marketing, allowing institutions to deliver personalized offerings based on the geographical context of their customers. This approach not only enhances customer engagement but also enables banks to identify emerging trends and respond swiftly to market demands.

The contemporary banking landscape is undergoing a paradigm shift, driven by technological innovation, interconnected strategies, and location-based data. To stay competitive and relevant, financial institutions must keep pace with these advancements.



Detecting Frauds

Fraud detection is a major concern for banks and financial institutions worldwide. Payment providers have developed fraud detection tools that rely on massive datasets containing not only financial transaction details, but also IP addresses, browser information, and other technical data to refine models for predicting, identifying, and preventing fraudulent activity. Additionally, financial institutions are exploring big data solutions that leverage publicly available data, such as property deeds and assessment records, to detect mortgage fraud, including equity stripping schemes. These solutions go beyond current KYC initiatives and watch list screenings, and could significantly improve fraud detection by correlating heterogeneous datasets and reducing false positives.

Identifying Financial Fraud with Geospatial Analysis

Fraud prevention is a complex ecosystem for most financial service institutions, involving a mix of traditional rules-based controls, artificial intelligence, on-premises systems, proprietary frameworks, and open-source cloud technologies. These systems must also comply with strict regulatory requirements and high governance frameworks, while maintaining low latency and high availability. Our solution combines a collaborative data-centered operating model with an established delivery strategy of code, data, and machine learning, combining rules with AI in a common orchestration framework to provide an agile and adaptive fraud prevention strategy.

As consumers become more digitally engaged, large FSIs can leverage real-time GPS coordinates of every purchase made by their customers. This data can be used to better understand transaction behaviors for customers using GPS-enabled banking applications. However, geospatial analytics require access to a large amount of compute resources and cutting-edge libraries that do not fit well within traditional data warehouse and relational database paradigms.

Our solution, centered around geospatial analytics, enables organizations to better understand customers' spending behaviors and identify abnormal patterns. We are releasing a new open-source geospatial library to detect geospatial behaviors at a massive scale, track customer patterns over time, and detect anomalous card transactions. This personalized AI solution helps identify abnormal behavior by first understanding normal behavior, and doing so for millions of customers requires data and AI combined into one platform.

Pain

- The decisions made by anti-financial crime teams are critical in ultimately stopping financial crime. However, these teams often face challenges such as poor data quality, reliance on legacy or fragmented solutions, and incomplete information.
- The modern criminal has become increasingly agile and technically savvy, but many financial institutions have not been able to keep up with the pace of implementing new technology. This puts compliance officers at a significant disadvantage.
- Criminals have evolved and now understand the nuances between social engineering and data engineering. They use both tactics to achieve their desired outcomes.
- The modern criminal is well-versed in the intricacies of business processes related to financial crime detection and focuses on exploiting gaps created by ineffective and inefficient systems.
- Financial institutions have to contend with point technology solutions that are expensive, inflexible, and difficult to use.
- Several data modernization projects have failed to deliver the expected

value that they were meant to provide.

- The financial industry still faces challenges related to data quality, availability, and the fragmentation of data caused by silos and fiefdoms within organizations.
- Legacy technology often relies on single-issue countermeasures such as basic network analysis, decision trees, and models that remain static for extended periods. These outdated solutions are often ineffective in detecting the sophisticated tactics employed by modern criminals, who seek out vulnerabilities in such systems.
- The modern criminal actively seeks out institutions that have not prioritized modernization, data science, and the potential of machine learning and artificial intelligence.



Gain

- Providing the appropriate tools and resources to act on intelligence, rather than simply analyzing disparate data elements to form a coherent picture, has the potential to usher in a new era of financial crime compliance.
- By combining the intellectual capabilities of humans with subject matter expertise, along with targeted and operation-focused artificial intelligence and data analysis, organizations can establish a proactive and innovative compliance culture.
- Having the satisfaction of knowing that their regulatory efforts are improving their jurisdiction's ability to target criminal elements and protect both retail and institutional clients.
- A layered analytical approach that combines mechanisms to simplify

complexity, amplify productivity, and enable humans to excel at what they do best.

- Understanding the intricacies of an entity, resolving identity, and placing a strong emphasis on accuracy.
- Bringing critical infrastructure for targeted, operationally relevant artificial intelligence and machine learning tools to the core problems that financial institutions face.
- Enhancing effectiveness & improving outcomes.



Go Beyond Traditional Rules

Third-party "smurfs," corporate shells, and fake identities are commonly used tactics by fraud and money laundering networks that are difficult to detect without a comprehensive understanding of the networks around clients and transactions.

VCIS takes a holistic approach by leveraging geospatial intelligence to automatically identify suspicious links and complex patterns in your data, going beyond traditional business rules and tactics. This advanced system can reveal criminal behaviors that may go undetected by rule-based systems, making it a valuable tool in combating financial crime.



Outcomes

Getting deeper data insights for financial crime investigations

Detecting and investigating complex financial crime is a challenge that often requires analyzing highly interconnected data stored across multiple IT systems. Traditional relational databases are not equipped to reveal the relationships between data points, making it difficult to understand the full context around suspicious activities. However, VCIS is a powerful solution that helps investigators uncover incidents of fraud and money laundering. By leveraging forensic and financial crime expertise, VCIS offers custom simulations that accelerate data exploration and reveal hidden connections. The platform allows clients to reconstruct connections involving multiple levels of separation that would be impossible to identify using traditional systems. VCIS offers a unique entry point for investigators to access both internal data and information from external sources, creating a holistic view of the entities relevant to investigations, such as people, transactions, and companies. In addition, VCIS harnesses the power of graph analytics to help analysts and investigators uncover even the most complex criminal schemes. The platform's functionalities are designed to deliver top solutions for investigations, internal audits, AML alerts review, KYC activities, and more. By using VCIS, investigators have the necessary insights to effectively fight financial crime and economic crime.



Outliers or anomalies

Spatial outliers and anomalies refer to spatial objects whose non-spatial attributes differ significantly from those of their spatial neighbors. VCIS is highly effective in detecting suspicious behavior and outlier transactions by analyzing spatial data. One approach to detecting spatial outliers is to use graph analysis of events based on their latitude and longitude. This can help identify outliers that deviate significantly from the norm. By diving deeper into feature attributes, VCIS can then help detect anomalies that may indicate fraudulent or criminal behavior. In such cases, investigators may refer to other investigative tools or methods to conduct a more detailed investigation. Overall, VCIS provides a powerful set of tools for detecting spatial outliers and anomalies, which can help investigators uncover suspicious activities and fight financial and economic crime.

Get to the bottom of investigations 10X faster with Geo-Smart Location

Geo-Smart Location is a critical technology that supports investigators and financial crime compliance teams in conducting more efficient and effective analysis. By accelerating the exploration of connected data, this technology enables end-users to run complex network analytics searches, thereby reducing the time spent on low-value tasks like manually reconstructing connections between entities across different systems.

VCIS offers advanced search capabilities that provide added value, particularly in the early stages of an investigation when accurate information may not be readily available. By leveraging machine learning and graph analytics, VCIS provides a comprehensive view of the networks and connections between entities of interest. This allows investigators to quickly identify complex hidden connections between multiple entities within seconds, a process that would have taken days using traditional tools. We believe that the use of Geo-Smart Location technology can significantly speed up the way financial crimes are discovered and investigated by financial institutions. By giving investigators the full context surrounding a suspicious individual or situation in seconds, they can follow their intuition and dynamically filter data or explore new relationships. This helps investigators make decisions with certainty and confidence, knowing that they understand the full picture. Overall, the integration of Geo-Smart Location technology in VCIS offers powerful tools for investigators and financial crime compliance teams to efficiently and effectively conduct their analyses, thereby contributing to the fight against financial and economic crime.

Unmask smart criminals no matter how they hide

In the fight against crime, bringing together different sources of information is critical to unmask criminals and identify their accomplices. However, spending too much time chasing information or missing a critical clue can have dire consequences. Identifying suspicious connections across different sources of data, including phones, bank accounts, social media accounts, physical addresses, and open-source information, can reveal suspicious activities or potential accomplices. However, relying on luck

and instinct alone when faced with large volumes of disparate data is not enough. At VCIS, we help uncover complex hidden connections in your data, revealing criminal behaviors that would otherwise go undetected. By leveraging our expertise in forensic and financial crime, we develop custom simulations and graph analytics functionalities that enable investigators to explore their data efficiently and reveal hidden connections. Our approach helps investigators identify suspicious connections and patterns, leading to the discovery of criminal behaviors that would have gone undetected using traditional tools and methods. Overall, our tools and expertise provide investigators and financial crime compliance teams with the capabilities they need to effectively fight financial and economic crime, bringing criminals to justice and making our communities safer.



Understanding customer specific patterns

Reflecting on the insights gained so far, it's clear that understanding the behavior of individual customers is key to providing personalized banking services. By leveraging information about our entire customer base, we can identify behavior that is specific to each individual and detect personalized zones that overlap with common areas. Detecting these personalized zones is akin to detecting keywords that are most descriptive of each sentence in natural language processing use cases. We can use this approach to increase the weight of user-specific locations while reducing weight around common areas. This way, we can gain a better understanding of our end customers and pave the way towards truly personalized banking services.



Using this framework, we can analyze specific user and location data to determine whether a card transaction falls within a known shopping pattern at a particular time of day or day of the week. This helps us better understand our customers' behaviors and provide

tailored services that meet their unique needs.

Overall, by leveraging advanced analytics and machine learning techniques, we can better understand our customers' behaviors and provide personalized banking services that truly meet their needs.

Simplifying investigations for non-technical users

VCIS streamlines investigations by leveraging the power of graph analytics for both technical and non-technical users. Its user-friendly interface makes it easy for non-technical users to access its powerful capabilities without the complexity. With simple actions, users can access advanced simulations and customizations to adapt graph visualizations to their specific needs without requiring technical expertise. This approach enables end users to conduct more efficient and effective investigations, regardless of their technical background.

Teleconnection detection in space & time

The teleconnection technique is a useful tool for discovering pairs of correlated spatial time series, even when the data is located at large distances and exhibits either positive or negative correlation. In certain situations, imagery can add significant value to AML/CTF investigations by enabling the detection, measurement, and visualization of spatial and temporal patterns. Imagery can be obtained from a range of sources, including remote sensing from space, aerial platforms such as airplanes and unmanned aerial systems, as well as surveillance video and photos. Advanced tools like VCIS Geo-Smart Location can provide reliable automation of complex and repetitive digital functions, streamlining the investigative process and enabling analysts to focus on more critical tasks.

Colocation patterns

Colocation patterns can be identified using event-centric models that group neighboring data points together. VCIS incorporates master data management, allowing analysts to create workflows that enable the statistical analysis and filtering of both structured and unstructured financial data. Our robust analytics software facilitates the exploration of diverse datasets to uncover hidden patterns. By applying statistical significance tests to point data analysis, chance patterns can be eliminated. Our data management and analytics tools make it possible to detect colocation patterns, where geo-located events are frequently found in geographic proximity.



Focus on the 5% of alerts that matter It is a well-known fact that a large percentage of alerts generated by anti-money laundering (AML) systems are false positives, with some estimates suggesting up to 95%. To help address this issue, VCIS offers a powerful case management system that can identify connections across existing alerts. By reviewing entities that are involved in multiple alerts within a single case, analysts can gain a better understanding of the overall risk profile and accelerate their analysis.

Moreover, VCIS leverages machine learning algorithms to continuously learn from the insights and feedback provided by analysts. This feedback loop enables the system to adjust the AML scoring based on the latest trends and patterns, thereby improving the accuracy of alert generation and reducing the number of false positives.

Cases Studies

Multinational financial institutions

are leveraging big data and automated contextual monitoring to detect and disrupt financial crime in international trade. With VCIS, users can integrate and consolidate data from various systems and sources to create context and meaning, enabling the identification of significant connections and improving accuracy. Advanced algorithms are employed to enable more sophisticated scoring and analytical approaches. VCIS's lifecycle management allows for continuous assessment and scoring of customer activities for risk. This level of contextual monitoring enhances accuracy and decision-making, while providing insight into data relationships that were previously impossible with traditional analytical and intelligence-based AML solutions. The main benefits of using VCIS include:

- improved customer focus through fewer and higher quality alerts,
- identification of high risk activity tied to money laundering,
- the ability to provide full context of customer historical transactions and risk profile,
- the ability to provide transactional and non-transactional analysis of events.

The Central Bank of Nigeria (CBN)

CBN is taking steps to combat fraud by requiring banks to connect location data with every bank account. As part of this new procedure for opening new bank accounts, CBN mandates that banks validate addresses submitted by their customers. Currently, banks are committing significant resources to physically visit customers' homes to confirm their addresses, resulting in substantial operational costs that impact annual profits. However, VCIS Geo-Smart Location approach can help reduce the cost of address validation while enabling banks to comply with this regulatory directive from the Nigerian financial regulator.

The VCIS Digital ID project is focused on developing a comprehensive solution that meets all regulatory requirements for KYC and AML while providing consumers with a secure and convenient means of identifying themselves. VALOORES is collaborating with the government to establish a National Trust Framework that will enable consumers to use their Digital ID across multiple sectors through the use of interoperable standards and technologies. This framework will also rely on a variety of access points and devices requiring ID authentication to provide seamless services and user experience. The implementation of this project will depend on increased usage of video KYC, biometrics, machine learning, and blockchain/distributed ledger technology. By re-using their verified identity and associated KYC attributes, consumers will be able to open and access online financial services with ease.

Risk and compliance firms address issues of data quality and consistency

To ensure proper risk scoring of transactional data, it is crucial to identify all parties and geographies involved, which can be challenging due to various transaction formats, human error, and attempts by bad actors to conceal their identity. In order to overcome these challenges, the VCIS team uses Geo-Smart location techniques to extract and normalize data. This technology-based data handling service offered by risk and compliance regulated entities facilitates compliance with AML/CFT obligations.



Conclusion

With Geo-Smart Location, financial institutions can utilize critical market characteristics such as concentrations of demographic/lifestyle profiles, product demand, and growth characteristics from consumers to visualize and analyze data. These variables can easily be combined with customer data to make more informed decisions, develop effective marketing campaigns for new prospects and current customers, and analyze current trends.

Analysts can detect patterns, quantify events, risks, and potential consequences. Investigators and decision-makers can follow these leads to prevent criminal and terrorist access to money. Developing new prescriptive methods, deploying machine learning, AI, and critical thinking will advance the discipline of investigating and stopping financial criminal activity.

VCIS lifecycle management enhances the efficiency of investigations through location-based problem-solving to keep pace with the high-speed movement of global commerce, which is undergoing significant changes.

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