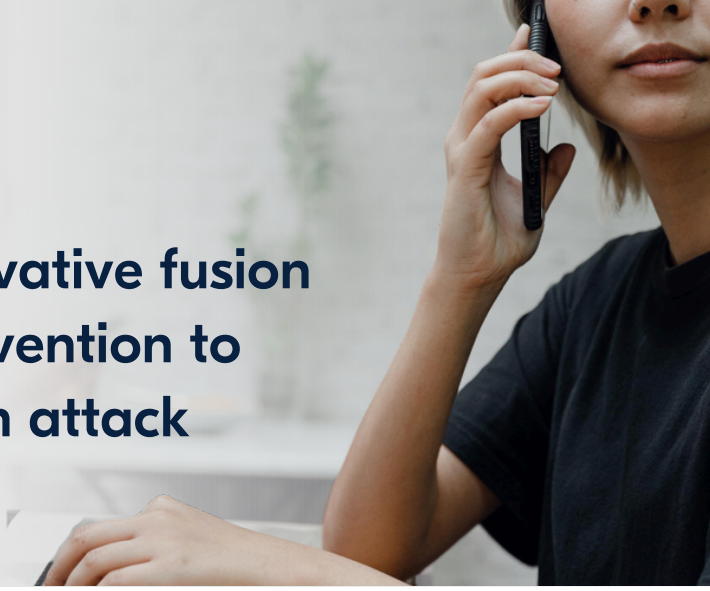
Cleafy

European bank leverages innovative fusion of cybersecurity and fraud prevention to neutralise a multi-layered scam attack



At a glance

The Bank

European 100% digital bank, headquartered in Milan, Italy.

>1.6 million
customers

The challenge

A multi-layered scam attack comprising of:

- Bot attacks aimed at sifting through **2.1 million** credentials;
- Advanced scam campaign targeting **1,500 users;**
- SMS and spoofed calls to attempt **account takeovers** (ATO);
- Deployment of **Copybara malware** to commit device takeover (DTO) through malicious SMS.

The Cleafy advantage

Seamless fusion of fraud management and advanced cybersecurity

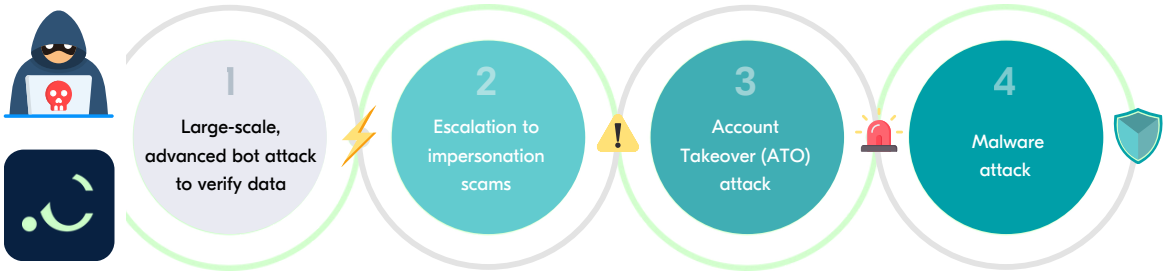
- Discovery functionality
- Session and event investigation
- Transaction Risk Analysis
- Device on Call, User Behavioral Analysis, and Transaction Risk Analysis
- Mobile malware detection
- ASK (Global threat intelligence layer)

Impactful results

100% success rate in stopping fraudulent transaction attempts

€7.5 million potential losses prevented

In early 2023, a prominent Bank experienced a low volume of scam attempts, primarily limited to occasional impersonation scams via phone calls. However, October 2023 marked the onset of a **sophisticated**, **multi-layered fraudulent campaign** that challenged the bank's cybersecurity defenses.



Thanks to Cleafy's advanced capabilities, the bank successfully navigated this threat, safeguarding millions of euros and preserving customer trust.

First phase

Large-scale, advanced bot attack to verify data

Data has become the new currency for threat actors in sophisticated scam schemes.

In October 2023, the bank encountered an aggressive bot attack targeting an application vulnerability during the customer login process. **Fraudsters aimed to sift through 2.1 million credentials** - obtained from the dark web as part of a 'fraud-as-a-service' package - to identify genuine bank customers.

While the bot processed large datasets in mere seconds to match user credentials, once Cleafy stopped the bot attack, a smishing campaign began to keep validating credentials and maximise the number of identified users. Once fraudsters verified these credentials, they attempted to authenticate them on the genuine app from their devices to further validate the data, enabling their use in subsequent phases of the scheme.

Cleafy was pivotal in identifying and responding to this attack. One evening, the bank's anti-fraud team detected unusual activity on a specific URL through Cleafy's monitoring dashboard. Cleafy's real-time analysis accurately gauged the attack's scope, **revealing a bot attack originating from over 100,000 suspicious IP addresses**. Immediate action followed.

Despite the sophisticated bot evading detection by the bank's firewall, Cleafy enabled the anti-fraud team to swiftly alert the app and perimeter security teams about the vulnerability in the bank's app. This prompt action led to **the creation of a watchlist for users targeted by the bot attack**. Thanks to Cleafy's detection and response capabilities, no further credentials could be validated, limiting the fraudsters to validating only 1,500 of the 2.1 million stolen credentials.

Second phase

Escalation to impersonation scams

Following the first phase, the fraudsters turned their efforts to an **impersonation scam campaign targeting the 1,500 users** identified in the initial attack. Using spoofed calls, they mimicked the Bank's phone number to deceive customers into performing reversal transactions under the guise of addressing suspicious activities. The Bank received dozens of scam reports daily.

During this phase, the team leveraged data from the watchlist of targeted users' behavioural analysis. This comprehensive approach enabled the **implementation of rules to create awareness among targeted users and flag suspicious behaviour**. These measures successfully prevented hundreds of scam attempts before transactions were initiated, significantly limiting potential damage.

The Bank also addressed the app's vulnerability by incorporating Cleafy's on-call indicators and the aforementioned data, which helped stop further validation and scam attempts.

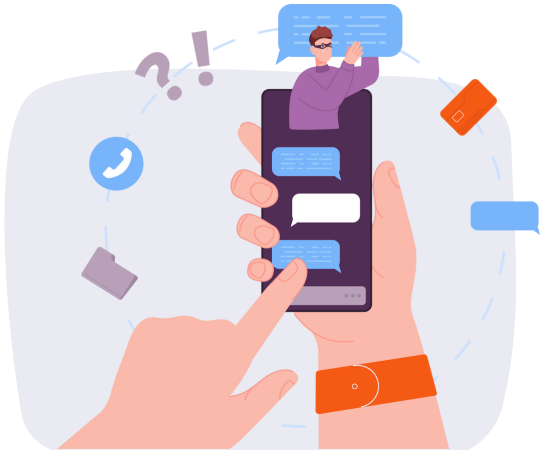
Although **50 customers reached the point of attempting a transaction** during a multi-layered scam attack, **these attempts were stopped due to real-time correlation of all indicators**, including transactional indicators such as instant payments involving large sums and descriptions containing phrases like "transaction reversal".

Third phase

Account Takeover (ATO) attack

After the Bank resolved the application vulnerability and the scam campaign was disrupted, **the attackers changed their tactics.** They started using SMS and spoofed calls to attempt account takeovers (ATO) with the remaining validated credentials.

However, **Cleafy quickly detected and stopped these attempts**. By combining new device enrolment data with information on users targeted by the bot attack and behavioural analysis, the Bank was able to detect and block ATO attempts, effectively preventing any fraudulent activity.



Fourth phase

Malware attack

The persistent attackers then resorted to **deploying Copybara malware** to commit device takeover (DTO), sending malicious links via SMS to exploit customer devices when clicked.

Cleafy's robust defense mechanisms, including mobile malware detection and proactive threat response, effectively blocked these attempts. **Cleafy immediately identified and neutralised infected devices** (of which it found 10), stopping this campaign in its tracks, safeguarding the Bank's customers.

Leveraging Cleafy's advanced approach to proactively prevent fraud

Cleafy's ensured that all these fraudulent attempts **were blocked with atomic precision**

Achieved a **100% success rate** in stopping fraudulent transaction attempts

Without intervention, the **potential fraud** could have reached **€7.5 million**

Throughout this multi-layered scheme, Cleafy's comprehensive feature set proved invaluable:

Discover functionality: Enabled the creation of monitoring dashboards for real-time application behavior analysis and threat identification.

Session and event investigation: Allowed detailed verification of activities during the bot attack.

Rules engine: Facilitated the automation of watchlists, detection, and response rules, ensuring swift action against identified threats.

Transaction Risk Analysis: Constructed rules to detect and block suspicious transactions effectively.

Device on Call, User Behavioral Analysis, and Transaction Risk Analysis: Blocked scam attempts with high accuracy.

Mobile malware detection: Proactively identified and countered malware threats, including new variants like Copybara.

ASK (Global threat intelligence layer): Provided timely updates on new malware variants, enabling swift response.

By effectively utilising Cleafy's advanced anti-fraud tools, the Bank not only mitigated a complex, multi-level fraud campaign but also **reinforced its security infrastructure against future threats,** all without disrupting services for their customers. This success story underscores the critical role Cleafy plays in empowering financial institutions to safeguard their assets and customers against evolving cyber threats.

Discover how Cleafy can protect your organisation from sophisticated scams. To learn more, or to schedule a demo visit cleafy.com/get-in-touch