



THE INVESTIGATION PARADOX //
TECHNOLOGICAL ADVANCES DELIVER DELUGE
OF DATA DROWNING INVESTIGATIONS

WHITEPAPER



DISCOVER HOW NEW TECHNOLOGY IS CHANGING THE GAME FOR FRAUD INVESTIGATORS

Today we face a new 'paradox' where the same advances in technology that can simplify investigations, by crunching more data, have complicated investigations, by generating more data from more sources than ever before.

The rapid digitization of our personal and professional lives has inadvertently led to a significant rise in fraudulent activities. Technology is enabling both sides of the coin. Investigators have access to new technology that can scour for patterns and fraud faster, whilst fraudsters have greater access to digital mediums and opportunity; making it easier to commit fraud. Often unaware or unphased by the evidentially rich digital footprints they leave behind, fraudsters leave evidence of their actions spread across various data sets, devices, networks and repositories; resulting in a deluge of data for investigators.

Immense amounts of data are created and captured in increasingly complex silos, making investigations for fraud, counter terrorism, human trafficking, cybercrime, internal corporate investigations, harassment cases or IP theft extremely complex and time consuming.

Unfortunately, this means investigations have become larger and more complex, significantly increasing the time needed to act. Fraudsters have room to take advantage and continue to commit fraud undetected for longer. According to a new academic study from the University of Toronto, two-thirds of corporate fraud goes undetected, possibly destroying \$830 billion of equity value annually.⁽¹⁾

In addition, a 2022 study by PricewaterhouseCoopers (PwC) found over half (51%) of organizations have suffered fraud or economic crime in the last two years.⁽²⁾ Given the evolving threat landscape and

increase in fraudulent activity, be it internal or external threats, organizations, governments and law enforcement agencies need new technologies that can see deep into the data, at speed and scale and offer faster, easier and smarter ways to identify suspect activity.

In this whitepaper, we will focus on fraud investigations and the critical need for new technologies and solutions to help investigators collaborate in near real-time, see deep into the data, and supercharge investigations. Whilst we focus on fraud related investigations in this whitepaper, the technologies discussed can also be applied to other large and complex case types - including those mentioned earlier.

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Organization's must act quickly and leverage new technology that is faster through automation; easier to use, enabling seamless collaboration; and smarter with AI to see deep into the data.

FIND FRAUD FASTER

Today, fraud manifests in various forms, ranging from conventional business fraud to romance scams. According to the Association of Certified Fraud Examiners' 2022 Global Report, occupational fraud (fraud committed by individuals against their employer) is the most costly and prevalent form of financial crime globally.⁽³⁾ One of the primary challenges in fraud detection is recognizing the occurrence of fraud in the first place. For many organizations, this realization typically dawns during postmortem investigations when the damage to revenue or reputation has already transpired.

Fraudulent activities are rarely isolated. They usually involve multiple events, huge volumes of data, and are often committed by organized groups of bad actors, making investigations complex and time-consuming. Investigators need purpose-built solutions as fraudulent activities continue to grow in number and complexity. To stay ahead of the curve, organizations must seek out advanced technology.

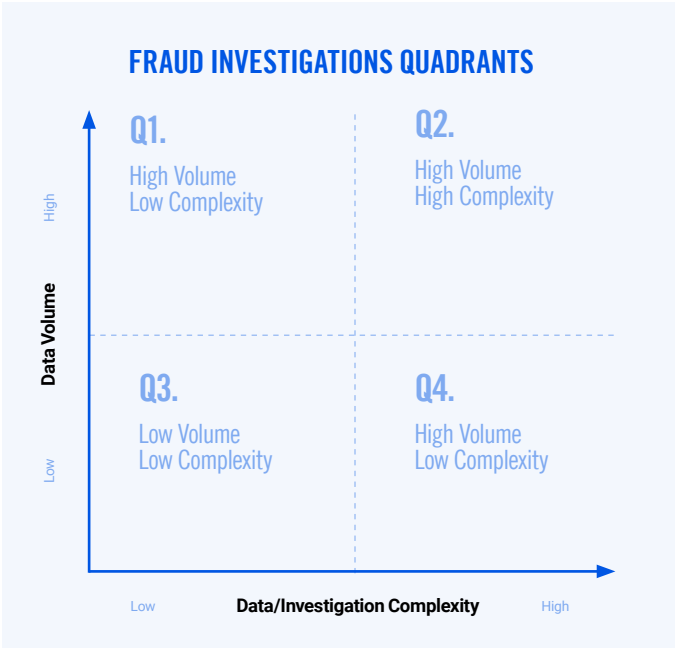
NOT ALL INVESTIGATIONS ARE CREATED EQUAL

Using traditional digital forensic tools, investigators can typically only examine a handful of data sources at a time. In the past, where the volume and complexity of the data for an investigation was low, slower processing and subsequent review times may have been acceptable. However, with the amount of data generated today, cases have become increasingly larger and more complex.

As technology has advanced, data volume has exponentially increased, as has the complexity of the data, resulting in investigations shifting from the 'Low volume / Low complexity' quadrant to 'High volume / High complexity' quadrant. It's critical that investigators have solutions that not only sift through a greater volume of data, but also deal with a variety of data types with certainty, speed and that can scale.

Fraud investigations often contain multiple offenders and victims, resulting in many complex data sources, types and silos. The sheer volume of data sources and types extends across emails, documents on file shares, written correspondence, mobile devices, text messaging, cloud resources, social media, real-world activity, and open-source intelligence. This makes aggregating and analyzing data for insights and patterns extremely time consuming. Investigators need ways of joining the dots and bringing into view previously hidden insights and connections. Relying on human intuition to find the thread among hundreds or thousands of disparate data sources is extremely challenging, resource heavy and unrealistic at scale; particularly when time is of the essence.

Investigators working across law enforcement, regulatory or corporate scenarios should seek out the ability to have a singular perspective of all data within an investigation; a single source of truth, when conducting investigations. By utilizing AI, deep link-analysis and data connections, investigators and analysts can collaborate and draw correlations across multiple data sources; swiftly and easily, surfacing investigation-critical insights to identify fraud fast with certainty.



The industry-recognized Fraud Triangle model, is a concept that explains the main reasons fraud (and other types of crime) is committed.⁽⁴⁾ The main elements are pressure, opportunity, and rationalization. Understanding the framework and employing tools and new technology is critical to help organizations identify patterns and detect fraud faster.

Criminals look to pinpoint opportunities for fraud by identifying vulnerabilities in systems and processes. Investigators can use the Fraud Triangle framework in order to identify and score risks based on human element to exploit such vulnerabilities and weaknesses. Focusing an investigation using AI for language analysis by dissecting textual data to uncover pressure points and rationalizations used by offenders can allow investigators to see deep into the data and spotlight insights. AI paired with language analysis can be used to pick up on subtle nuances and emotional tone; attaching risk scores and assist investigators with identifying the three pillars of the Fraud Triangle. The higher the identified risk, the more likely individuals are to commit fraud. By incorporating advanced ethical AI technology, users can now sift through vast volumes of textual data, extract relevant information and recognize potential fraud scenarios swiftly and accurately. This multidimensional approach speeds time to answers and empowers organizations to stay one step ahead of evolving fraud tactics.

Take for example romance scams, where the US Federal Trade Commission reports that the median financial loss suffered by a victim is US\$4,400 and that almost 70,000 people reported a romance scam in 2022.⁽⁵⁾⁽⁶⁾ It's critical for investigators to look deep into the data and be able to identify the three key elements of the Fraud Triangle that fraudsters use: pressure, opportunity and rationalizations. Analytic AI capabilities for fact extraction, categorization, classification, and configurable risk scoring gives data analysts and investigators an edge.

With advanced AI tools, investigators can make sense of large volumes of text-based data. By leveraging natural language processing (NLP) algorithms, these systems are adept at identifying intricate details, linguistic inconsistencies, and manipulative language often employed by those engaging in fraudulent activities. Beyond romance scams, this capability is particularly valuable in uncovering other types of fraud including 'advanced fee fraud' (such as 419 scams) where fraudsters use specific language traits and techniques to create persuasive and convincing messages.⁽⁷⁾ These NLP algorithms can identify patterns which humans often miss, based on keywords alone. This is especially important when investigators rely on 'exact' keywords; consider if words are misspelt become 'regionalized' (such as slang) these important nuances can easily be missed or confused. Importantly, NLP analysis helps gauge the emotional tone of communications, identifying instances where individuals might be coerced or manipulated.

In addition to fraud cases, other types of crimes need a solution that can see beyond the text; meaning image detection capabilities have become part of today's investigations. Solutions must integrate AI that can find and classify visual content saving investigators' time and mental fatigue by letting the computer do the classification for them. By combining knowledge and use of the Fraud Triangle, with the ability to analyze data held within 1000's of different data types, investigators can prioritize the results – bringing to the surface, data that requires urgent review and action.

THE FRAUD TRIANGLE MODEL

by Donald R. Cressey



01. PRESSURE

The management or employees have incentives to get something or pressure to relive something by committing fraud.

02. OPPORTUNITIES

Certain circumstances within the company give the management or employees an opportunity to commit fraud.

03. RATIONALIZATION

Attitudes and pressures exist in the company that causes management and employees to rationalize their intention to commit fraud.

THE NUIX VIEW

Nuix Neo technology gives investigators new tools to supercharge investigations. Smart AI combined with deep link-analysis used to identify data connections to see deep into the data to unearth patterns, behaviors and bubble to the surface key evidence. Deployed on the Nuix platform, Nuix Neo Investigations is designed to handle large and complex datasets, bringing digital forensics investigators, analysts, and data scientists together with a single view into all investigation data, aiding collaboration and getting to the right answers in record time.

Identify fraud faster, easier, and smarter with Nuix Neo Investigations.

01. FASTER

Automate

Nuix Neo Investigations accelerates investigation timelines offering solution packs designed specifically for different use cases. With the ability to automate workflows investigators can ensure consistent, robust and repeatable workflows that are tuned to case specifics. This improves quality control, reduces errors, and the time to value.

02. EASIER

Simple to use

Nuix Neo Investigations reconfigured dashboards, seamless collaboration, and user-friendly interfaces to visualize data and accelerate time to answers. Providing a single view across all data, Nuix Neo Investigations offers an intuitive user-friendly interface that provides access to remote and non-technical users; all while ensuring your data remains secure with case and item level security.

Collaborate

Nuix Neo Investigations brings together all stakeholders within an investigation, empowering digital forensic specialists to work alongside investigators and analysts. The platform provides user specific views into their data and can scale to support hundreds of investigators and cases. Nuix Neo Investigations allows teams to collaborate in real time, with all eyes on the data as soon as processing starts. Investigators can share case files and reports to pool their collective knowledge in real time. This allows for seamless collaboration and a coordinated approach to investigations, regardless of technical expertise or location.

NUIX AI

Nuix follows three core principles of explanation when designing AI technology.

01. EXPLAINABILITY

Ensures transparency by opening the 'black box' of AI, making the training data, biases, and reasons behind predictions clear to humans.

02. ACCESSIBILITY

Ensures human control over AI, emphasizing customization and usability.

03. SPECIFICITY

Focuses on targeted applications, allowing users to impart their expertise into models, resulting in improved accuracy and credibility in domain-specific outcomes.

These principles uphold ethical AI standards and community trust while harnessing AI's power to benefit customers and crucially assist in detecting and investigating fraudulent activities.

03. SMARTER

AI to uncover the truth

A vital aspect of the investment involves empowering Nuix Neo Investigations with AI capabilities. Powerful AI classifies and contextualizes data (documents, communications and media) to quickly identify relevant data, helping to uncover the truth. This augmentation has bolstered Nuix's capacity to comprehend the context and inherent risks in unstructured data. This empowers fraud investigators to identify culprits quickly.



Nuix Neo Investigations is designed to handle large and complex datasets, bringing digital forensics investigators, analysts and data scientists together; aiding collaboration and getting to the right answers in record time.

PROVEN AT SCALE

Nuix counts some of the world’s largest law enforcement agencies, global corporations, intelligence agencies, and major regulators amongst its customers. Globally, over 1,800 organizations of various sizes rely on Nuix for complex investigations. Law enforcement agencies like Police Scotland saw a significant reduction in investigation time using Nuix solutions:

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The Nuix workflow led to a successful conclusion of the fraud investigation over several months, which the investigative team estimated would have taken years to complete using old methods. This is, more robust, more efficient and more cost effective than anything ever used previously.

Senior Investigator - Police Scotland

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^[2] PwC: Global Economic Crime and Fraud Survey (2022)

^[3] Association of Certified Fraud Examiners Report: “Occupational Fraud 2022: A Report to the Nations” (2022) <https://legacy.acfe.com/report-to-the-nations/2022/>

^[4] The Fraud Triangle Model by Donald R Cressey (1953)

^[5] US Federal Trade Commission: 2022 Data Spotlight: Romance Scams <https://www.ftc.gov/news-events/data-visualizations/data-spotlight/2023/02/romance-scammers-favorite-lies-exposed>

^[6] US Federal Trade Commission: 2022 Data Spotlight: Romance Scams <https://www.ftc.gov/news-events/data-visualizations/data-spotlight/2023/02/romance-scammers-favorite-lies-exposed>

^[7] A Digital Forensic Analysis of Advance Fee Fraud (419 Scams) | IGI Global (igi-global.com)

THE VERSATILITY OF NUIX NEO INVESTIGATIONS

Nuix Neo Investigations is not limited to fraud investigations. Nuix Neo Investigations on the powerful Nuix Neo platform is a valuable asset for any organization looking to tackle complex data challenges. Nuix Neo Investigations has been built by experts in cybersecurity, law enforcement, digital forensics, investigation, legal discovery, intelligence, counterintelligence, and information governance from across the globe. This dedicated team of experts works tirelessly to enhance the technology and provide unparalleled support worldwide; continuously evolving and adapting to keep up with the ever-changing fraud landscape.

CONCLUSION

In today’s digital age, fraudulent activities are a growing concern for organizations and individuals globally. As these activities become more sophisticated, the need for advanced technology to combat them has become increasingly urgent. Nuix’s powerful solutions on the Nuix Neo platform are equipped with cutting-edge ethical AI capabilities and have proven to be highly effective in investigations. Our comprehensive approach and commitment to constantly evolving technology make us a reliable partner for any organization looking to counter fraudulent activities and protect their data. Contact us today to learn how Nuix can supercharge your fraud investigations.



FINDING TRUTH IN A DIGITAL WORLD

Learn more about Nuix
or contact us for a free demo
www.nuix.com/contact-us



Nuix (www.nuix.com, [ASX:NXL](#)) is a leading provider of investigative analytics and intelligence software, that empowers our customers to be a force for good by finding truth in the digital world.

We help customers collect, process and review massive amounts of structured and unstructured data, making it searchable and usable at scale and speed, and with forensic accuracy.

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