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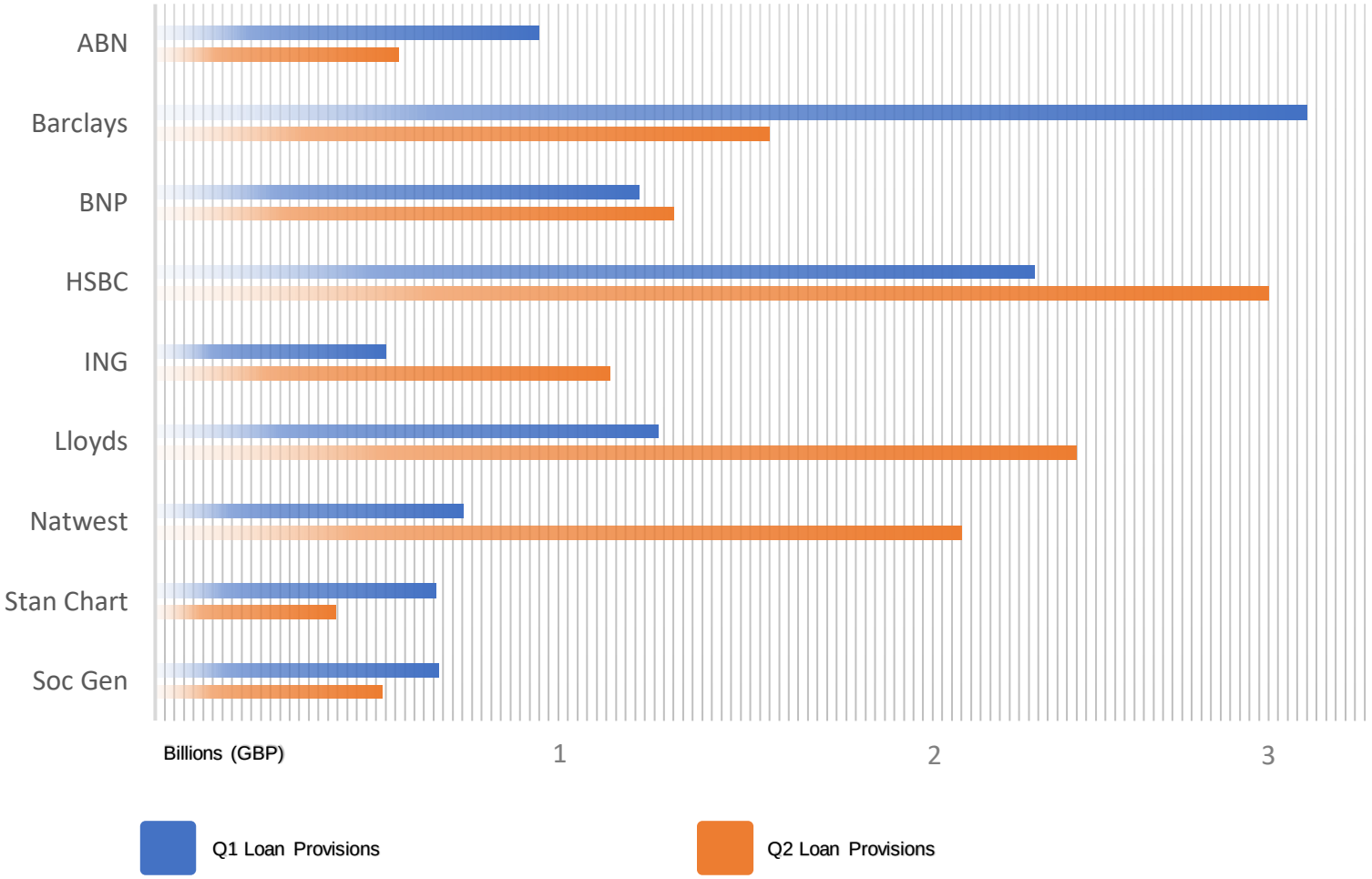
Identifying Fraud

The COVID-19 Loan Book

October 2020

H1 Loan Impairments: Select UK & EU Domiciled Banks



A Challenging Time For Banks

Provisions jumped in H1 2020

£25 BN / €27.5

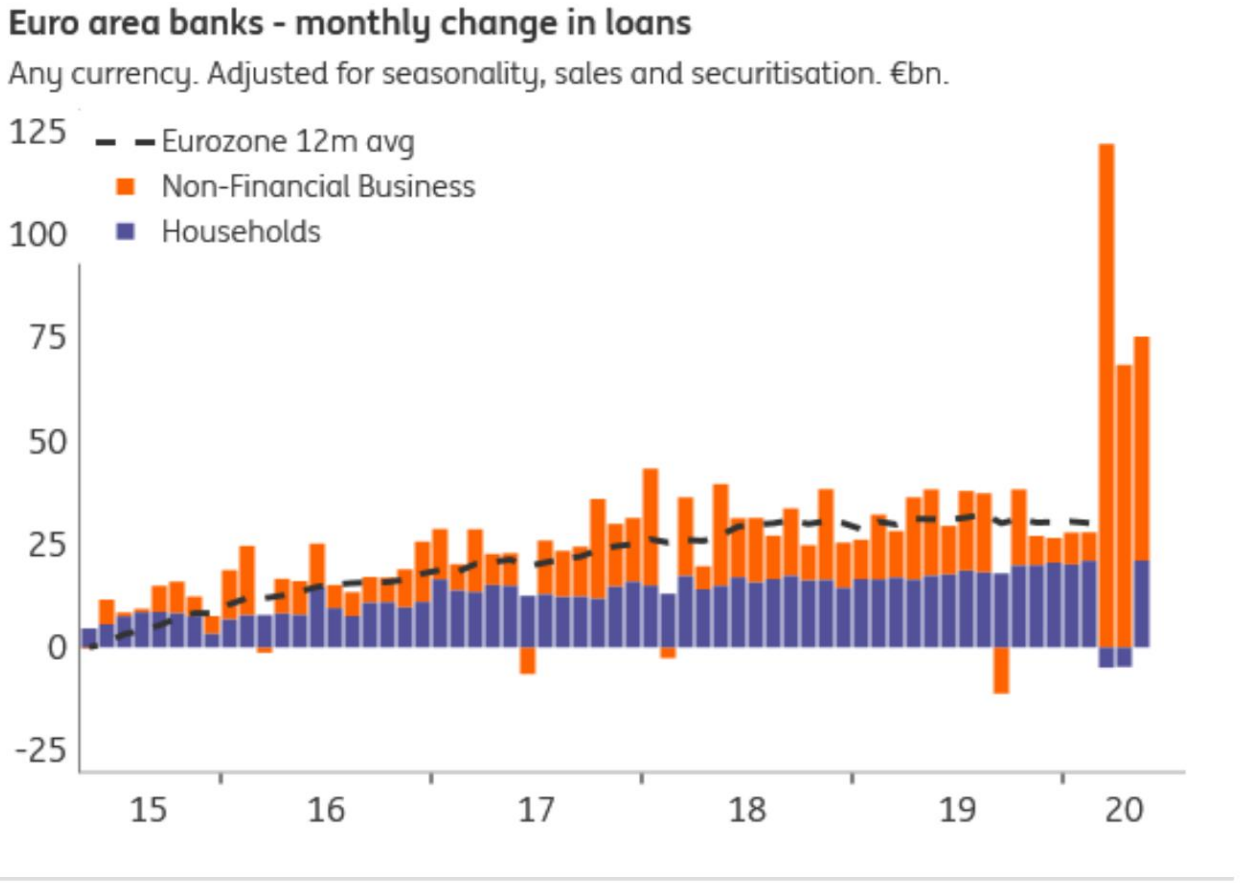
H1 Loan Provisions*

Large write-offs in H1 2020

* Impairment charges converted from USD and EUR to GBP in some cases.
All data sourced from the Q1 & Q2 financial reports

H1 COVID Related Lending: Select UK & EU Domiciled Banks

In the months March-June 2020, Eurozone banks lent an additional €165bn to businesses and households, with €120bn being borrowed in that month alone. France and Spain experienced the largest increases in COVID related lending, with lower numbers in Germany and The Netherlands. With unprecedented levels of state guaranteed borrowing, **banks and governments are now turning their attention to solvency and borrowers ability to be able to repay.**



Source: ECB, Macrobond, ING calculations

COVID lending surpassed €165 BN in 4 months

Banks had to override their risk models as governments asked them to provide emergency loans to corporates and individuals

€165 BN

H1 Eurozone COVID Related Lending

A huge spike in COVID related lending

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Provisions And Impairments

Banks have been forced to focus on reviewing their loan books. Activities range from improving data quality, to in-depth reviews of existing lending, to new COVID-19 related lending and the likelihood of default. These reviews are detailed, multi faceted and wide reaching, important so as to understand the true health of the banks portfolio

Banks are now faced with a variety of challenges regarding their loan books. These include:

- **Reviewing the current loan book,** understanding what is already committed
- **Deep diving on specific 'at risk' sectors** specifically those hard hit by the COVID-19 pandemic, transportation & food and beverage, for example. Industry and sector code analysis will become key.
- **Reviewing the loan book from a country risk perspective.** Some of the EU economies, such as France, Italy, Spain & The UK were seriously impacted by COVID-19 (UK GDP fell by more than 20% in Q1 2020). Understanding country risk and exposure when looking at the loan book will be important when prioritising the portfolio reviews. The risk of contagion remains high, although recently mitigated with the agreement to pump €750 billion of funding into the European economies
- **Understanding second order risk.** When a major client gets into trouble, it is absolutely critical that the bank can quickly understand (or ideally already know) what the impact will be not just on the lending that they have provided to the company now in trouble, but the entire supply chain, across their lending portfolio
- **Retrospectively examining new COVID-19 related lending.** A lot of lending had to be done quickly, ignoring risk models and risk appetite, perhaps even undergoing a 'Know Your Client' light process. All of the work that was done quickly, will now need to be re-visited. Some banks have lent up many multiples more than they would annually in the space of three months , this loan 'hump' will also present portfolio management challenges, as the portfolio requires review and day to day oversight
- **Detecting Fraud in the loan book**
- **Reviewing the loan book from an ESG perspective** and aligning with the ECB regulations and guidelines (mentioned earlier in this paper)
- **Ensuring that they have accurate data and the right technology** in place to undertake these review activities quickly and accurately

Reviewing the current loan book

Banks already have loan review and credit review cycles baked into their operating models. However, these cycles tend to be annual and linked to a risk appetite and models that are more static than dynamic. In times of crisis, and economic shock, such as COVID-19, banks will have to undertake 'out of cycle' reviews as they try and understand the impact on their client base.

The challenge is undertaking these reviews, at pace, with a limited number of staff, based on limited existing data and information. Whilst data and information can be obtained from the usual sources of annual reports and meetings with clients, this input tends to be somewhat retrospective and incomplete. Making an in-depth assessment of the state of a clients business and the risk to the bank remains a challenge, and in a lot of cases is not identified until the client runs into trouble and defaults. This will leave the bank with the option of either helping organisations re-structure their debts and potentially their businesses, or going bankrupt leaving the banks with losses.

Deep diving on specific 'at risk' sectors

Banks and economists are already highlighting those sectors that are most at risk. These range from transportation, to oil and gas, restaurants and leisure. On an individual basis the Dutch banks have also called out specific professions such as dentists, physiotherapists and pilots.

When undertaking credit reviews it is absolutely key to understand the full picture and not just the specific client. Take a recent example, Hin Leong, a major oil commodity house, that via its' subsidiary, Ocean Tankers, has for more than 50 years supplied most of the worlds ships with fuel out of Singapore. When Hin Leong collapsed in the first quarter of 2020, as oil prices plunged and the company sought creditor protection, concerns about fraud and the entire ecosystem in Singapore led banks to quickly restrict credit to the entire sector. Since Hin Leong there have been further collapses and fraud investigations, notably Agritrade and Zen Rock Commodities.

Specific "At Risk" Sectors

COVID-19 has not impacted all sectors equally. Banks have been calling out specific sectors where they are seeing economic impact. These include Oil & Gas, Aviation, Restaurants and Leisure and Retail

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Fraudulent Behaviours

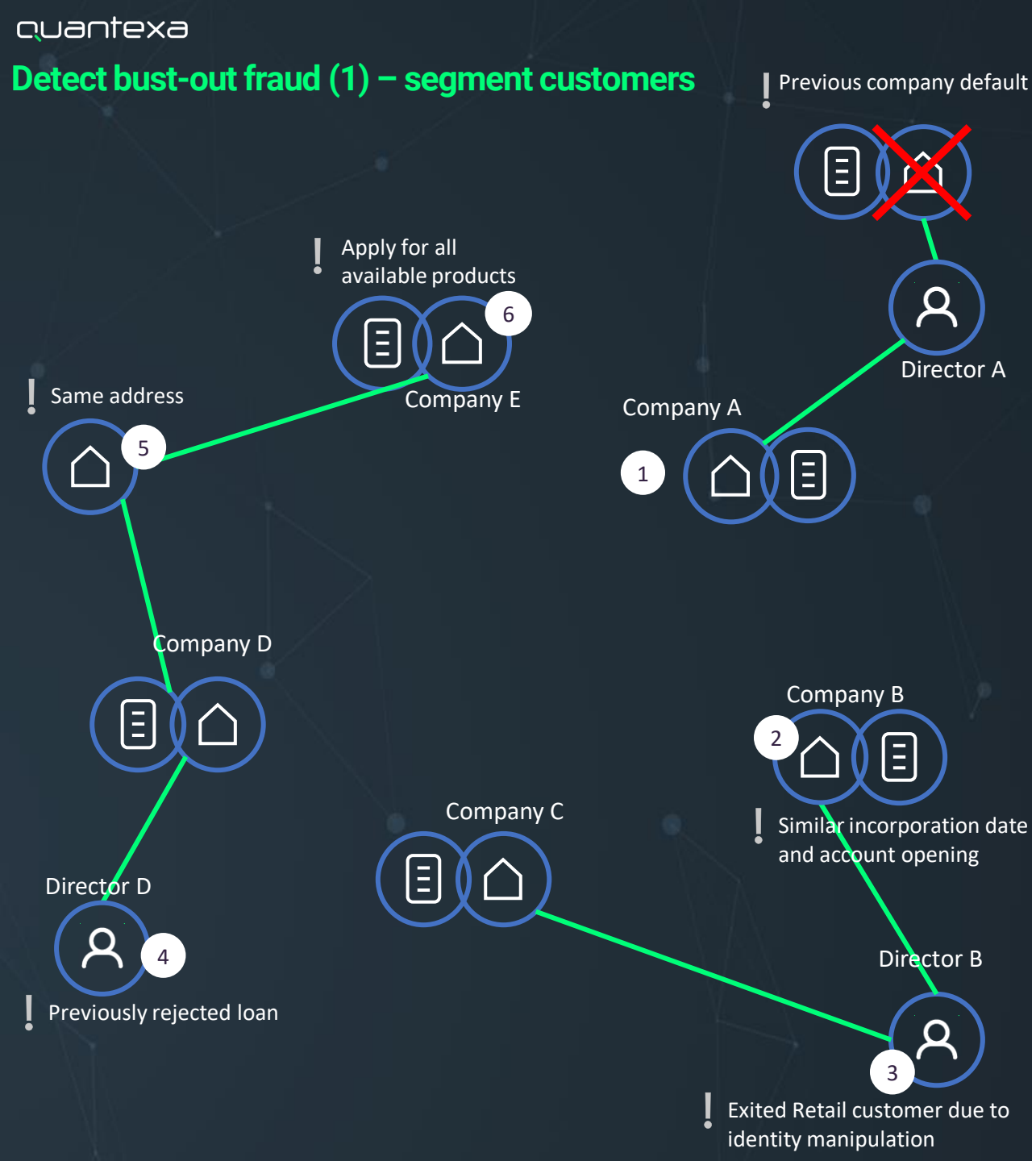
6 Sectoral Examples – Happening Right Now

October 2020

6 Sectoral Examples

#	Example	Key Characteristics
1	Detect bust-out fraud	Bust-out fraud, also known as sleeper fraud, is primarily a first-party fraud scheme. It occurs when a consumer or business applies for and uses credit under their own name, or uses a synthetic identity, to make transactions. Eventually, the fraudster uses all available credit and stops making payments. (1)
2	Short firm fraud	Usually, the business doesn't try to establish any form of credit history or credibility, apart from perhaps filing false accounts at Companies House if it's a limited company. The fraudulent business has no day-to-day trading activity.
3	Multiple loans to one entity (multi bank)	As a result of COVID, one entity has applied for government-backed loan(s) with multiple banks, but for the same underlying entity and staff members. The effect is that the company receives support multiple times, contrary to the scheme rules. The bank may not be able to claim on the government guarantee for any default.
4	Small Business Administration loans post charge offs	Obtaining COVID related loans through fraudulent applications (fake names, fake companies, other fake documentation)
5	Mis-use of government stimulus	Applying government COVID related loan funds to repay existing corporate loans or to repay a personal debt, or buy an asset (e.g. a car). In short, the funds were mis-appropriated and not used to support the company staff, or the basic subsistence required to support the organisation
6	Shell Companies – wheel & spoke	Multiple shell companies linked to a central address. All of the companies have been created by a central incorporating entity; the businesses are similar in nature (similar incorporation dates, similar director ages, closely located, high risk industry codes).

Detect bust-out fraud (1) – segment customers



Utilise network features to detect bust-out fraud

Segment the customer base to identify 'good' customer profiles and **flag 'bad' applicant or customer attributes**

1. Entity Resolution and Network Generation connects Company A's director to a previous default

2. Company B has an unusual risk flag – time between incorporation date and account opening is significantly shorter than 'good' customers

3. Network Analysis and Entity Resolution links the two companies to Director B, who was previously exited due to identity manipulation concerns (changed date of birth and names).

4. Entity Resolution links Director D to a previously rejected loan

5. Network Analysis connects Company D and E to a common registered address

6. Identify customers who unusually request the maximum available number of borrowing facilities

Prior to adding transactions, we **highlight social links via registry data and score risks** - unusual vs 'good' customer profiles

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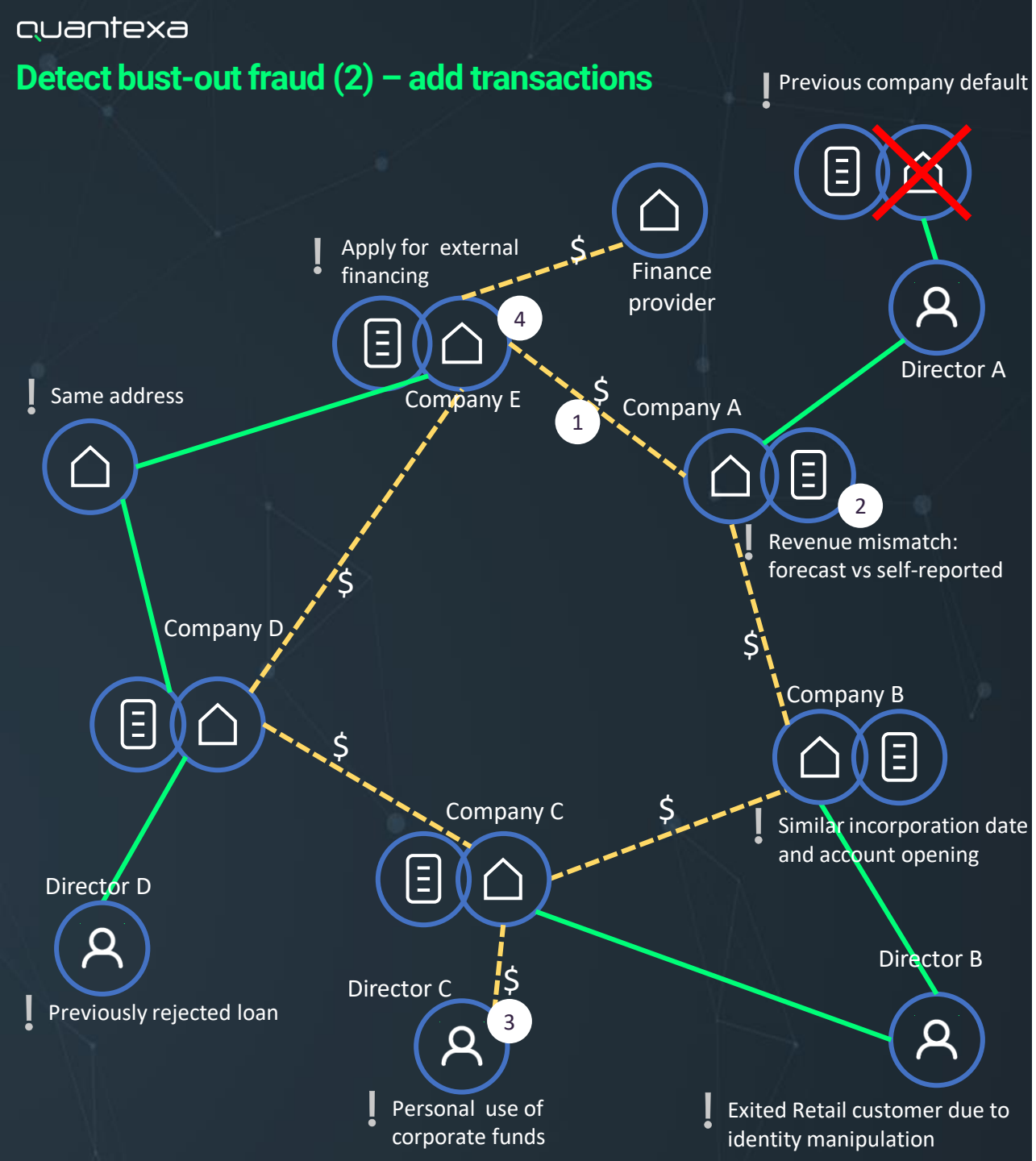
Detect bust-out fraud (2) – add transactions



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Utilise network features to detect bust-out fraud

Add transaction data to link entities and individuals to illuminate the entire network

1. Network Analysis and Entity Resolution links the originator/beneficiary details from receipts and payments to detect transaction cycles – circulating payments.

2. Perform transaction analysis – compare receipts to company-provided financials to assess revenue confidence

3. Monitor personal director account transactions with corporate transactions to detect mis-use of funds post-financing

4. Assess transaction flows outside the network to detect parallel applications for finance from alternate providers

All **scoring features (attributes) can be aggregated** by relationship or across networks for reporting in real-time or batch

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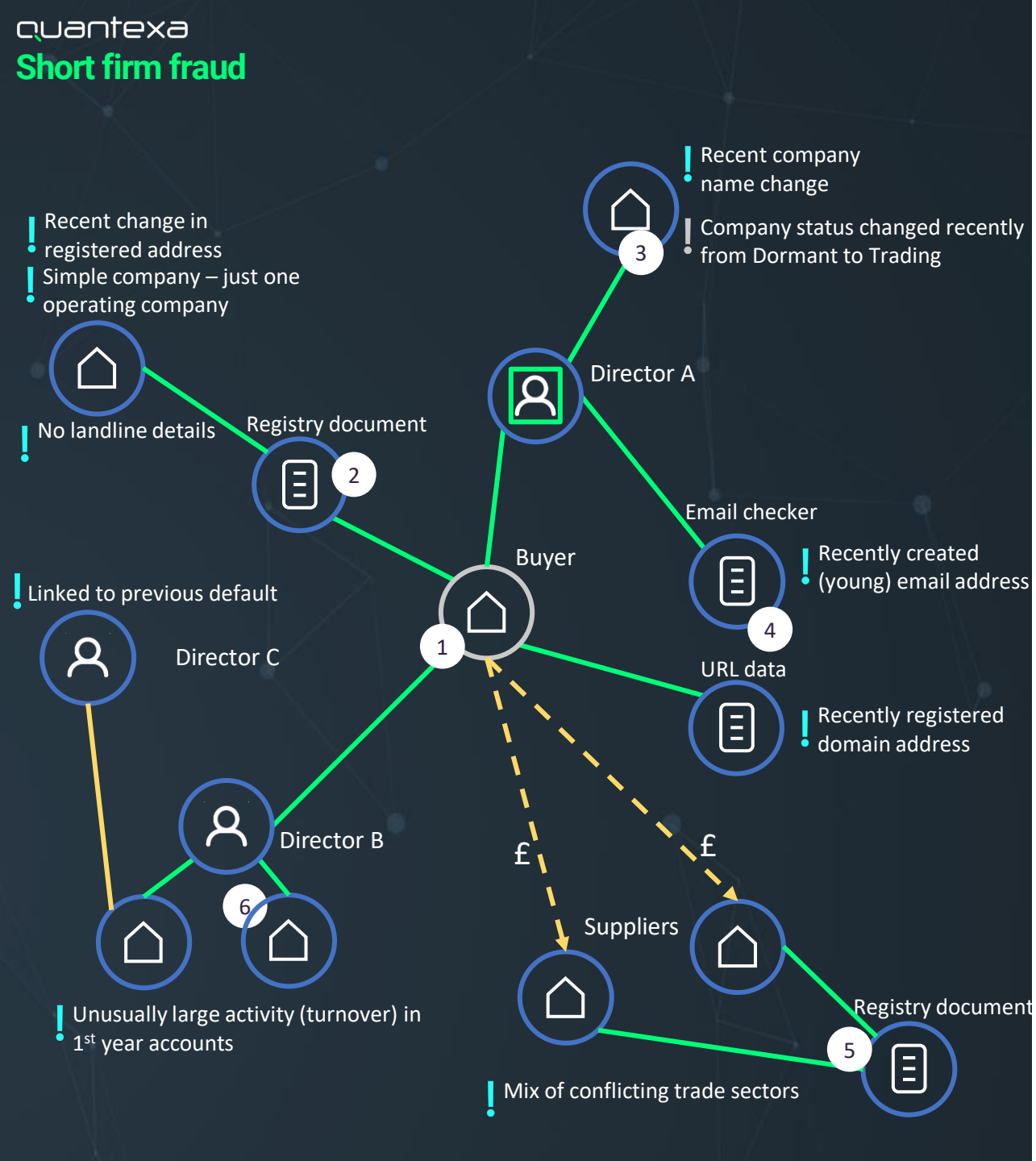
Short firm fraud



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Incorporate network features to detect Buyer fraud

Improve your models by including socially connected risks and mitigants within the buyers' ecosystem

1. Network Analysis and Entity Resolution establish that the Buyer has 2 Directors and has links to 2 Suppliers via invoices

2. Entity Resolution links the external registry document to the Buyer – highlighting some risks

3. Entity Resolution and Network Analysis links Director A to other businesses which have recently begun trading

4. Director A's company email and the Buyer's web domain are reviewed highlighting they have been recently created

5. Linking the Suppliers to the registry document highlights the unusual purchases (computers and agricultural fertilizers)

6. Director B has 2 other directorships – both of which have large 1st year financial results. Director C is a shared director and is linked to a previous default.

Network features are tested and additive predictive inputs are included in the clients existing model by the client modelling team

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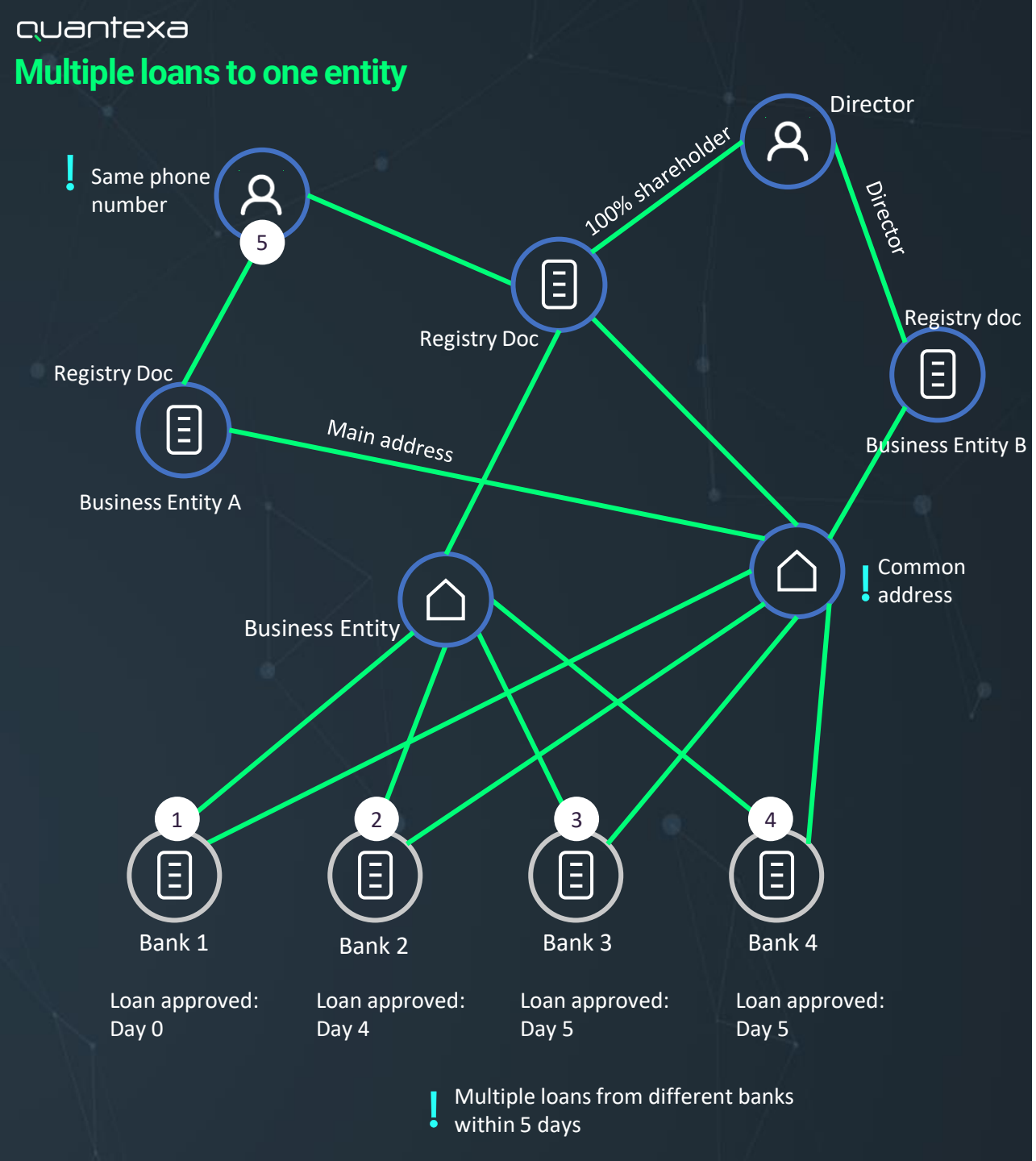
Multiple loans to one entity



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Detect lending fraud linked to government stimulus schemes

Enable remediation of COVID-lending decisions to detect fraudulent applications

1. Bank 1 approves an SBA PPP loan to the Business Entity. This is to retain 10 jobs and is in the range of $150k to $350k.

2. 4 days later, Bank 2 approves an identical loan to the same Business Entity

3. 1 day later, Bank 3 approves an identical loan to the same Business Entity

4. On the same day, Day 5, Bank 4 approves an identical loan. The application doesn't claim to retain any jobs.

5. Network Analysis and Entity Resolution establish that the Business Entity is linked to a common address, with links to the same phone number and registry documents.

In this use case, Quantexa has resolved the entities using historic SBA loan data and recent PPP (Cares Act) US data against external data registries.

We can **apply a similar approach to banks' Covid-19 lending data** to detect unusual connections and flag potential lending fraud.

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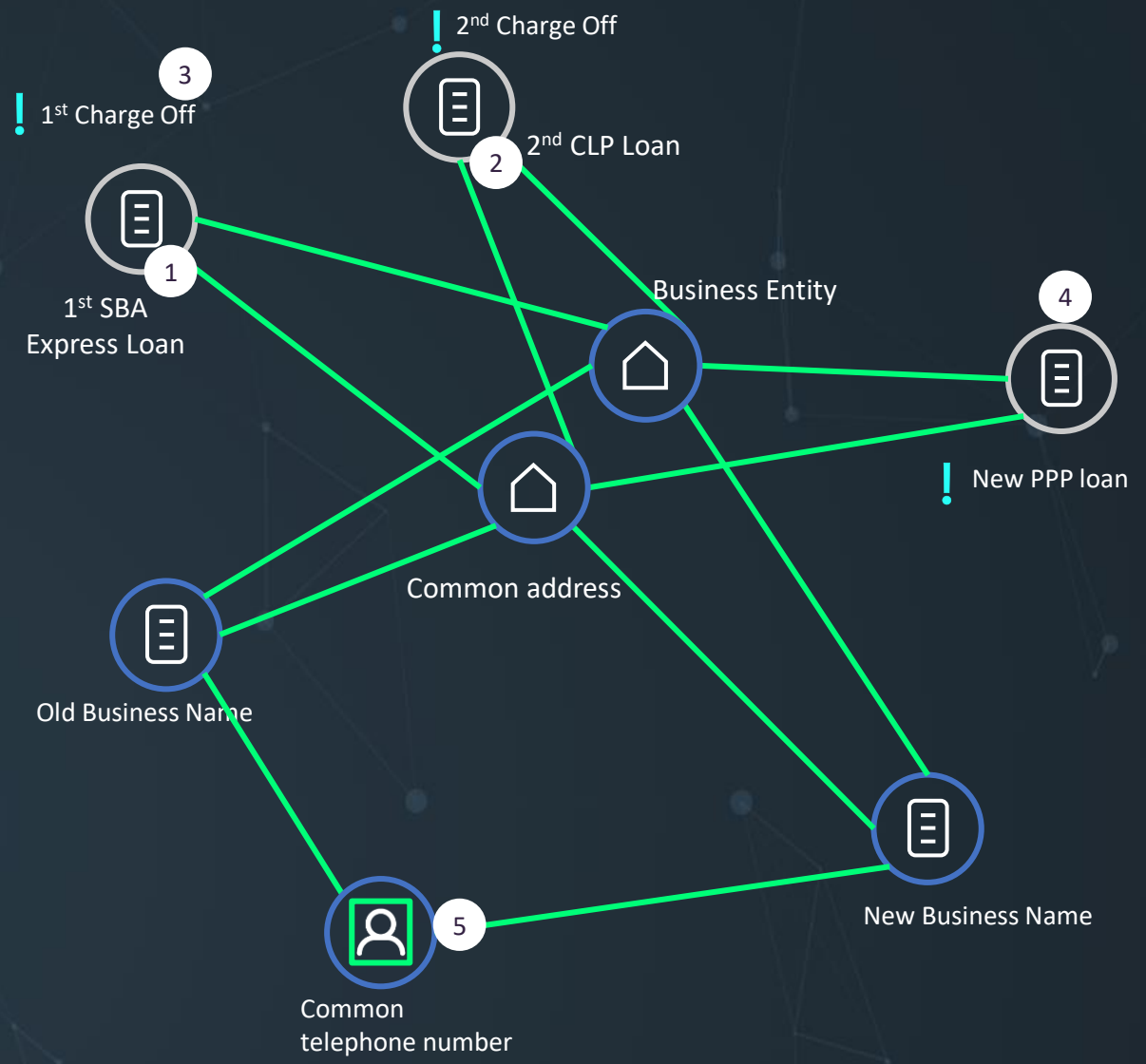
SBA loans post charge offs



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Incorporate network features in your portfolio monitoring

Add event-based triggers by including connected risks and mitigants within the borrowers' ecosystem

1. Bank A issues a $250k SBA Express loan in Mar-10, half of which is government guaranteed

2. The next month, Bank A issues an additional $1.4m loan, which 90% is government guaranteed

3. 8 years later both loans are charged off. Total impairment to the bank is c. $800k

4. 18 months later, a different bank (Bank B) approves a new SBA PP loan to the business, which now has a new name.

5. Entity Resolution and Network generation identifies that this business is connected back to the previous defaults via a common phone number, address and business entity.

Additional SBA lending is disallowed where there have been previous charge-offs.

Quantexa can apply a similar approach to banks' Covid-19 lending data to detect unusual connections to previous defaults (e.g. Phoenix companies) and flag higher risks of lending fraud.

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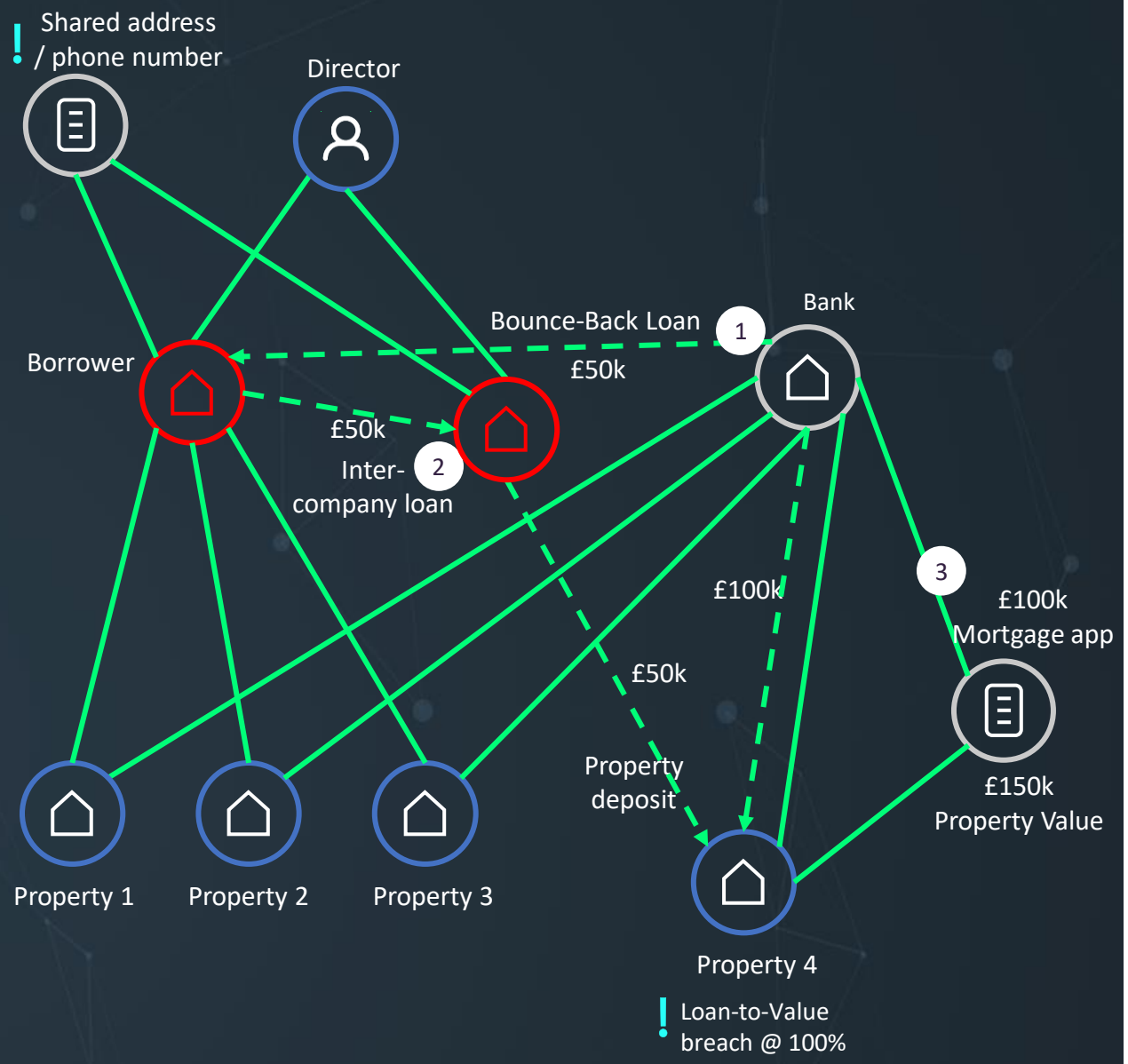
Mis-use of government stimulus



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Monitor customer behaviour post Covid-19 lending support

Identify unusual customer transactions and potential breaches of internal credit appetite policies

The borrower is a limited company comprising 3 buy-to-let properties. The bank provides mortgages on all 3 with legal charges.

1. As part of the UK government stimulus program, the borrower requests a Bounce Back Loan from their bank

2. This £50k cash deposit is transferred internally to another business, connected by the Director and shared address / phone.

3. The other business uses the £50k as a deposit for a new property purchase worth £150k

4. The bank approves a £100k mortgage on the property, assuming the LTV is 66%.

However the true exposure is 100% LTV given the bank has also funded the deposit. This is a risk to bank and breaches internal credit appetite policies.

Quantexa can **apply network analytics to detect** unusual behaviour and identify evidence of lending fraud in government lending schemes.

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Shell Companies – wheel & spoke

Incorporate network features to detect shell companies

Improve your fraud and risk models by identifying socially connected groups within prospects and customers

1. This sanitised network comes from a real-world example. There are multiple shell companies linked to a common address

2. The central address is the registered address of a UK-based business specialising in incorporating limited companies.

3. Quantexa applies fraud typologies to identify risks using socially linked entities, for example:

3a. Commonalities of director profiles – similar geographies and demographics. Most directors are neighbours or live within a few miles, all are of a similar age and each director has between 3 and 11 directorships.

3b. The linked businesses are all high-risk industry sectors (internet payment processing) and were created over a similar time-scale.

Quantexa can generate networks and run scoring against groups in batch to flag the highest alerts to deliver via workflow to analysts or automated decisioning processes.

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