INVESTIGATIVE CHALLENGES OF CRYPTO ASSETS

A Comprehensive Overview of Legal, Technical, and Practical Barriers

Presented by :- India - Namrata AC Singh

Date of Presentation :- 18/11/2024

INTRODUCTION TO CRYPTO ASSETS

- Digital or virtual assets that are issued or transferred using blockchain technology
- Types of Crypto Assets:
  - Cryptocurrencies (e.g., Bitcoin, Ethereum)
  - Non-fungible tokens (NFTs)
  - Stablecoins – USDT
  - Central Bank Digital Currencies (CBDCs) – JAM-DEX
- - Rising Importance: Increasing adoption by individuals, businesses, and institutions.

INVESTIGATIVE CHALLENGES IN CRYPTO ASSETS

- Anonymity:- Pseudonymous nature of crypto transactions.
- Decentralization: Lack of central authority for traceability.
- Cross-border Nature: Transactions can cross national borders without jurisdictional limitations.
- Complexity of Technology: Technical knowledge required to understand blockchain and encryption.

CHALLENGE 1 - ANONYMITY & PSEUDONYMITY

- Crypto transactions are pseudonymous: Identifiers (wallet addresses) don't directly link to real-world identities.
- Tools Used for Anonymity: Privacy coins (e.g., Monero, Zcash), mixing services, and tumblers.
- Difficulty in Attribution: Investigators face challenges linking illicit activity to individuals.
- Self-Custody: Individuals holding their own crypto in wallets may not keep logs or records.
- KYC/AML Compliance: Challenges in ensuring compliance with Know Your Customer (KYC) and Anti-Money Laundering (AML) regulations.

CHALLENGE 2 - DECENTRALIZATION AND LACK OF CONTROL

- No Central Authority: Unlike traditional financial systems, cryptocurrencies operate on decentralized networks.
- Blockchain Immutability: Transactions are permanent but not easily alterable, which hinders correction of errors.
- Difficulty in Seizing Assets: No central entity to freeze or seize assets like in a traditional bank account.
- No Centralized Records: Unlike traditional financial institutions, crypto exchanges or wallets don't always retain comprehensive data.

CHALLENGE 3 - JURISDICTIONAL & CROSS-BORDER ISSUES

- Global Nature of Cryptocurrencies: Transactions can occur across borders without the need for intermediaries.
- Multiple Legal Systems: Different countries have varying regulatory frameworks, from full bans to integration into financial systems.
- Enforcement Problems: Difficulty in enforcing regulations or prosecuting across multiple jurisdictions.
- Privacy and Data Protection Laws: Regulations like GDPR in Europe limit the retention of user data, complicating investigations.
- Regulatory Ambiguities**: Uncertainty in classification (e.g., as commodities, securities, or currencies).

CHALLENGE 4 - TECHNICAL COMPLEXITY

- Blockchain and Smart Contracts: Understanding and analyzing blockchain data, including smart contracts.
- Public vs. Private Blockchains: Differences in data access (public blockchains are more traceable).
- Crypto Forensics: The use of specialized tools to trace transactions, but the process requires expertise.
- The use of blockchain analysis firms like Chainalysis, Elliptic, and CipherTrace.
- Prone to hacking

SOLUTIONS?

- **Blockchain Analysis** tools like Chainanalysis, Elliptic etc**.**
- **Education and awareness –** especially of law enforcement officers
- **Monitoring Funds Through Multiple Wallets**: Using blockchain explorers and forensic tools to track stolen funds through multiple wallets and exchanges.
- **Exchange Cooperation:** Centralized exchanges (CEXs) are often crucial in cryptocurrency investigations
- Investigators can ask exchanges to assist by sharing KYC data or freezing suspicious accounts
- **Reporting and Blacklists:** Many exchanges maintain blacklists of suspicious addresses and report criminal activities to relevant authorities.

QUESTIONS?