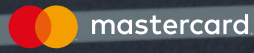# VOCALINK

mastercard

ANTI-MONEY LAUNDERING SOLUTIONS

THE RISE OF THE MULE

Identifying mule accounts and tracking laundered money

CONTENTS

INTRODUCTION

The problem of money laundering and mule networks is not a new one. For years, people involved in organised crime have endeavoured to set up accounts for the express purpose of moving the proceeds of crime through a network, in order to obscure their source, extract funds and make recovery by Financial Institutions (FIs) nearly impossible.

Mule networks are a collection of linked accounts belonging either to individuals or businesses which are used – sometimes without the knowledge of the account owner – to move the proceeds of crime. This is a process known as money laundering. Until now, getting a complete picture of how these networks operated and how vast and connected they might be was extremely difficult, since the number of FIs with accounts involved in a typical illegal transaction, and the total number of payments used to disperse funds, were substantial enough to make piecing together the data slow and impractical.

As stated in the UK Payment Strategy Forum's (PSF) 'Payments Strategy for the 21st Century': "These activities harm all end-users of payments; individuals, businesses, charities, government, and public sector organisations. They also cause a direct loss to [Payment Services Providers]".

Part of the reason for the rise and success of money launderers and mule networks is the speed at which modern payment systems enable money to be both received and sent. People and businesses benefit from the speed and convenience of transferring money 24/7; unfortunately, criminals are also quick to leverage the benefits to fund their activities and launder money. Money stolen from people, businesses and government departments is quickly moved through payment systems, making it harder to trace the further it moves away from the victim's account. As a result, many existing old-technology or manual anti-money laundering processes now struggle to identify and flag suspicious transactions.

Additionally, FIs currently only have a partial view of the scale of the problem, as their view of both payment transactions and accounts is extremely limited. Individual FIs are challenged in their ability to tackle illicit funds being moved once a payment leaves their systems because they don't have line of sight of the end-to-end payments flow. Certainly, they don't see what happens to payments once they leave them and enter the system. This makes it difficult to see the system holistically and therefore identify patterns and indicators.

In line with the PSF's and other similar organisations globally, focus on 'establishing a capability for data analysis of payment transactions moving between PSPs, to better identify fraudulent and criminal activity', we also believe that the best way to combat the speed and inter-bank reach of the actors involved in money mule activity is to look holistically at the system, rather than trying to operate only within a subset of the data. Every FI has a number of powerful tools which can identify and stop the proceeds of crime, however these tools are only as good as the data that they see, and no single FI can see the entire end-to-end payments flow across the banking network.

// It is noted that there is a marked overlap between money laundering and terrorist financing – both criminals and terrorists use similar methods to raise, store and move funds. //

Source: UK national risk assessment of money laundering and terrorist financing report, HM Treasury & Home Office

The Scale of the Problem

// The best available international estimate of the amount of money laundering is equivalent to some 2.7% of global GDP or US$1.6 trillion in 2009. The NCA assesses that many hundreds of billions of pounds of international criminal money is laundered through UK banks, including their subsidiaries, each year.

The scale of the laundering of criminal proceeds is therefore a strategic threat to the UK's economy and reputation. The proceeds of virtually all serious and organised crime in the UK as well as the proceeds of a significant amount of international serious and organised crime (including corrupt Politically Exposed Persons seeking to launder the proceeds of their corruption and to hide stolen assets in the UK) is believed to be laundered into and through the UK //

Source: the National Crime Agency (NCA)
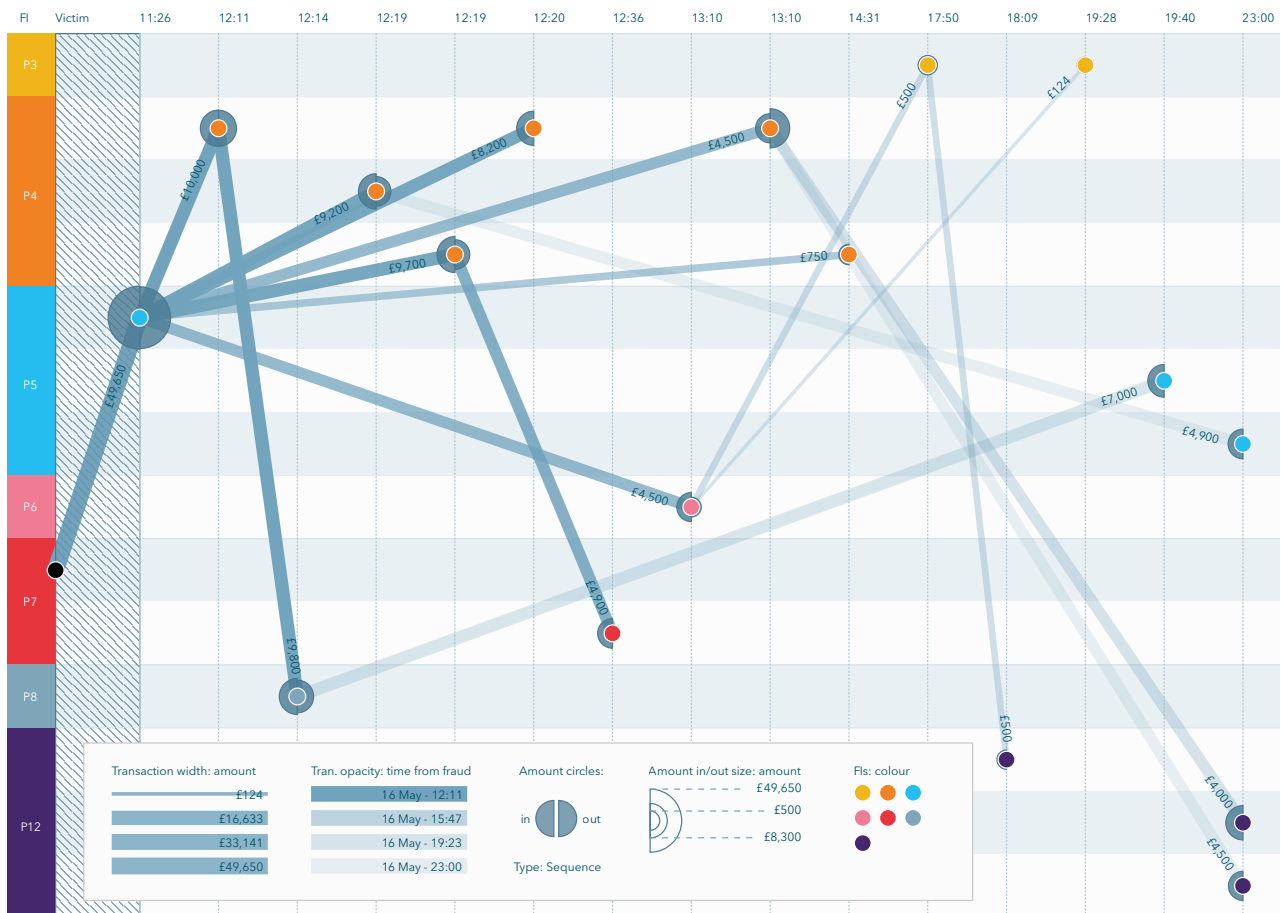www.nationalcrimeagency.gov.uk/crime-threats/money-laundering

Figure 1
Example of how fraudulent funds are distributed using mule networks

TURNING AN IDEA INTO REALITY

Starting hypothesis: Vocalink could overlay payments data with cutting-edge analytical techniques to highlight the scale of suspected mule accounts operating within the banking network and map the movement of stolen funds through the UK payments system.

HOW WE PROVED OUT THE HYPOTHESIS

For the first time ever, Vocalink brought together two years' worth of FPS transaction data in order to build a representation of the UK's payments network. We connected nearly 87 million accounts across FIs, detailing over 357 million individual payment relationships. The 12 participating FIs represented the overwhelming majority of the UK interbank payments volume.

We would like to take this opportunity to thank everyone – all twelve Financial Institutions, Financial Fraud Action UK and the Payment Schemes – that took part in the Proof of Concept, and supported us throughout the process to help turn a hypothesis into reality.

The UK payments network is defined as a collection of bank accounts connected together by transactions that indicate a direct economic relationship between two accounts. For the purposes of this report, a money mule is a person who participates, sometimes unwittingly, in the transfer of illegally obtained money between different accounts. These proceeds of crime are transferred through a network in order to obscure their source, extract funds and make the recovery of stolen funds by FIs almost impossible.

The Proof of Concept had three agreed deliverables:

1. Mule network MI: To provide graphical representations, insights and statistics of suspect money mule networks;
2. Identification of suspect mule accounts: To identify a proportion of suspect mule accounts within each participating FI's customer base;
3. Funds path mapping: To track funds from source through the payments network.

We created relationship-based views of the network, by building fund dispersion trees from confirmed frauds and money laundering activity – known as 'seed accounts' – and plotting their direct relationships with other accounts.

This enabled us to trace funds through the UK banking network and build up a statistical understanding of how suspect money flows through it. It also allowed us to filter the entire UK payments network down to just those accounts and relationships that had been seen to demonstrate suspect mule behaviour.

RESULTS AND INSIGHTS

A number of key insights were identified following the successful Money Mule Networks Proof of Concept (PoC) and analysis of the results:

- By volume, the majority of mule networks are short and linear; however, the presence of a large, highly-connected central mule network in the UK (composed of c.25% of all suspect mule accounts), was detected;

- Each FI has a money mule problem, in that all of them – unwittingly – have accounts used both to receive proceeds of crime and to send on these illegal funds. Some FIs are, however, targeted differently than others;

- Single fraud and money laundering cases can move through multiple FIs in incredibly short periods of time;

- A subset of FIs have mule accounts on their books that preferentially move money to/from one another;

- Different behaviours in mule account activity have been observed within different FIs in terms of how deep within a mule network their accounts are used, and how illicit funds are extracted;

- Certain FIs tend to have a proportionately higher number of mule accounts which are involved either at the beginning or towards the end of the chain in the dispersion of illegal funds. For those FIs with more mules in the earlier part of the process, it could suggest a link to the account opening processes;

- Controllers of a mule account move money into and out of accounts at different speeds depending on where in the mule chain an account is used;

- Seven major routes of extraction were identified as being the most common ways for criminals to extract illegal funds from the UK banking network;

- The pattern of the movement of illegal funds through the UK's payments systems is significantly different from that of legitimate money, meaning that suspect accounts behave fundamentally differently to 'normal' accounts;

- The rate at which a mule account is re-used could represent how valuable it is to a criminal network, as well as indicating the impact of shutting down that particular account;

- The more efficiently money can be followed, the more chances there are of identifying illegal funds and making possible its recovery – a significant finding for the victims of financial crime, as well as for UK law enforcement agencies which look to trace and freeze the proceeds of crime.

A GAME-CHANGING SOLUTION

To tackle the significant problem of money laundering and mule networks, Vocalink was tasked with analysing a 'snap-shot' of payments data to identify and track suspected money mule activity across the UK payments infrastructure. We worked with 12 FIs, two payments schemes and Financial Fraud Action UK (FFA UK) to prove the hypothesis that we could overlay payments data with cutting-edge analytical techniques to highlight the existence and scale of suspect mule accounts operating within the banking network, and map the movement of funds through the UK payments systems.

The results are significant and conclusive:

- We have proven that it is possible to develop game-changing anti-money laundering solutions to tackle the issue of money mules;

- Our solution can help address concerns by consumer bodies, in particular assertions in the recent Which? super-complaint, that the industry is not doing enough to protect people and businesses from fraud;

- The solution has the potential to suffocate funds dispersion routes, and to make payments more secure for both individuals and businesses.

These unprecedented findings mark a vital step forward for the industry in the fight against organised financial crime, as well as an opportunity to help reduce the impact of fraud on both FIs and their customers.

Vocalink has the technology and proven methodology to quickly implement a solution that works to scale, effectively tackling Money Mules who move their funds through banking systems.
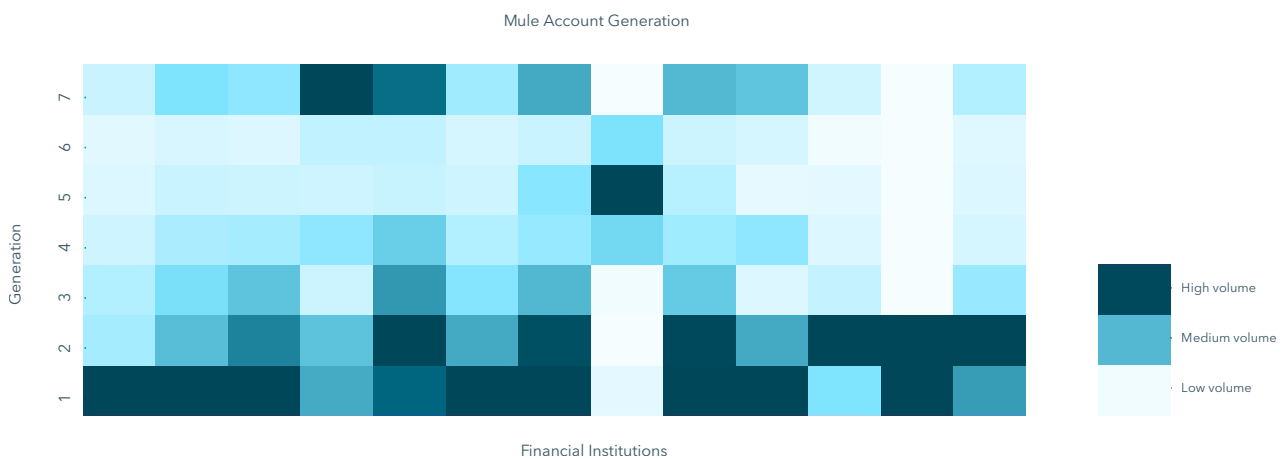

Figure 2
Heatmap showing the distribution of suspect mule accounts through the stages of a mule network, against financial institutions in the UK
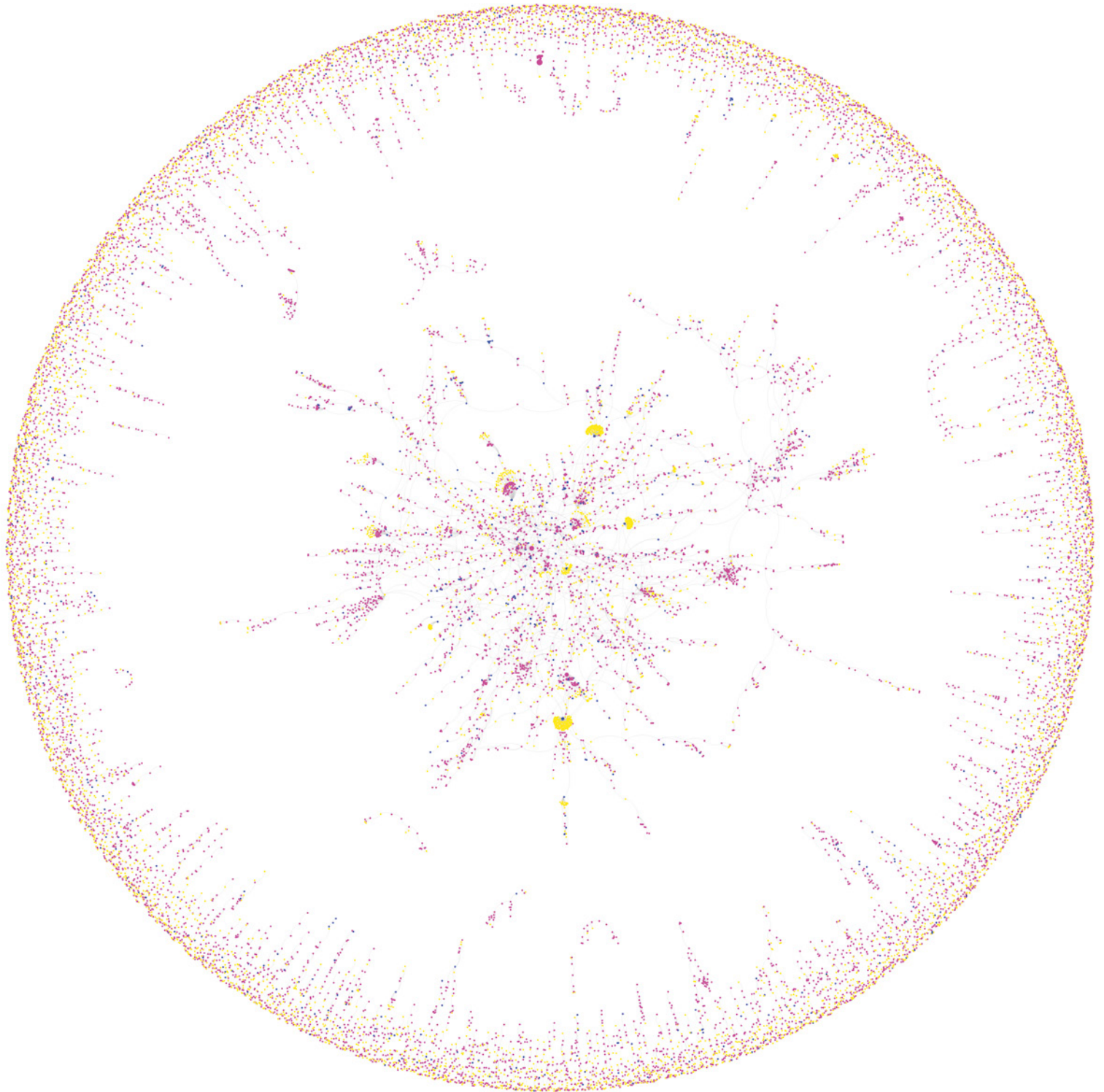
Figure 3
The first view of the money mule network in the UK

BENEFITS FOR EVERYONE

The results show that Vocalink is able to highlight the scale of mule accounts operating within the banking network and map the movement of stolen funds through payments systems. A live solution can be implemented rapidly in any market to detect and prevent money laundering activity and deliver measurable benefits to participating FIs, their customers and society as a whole.

- **Investigate criminal networks:** We can enable an FI to identify and flag accounts and entire networks involved in the theft and laundering of money to fund organised crime;

- **Assist in the repatriation of stolen funds:** Our Mule Insights solution can track money through the payments system faster than is currently possible, identify where funds are resting in various accounts, give FIs the information they need to freeze these accounts, and provide a fund repatriation path to enable money to be returned to the victim – whether that is an individual, a business or a government department;

- **Support the fight against organised crime:** We enable the speedy disruption of mule networks, and the provision of fast and accurate ways to monitor them;

- **Save millions – if not billions – of pounds per year to benefit us all:** Government departments fall victim to fraud and losses at the hands of criminals every single year. Putting money back into Government coffers would protect valuable funds;

- **Help FIs to maintain regulatory compliance:** We give FIs timely, fact-based insights that enable them to better understand the payments going through their systems.
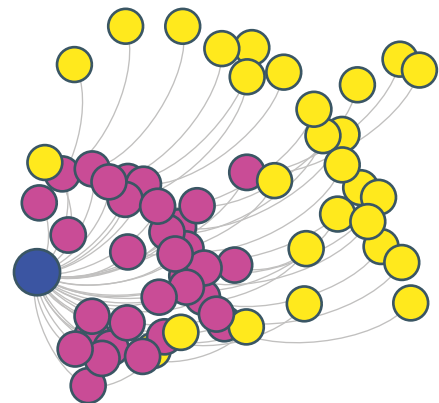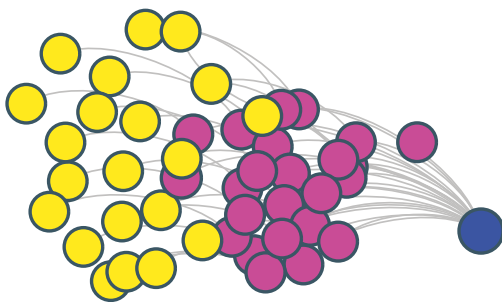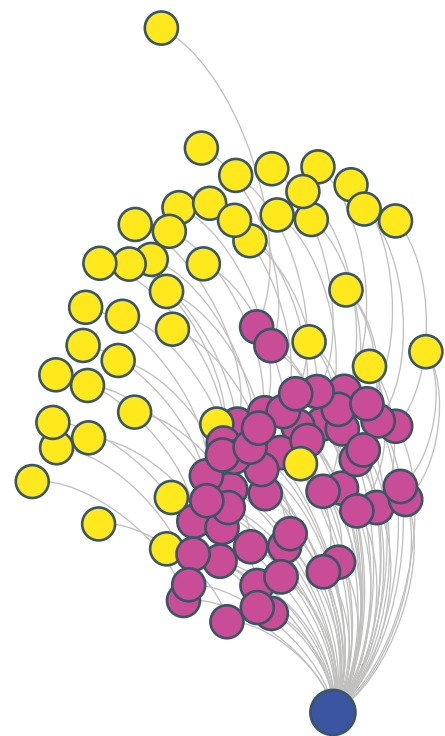
Figure 4
Patterns showing funds moving from a victim (yellow) through a money mule network (pink) and out of the system (blue)

Our **Mule Insights** solution can be quickly and effectively implemented, with measurable benefits for participating FIs:

Significant resource efficiencies

Feedback from participating FIs is that they have been amazed by the level of accuracy achieved by our Mule Insights solution. This can deliver key resource efficiencies for FIs:

- Ensures scarce resources are focused in the right areas;
- Improves detection rates;
- Enables a faster speed of response, reducing consumer impact and dissuading criminals from targeting the participating institution.

Measurable cost savings

The ability to disrupt criminal network activity will have a lasting effect and be a strong deterrent for future activity. Reducing money laundering activity through the targeted closure of accounts and disruption of key criminal networks can in itself deliver significant and measurable cost savings to participating FIs.

Early warning of 'Test' transactions

A proportion of analysed accounts showed a 'test' transaction has been made ahead of the main 'payload' of laundered money being moved into the account. The ability to pre-empt illicit activity by alerting FI's to these test transactions has the potential to:

- Disrupt criminal activity at the very start of activities;
- Prevent fraud and money laundering from actually taking place;
- Save valuable time and resource through prevention of cases that may have occurred had the account remained open.

Identification of high risk 'endpoint' accounts

Analysing endpoints where funds exit the system enables the identification of suspect accounts which repeatedly receive funds connected with criminal activity. This close monitoring of customers' money which is sent to known high-risk endpoints can deliver:

- Greater prevention and recovery of funds exiting both the banking system and each participating institution;
- Disruption of criminal networks' "usual" methods of funds extraction.

CONCLUSION

The speed of instant payments systems is being exploited to move rapidly the proceeds of crime between accounts, to a large degree thwarting the analysis and efforts by FIs to identify and track illicit funds and create a path for repatriation.

It has been demonstrated that money mule networks in the UK extend across the industry; they are not localised and affect all FIs. By analysing payments transaction data at an industry level, Vocalink has proven there is a solution to track money mule networks, enabling FIs to act and protect both themselves and their customers.

Analysis shows there is a fundamental difference in the behaviour of suspect mules compared with normal accounts, and that they move money rapidly through networks of accounts in order to hide the true origins of funds. It has been shown that patterns of mule dispersions can be identified within a payments network.

The PoC proves that our approach makes it possible to identify rogue, individual patterns of behaviour that – in isolation – are unremarkable, but seen together start to betray simple, consistent behaviours that are a strong indication of illegal financial activity.

In addition – and significantly – the PoC also proves that Vocalink's technology and methodology can be scaled up to support a live solution that will:

1. Identify networks of suspect money mule accounts;
2. Provide insights on mule behaviours, and;
3. Track illicit funds through the financial system.

These insights have a number of implications for consideration by the financial services industry:

■ Confirmation that the extent of the money mule networks issue is not localised, but affects all FIs;

■ Proof that working together to combat money mules is the only way to make a significant impact and the efficacy of our solution will only continue to improve with the addition of more sources of data over time;

■ As well as evolving from the learnings on an ongoing basis when live, the solution will also benefit from the participation of other FIs, for example those that were unable to participate in the PoC but that have registered an interest in taking the live service.

All of the analysis and insights produced by Vocalink during this PoC prove that there is an opportunity for the industry and Government to have a significant impact on how organised crime takes advantage of the UK payments network, by using an approach which harnesses cutting-edge data science technology and methodology to support and inform the efforts of investigators on the ground. The impact of these findings goes far beyond FIs' in-house fraud functions, into Anti-Money Laundering and Financial Crime prevention, as well as to the heart of payment channels and customer experience.

The spotlight is firmly on the issue of money mules; now is the time for action. We are ready to turn this solution live and start protecting people, businesses and the wider economy from the considerable negative impact of money laundering and mule networks.

ABOUT VOCALINK

Vocalink creates innovative solutions that solve known problems using the power of payments data. We help companies to improve their business by supporting their regulatory obligations, creating a frictionless customer experience and enhancing operational efficiencies.

By combining cutting-edge data science techniques with an intimate knowledge of payments data – based on our heritage as the trusted, secure operator of the UK's payments networks for nearly 50 years – we develop solutions that will improve outcomes for people, businesses and the wider economy.

We have laid solid foundations; preparing the data, data warehouse and technology stack. 30 billion transactions have been loaded on to the new data warehouse and our first live anti-fraud solution is in place – scanning for fraud at this very minute. Other new analytical services include enhanced payment purpose analysis for the Bacs Scheme.

In addition to investing substantially in our technology, we have brought together an impressive team of people, in particular data scientists, with rich experience across the financial services, fintech and fraud solution sectors. They have worked for organisations such as ACI Worldwide, Beyond Analysis, CallCredit, Experian, Equifax, HSBC, Lloyds, Morgan Stanley, NCR, the New York Times, RBS and Santander.

CONTACT

For more information on our Mule Insights solution, please email us:

info@vocalink.com

Head Office
1 Angel Lane
London
EC4R 3AB
United Kingdom

info@Vocalink.com

Vocalink.com/insights

Registered No. 6119036

740026/03.050617