ART CRIME DOES NOT PAY

Multiplexed social network analysis in cultural heritage trafficking forensics

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INCREASE IN CULTURAL HERITAGE CRIMES

- Online art market reached 67 billion USD in 2022 with almost 38 million art transactions worldwide.
- Online sales accounted for roughly 16% of the total markets.
- Cultural goods market attracts organised crime groups to fund their activities, partially because cultural goods are expensive and difficult to trace in an opaque market.
- Online market enables better opportunities for the criminals, e.g., in terms of faster transactions, anonymity, falsified seller information, and even bank accounts not connected to criminals.

CHALLENGES AND OBJECTIVES

CHALLENGE #1: Authorities cannot detect illegal sales activities, stop monetary transactions or seize the goods

CHALLENGE #2: Art crimes have an impact on national security as possible enablers of terrorist attacks, influencing or other forms of trafficking.

We present a methodology to even the odds of authorities detecting the illicit trafficking of cultural goods in online marketplaces through approaches based on social network analysis (SNA).

A TYPICAL CULTURAL HERITAGE TRAFFICKING SCENARIO

Looting groups close to heritage sites, often in developing countries.

Figures taking advantage of or at some level abetting the looters, e.g., corrupt police officers, local authorities, heritage professionals.

Transit professionals: shipping companies, border and customs agents, brokers.

Art market professionals: legitimate actors like auction houses, dealers, collectors and museum employees.

Facilitators, e.g., restorers, authentication laboratories (who certify the provenance of items), and academics.

DATA SOURCES

We use OSINT by harvesting data from online sources such as websites, social media and other repositories or databases, coupled with non-OSINT sources such as Call Data Records (CDRs), geospatial intelligence (GEOINT) and possibly others.

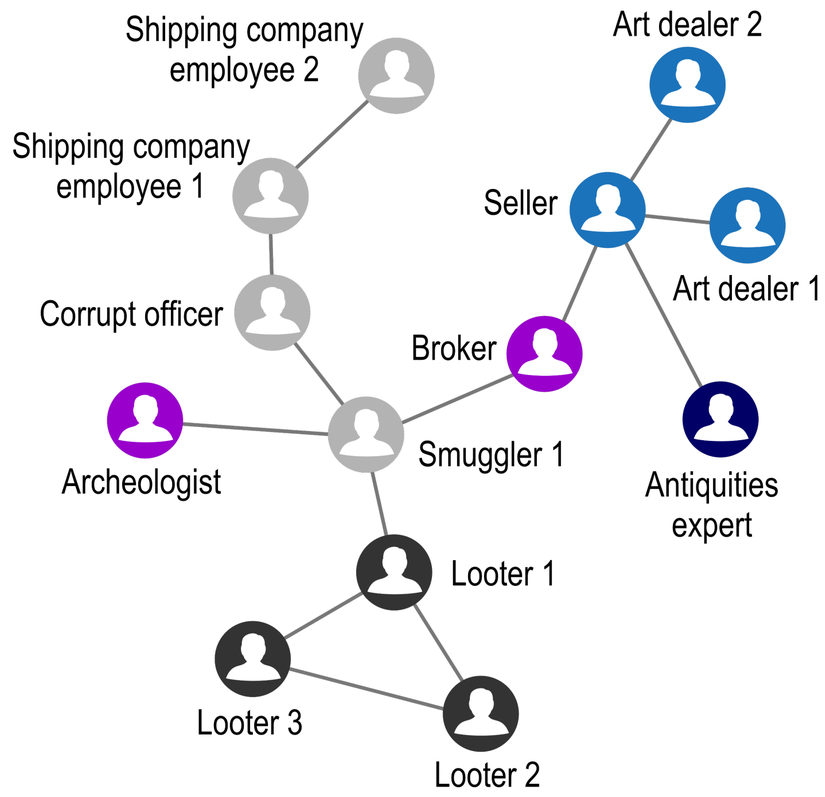
SOCIAL NETWORK GRAPH (SNG)

Building the multiplexed SNG

- Nodes represent individuals (criminals, smugglers, art dealers, etc.) and their features in the graphs.
- Blended links between individuals represent the strength of their relationship (e.g. email messages exchanged, transactions made)
- Correlation of source information is done using AI-based techniques, manual input from expert operators or a combination of the two.

SNG analysis

- The result is a timely updated, content-rich SNG
- Well-established measures and algorithms can be employed to extract meaningful intelligence and investigative leads to efficiently target specific nodes.
- The most connected nodes could be, for instance, the leader of one organisation or part of it. In our scenario, for instance, the local leader of the looting group.



CONCLUSION

- The use of the RITHMS methodology will enable law enforcement agencies (LEAs) to use their limited resources in the most efficient way and disrupt the criminal networks responsible for cultural heritage crimes.
- The objective is to use OSINT techniques for harvesting data from online sources such as websites, social media, and other online repositories and using them to create a blended social network graph (SNG).
- Additional sources, such as call data records (CDR) and geospatial intelligence, can be used to enrich the graph, as well as data on cryptocurrency and other financial transactions.
- With the use of the RITHMS methodology, LEAs can enhance their investigations, discover criminal networks at a faster pace, and counter the illicit trafficking of cultural heritage goods, thus ensuring that art crime does not pay.

RITHMS
Research, Intelligence and Technology for Heritage and Market Security

Funded by the European Union

This project has received funding from the European Union's Horizon research and innovation program under grant agreement N 101073932