Application of Network Analysis & ETI Analytical Model for Criminal Investigations

Loughnane Associates LLC
Value Touches Everything

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The Enterprise Theory of Investigation (ETI)

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The Enterprise Theory of Investigation (ETI).

- The ETI is an investigative model used to collect, analyze and prosecute the aggregated crimes carried out by a criminal organization.

> *"Unlike traditional investigative theory, which relies on law enforcement's ability to react to a previously committed crime, the ETI encourages a proactive attack on the structure of the criminal enterprise."*
>
> – Richard A. McFeely, "Enterprise Theory of Investigation". 2001.

The Enterprise Theory of Investigation (ETI).

- Most crime is done for profit – **MOTIVE**
- Criminality mostly involves a collective effort – **ORGANIZATION**
- Criminal acts do not occur within a vacuum. They occur as connected, related events (persons supporting a general intent).
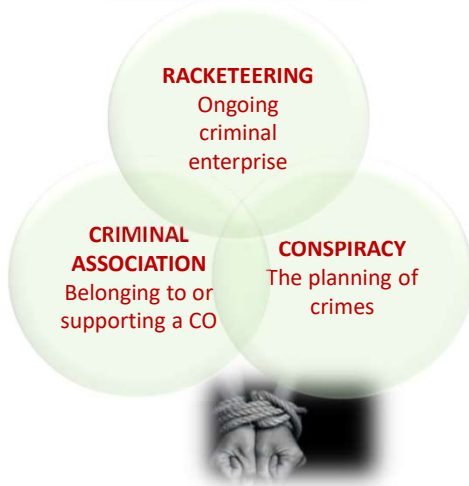
The Enterprise Theory of Investigation (ETI).

RACKETEERING
Ongoing criminal enterprise

CRIMINAL ASSOCIATION
Belonging to or supporting a CO

CONSPIRACY
The planning of crimes

Adding financial investigation to the drug aspect of DTO can reveal:

- Facilitators

- Fixers

- Business owners

- Politically exposed persons
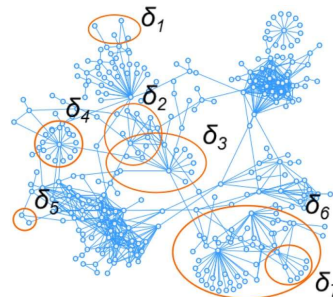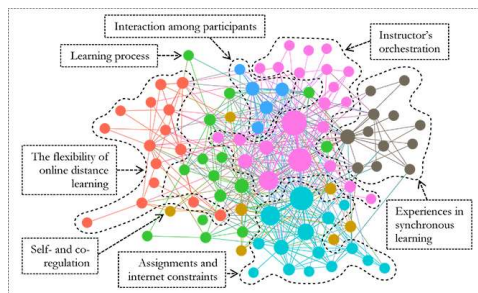
This opens the possibility of RICO charges.

The ETI is Simply a Network Approach

- Understanding organized crime as a business
- Identifying the underlying network and subnetworks that promote, support, or assist unlawful activity.
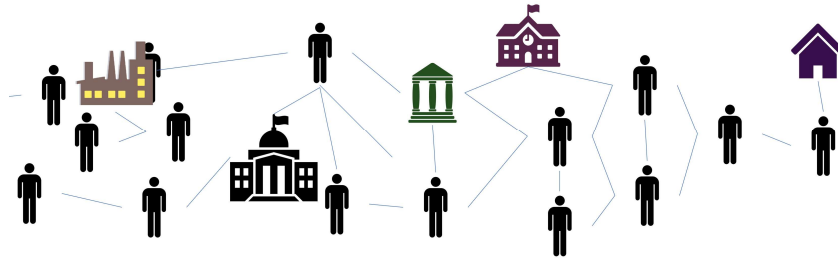
Defining Networks

- A network is an ongoing arrangement of relationships that connects people and entities.
- Each person, group of persons, entity, or group of entities is a **node** within the network.

Defining Networks

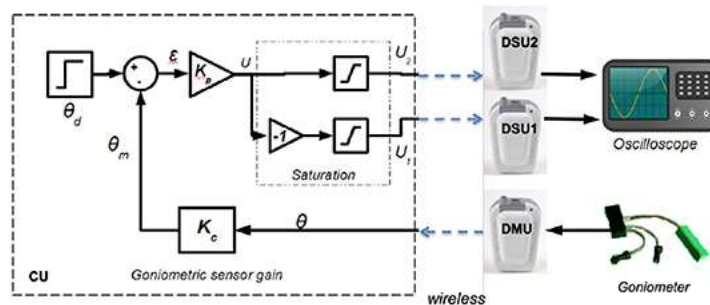- **Closed networks:** Interactions and connectivity take place only within members of a limited (bordered) network. This type of network exists mostly in the world of technology and science.

Defining Networks

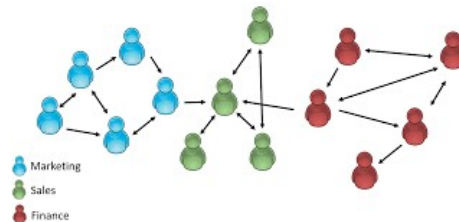- **Open networks:** Interactions and connectivity occur between two or more networks (organizations and exterior nodes).

- These networks must interact with others or critical nodes to operate and exist.

- Social organizations, individuals, and businesses cannot operate as a closed network. Social networks are rarely self-sufficient.
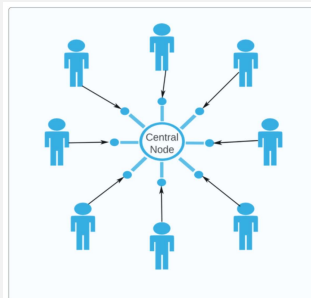

Marketing
Sales
Finance

Network Configurations

Centralized

Decentralized
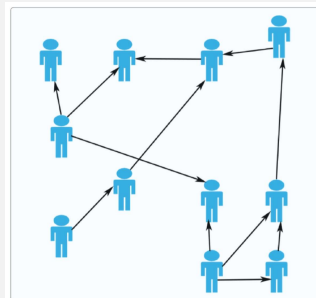
Distributed
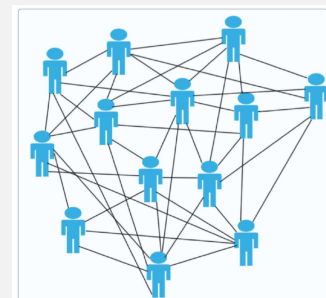
Historical Pause

The Mafia and the Kefauver Hearings

- Known formally as the United States Senate Special Committee to Investigate Crime in Interstate Commerce, AKA the Mafia Hearings. Took place in the 1950s.
- Focused on the organized nature of Italian mafia groups and the way they operated, like well-organized businesses.
  - From there… "enterprise theory".

We integrate history, policy, and regulation, and factor it into our conscious investigative construct

Enterprise Theory & The Racketeer Influence and Corrupt Organization Act (RICO)

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RICO Act

- A Federal law, part of a new crime control strategy, provided law enforcement necessary legal tools to combat organized crime.

- In essence, any person who willfully profits and collaborates with a criminal organization is susceptible to becoming a defendant in a criminal or civil court.

We integrate history, policy, and regulation, and factor it into our conscious investigative construct

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A Systemic View of a Criminal Organization

- Does not focus on isolated criminal acts.
- Focuses on identifying the criminal organization as an enterprise that conspires to generate revenue by exploiting prohibited/controlled markets.
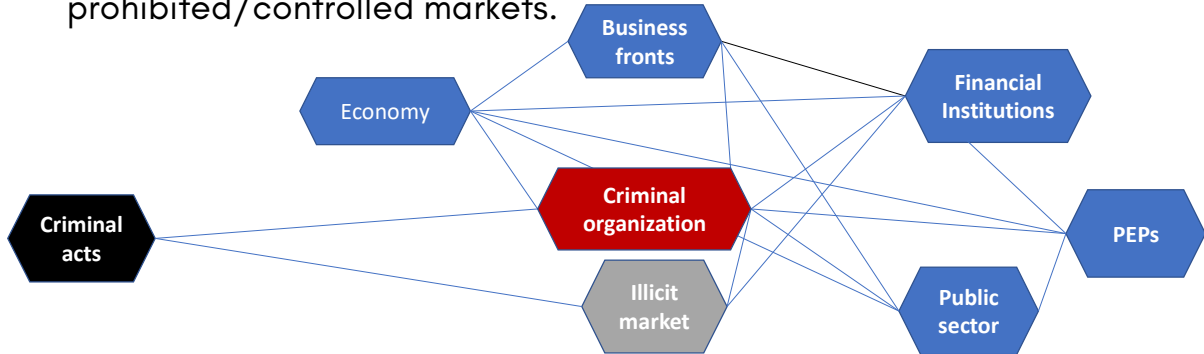
Systems Analysis for Enterprise Theory Investigation (ETI) Model

Let's Review a Case

OPERATION TROJAN SHIELD: COUNTRIES WITH ACTIVE DEVICES
INTERNATIONAL OVERVIEW

LEGEND
Countries with Active Devices
as of May 2021
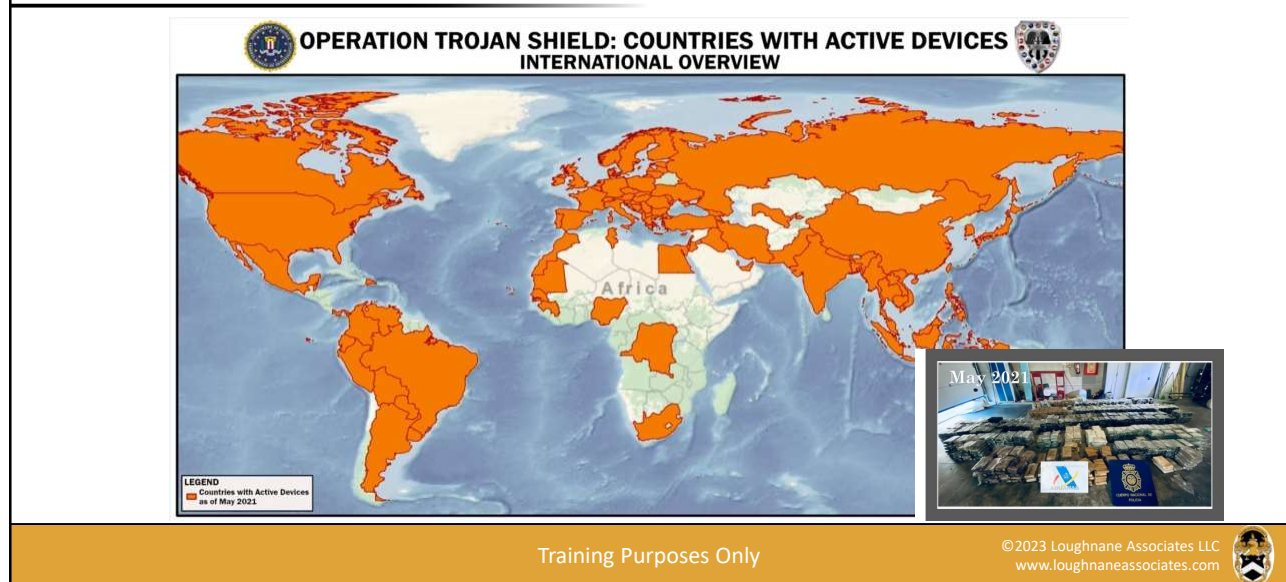
Systems-network Analysis & ETI

• Analytical sequence for data processing.

1. Collect data
2. Micro-analysis
3. **Identify nodes** and all attributes
   • Descriptive (datasets)
   • Associations
   • Correlations (dependence–independence)

Systems-network Analysis & ETI

Informants
Undercover
Physical evidence
Surveillance
Interrogation & interviews
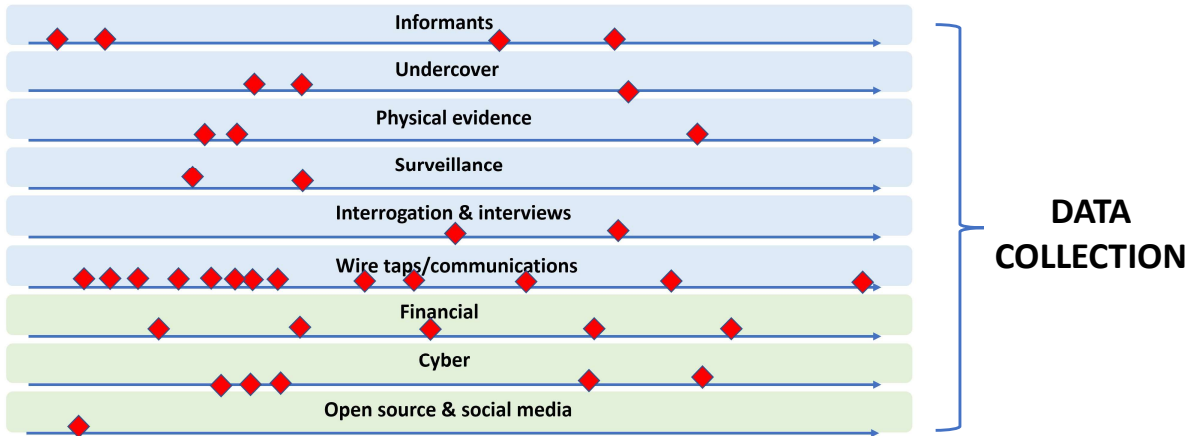Wire taps/communications
Financial
Cyber
Open source & social media

DATA COLLECTION

Systems-network Analysis & ETI

Informants
Undercover
Physical evidence
Surveillance
Interrogation & interviews
Wire taps/communications
Financial
Cyber
Open source & social media

Find correlations & links

INFORMATION
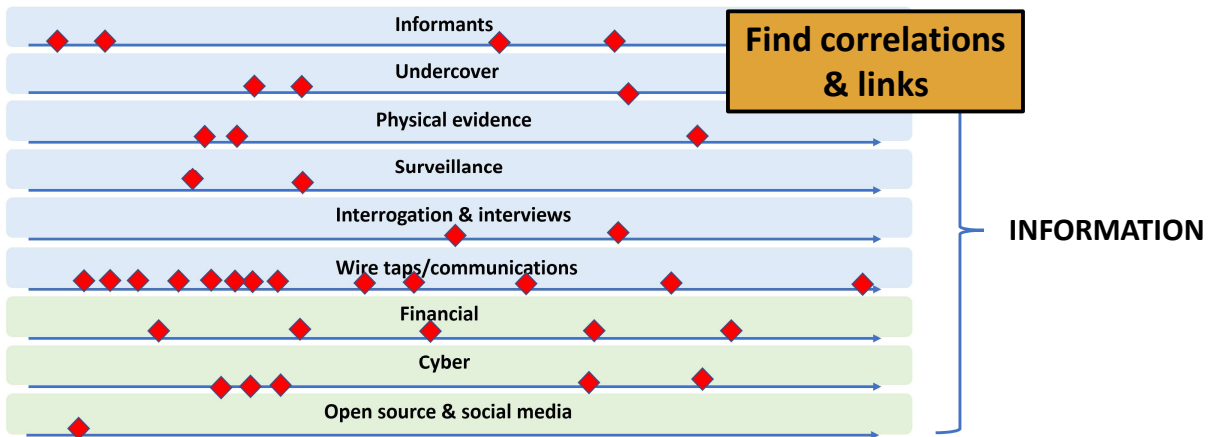
Priority of Work – Tier One

First Tier

Identify:
1. Nodes → persons
2. Links between nodes → person-to-person
3. Organization border → internal persons
4. External nodes → facilitators, gatekeepers, fixers
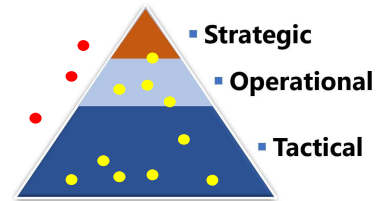5. Echelon level and role → status and responsibilities

- Strategic
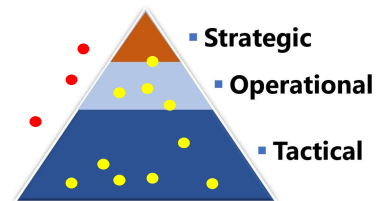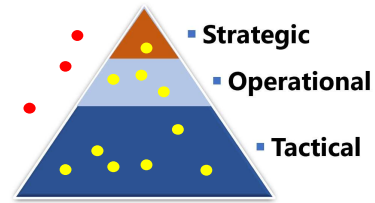- Operational
- Tactical

Priority of Work – Tier Two

Second Tier

Identify:
1. Geography per node.
2. Frequencies, directions, and methods of communication.
3. Frequencies, flows, amounts, and types of financial transactions.
4. Known sources of income/lifestyle.
5. Ownership or control of assets.
6. Evidence

- Strategic
- Operational
- Tactical

Priority of Work – Tier Three

Third Tier

Identify:
1. Centers of gravity (COG).
2. Cells
3. Vital links.
4. Decisive points.
5. External vital links.

- Strategic
- Operational
- Tactical

Data Parsing

Let's start processing data following a logic data parsing technique...

PERSON-CENTRIC DATA PARSING GUIDE									
	Person (node)	Echelon	Relationship with organization	Role	Associations	Geography	Communications	Financial transactions	Assets	Evidence
Data sets	Unique identifiers	Strategic, opeational, tactical	Insider, outsider	Operations, enforcement, financeer, gatekeeper, hitman, collaborator, etc.	Links between nodes	Places of operation or location	Type, frequency and direction	Type of expected transactions	Ownership, control	Collected evidence
Type of logical relationship	1 to 1	1 to 1 Boolean	1 to 1 Boolean	1 to many	Many to many	Fuzzy logic	Many to many	Many to many	Many to many	Many to many

Supporting Analytics Factors of Logic

Types of Relationships between Data

- Type of relationships between data types.
- One-to-one (1–1) → one record can only be associated with one other record.
  - E.g., each U.S. citizen has one SSN.
  - This statement is true but not real. Why?
- One-to-many → one record can be associated with two or more records.
  - E.g., one person can own two or more vehicles.

- Many-to-many → many records can have many other records.
  - E.g., many teachers can teach many courses.

Relationship types

- Aspects to consider when identifying node associations in a network.
- The logic behind the expectation. "Each U.S. citizen has a unique SSN" is the **logical statement**.
- In empirical reality, this is **not necessarily the case**.
  - A person can have one or more SSNs because of error or deception.

The Logic of Venn Diagrams

- A visual description that describes logical relationships between datasets.

A
Mutually exclusive

B
Intersection

The Logic of Venn Diagrams

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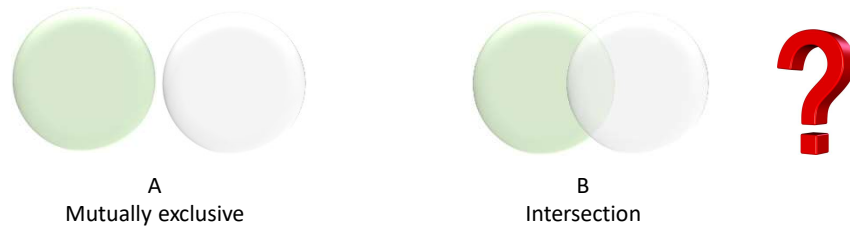
A
Mutually exclusive
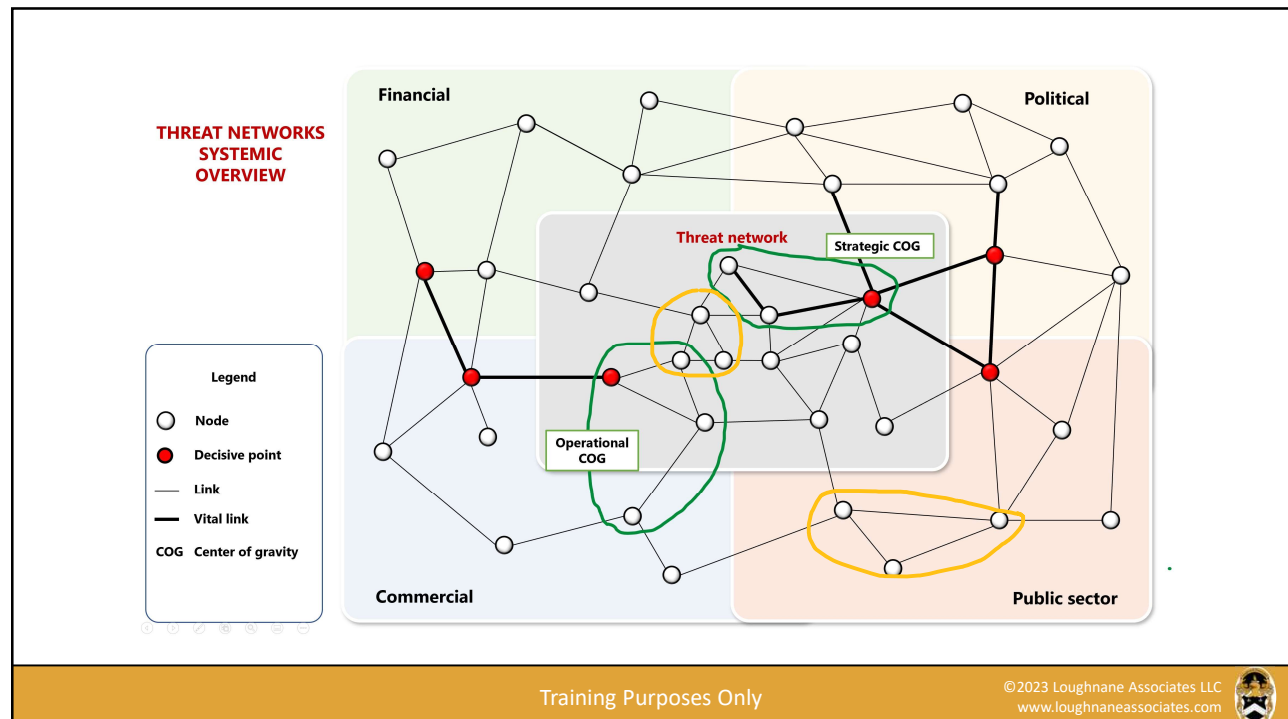
B
Intersection

Why is this ethereal, super-abstract thought relevant for the seasoned thinker?

THREAT NETWORKS SYSTEMIC OVERVIEW

Financial

Political

Threat network

Strategic COG

Operational COG

Legend

○ Node

● Decisive point

— Link

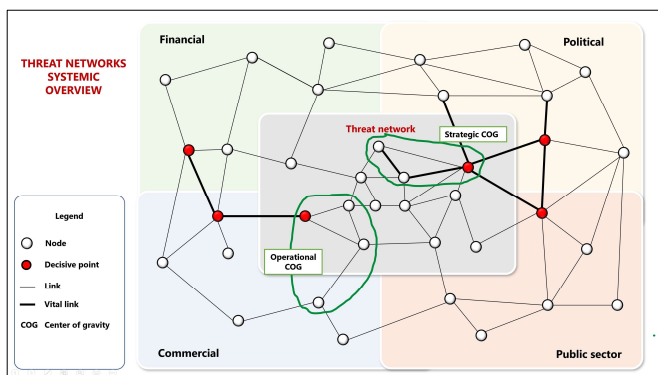— Vital link

COG Center of gravity

Commercial

Public sector
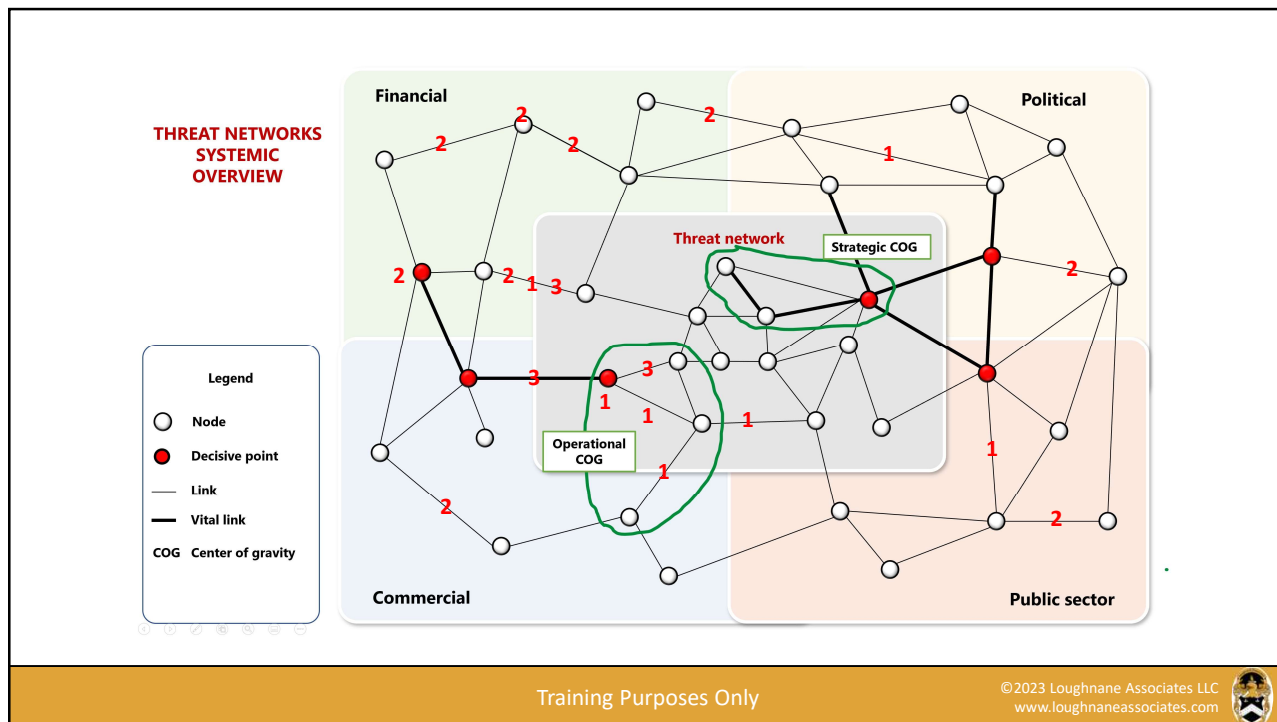
Mapping Out Relationship – Beyond the Criminal Organizations

How are you going to determine:

- Who is who, their roles, and what place within the hierarchy?
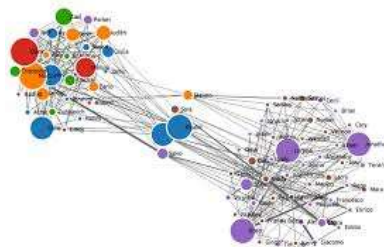- Where are the centers of gravity, and what defines them?

Systems Analysis and ETI

- Using tiers 1, 2, and 3, you can focus, plan, and contribute to managing and progressing the case.

Aggregating Data

- From the data, you must use analytical techniques (micro-analysis), aggregate the data, analyze, make your inferences, and summarize the findings.

- Your work should reveal a **network** (the organization).

  - Source of wealth (illicit market)
  - Hierarchy and COG
  - Modus operandi
  - Geography
  - External enablers (facilitators/gatekeepers)
  - Decisive points

Answering Questions

- Who is central to the investigation?
- Who is or are the persons of interest?
- Which are the entities of interest?
- How many groups and subgroups exist within the network, and what are their interactions?
- How are the legal, logistics, communications, and financial operators or facilitators?
- What are the roles of individual players?
- Which persons are peripheral players and why?

Questions?

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