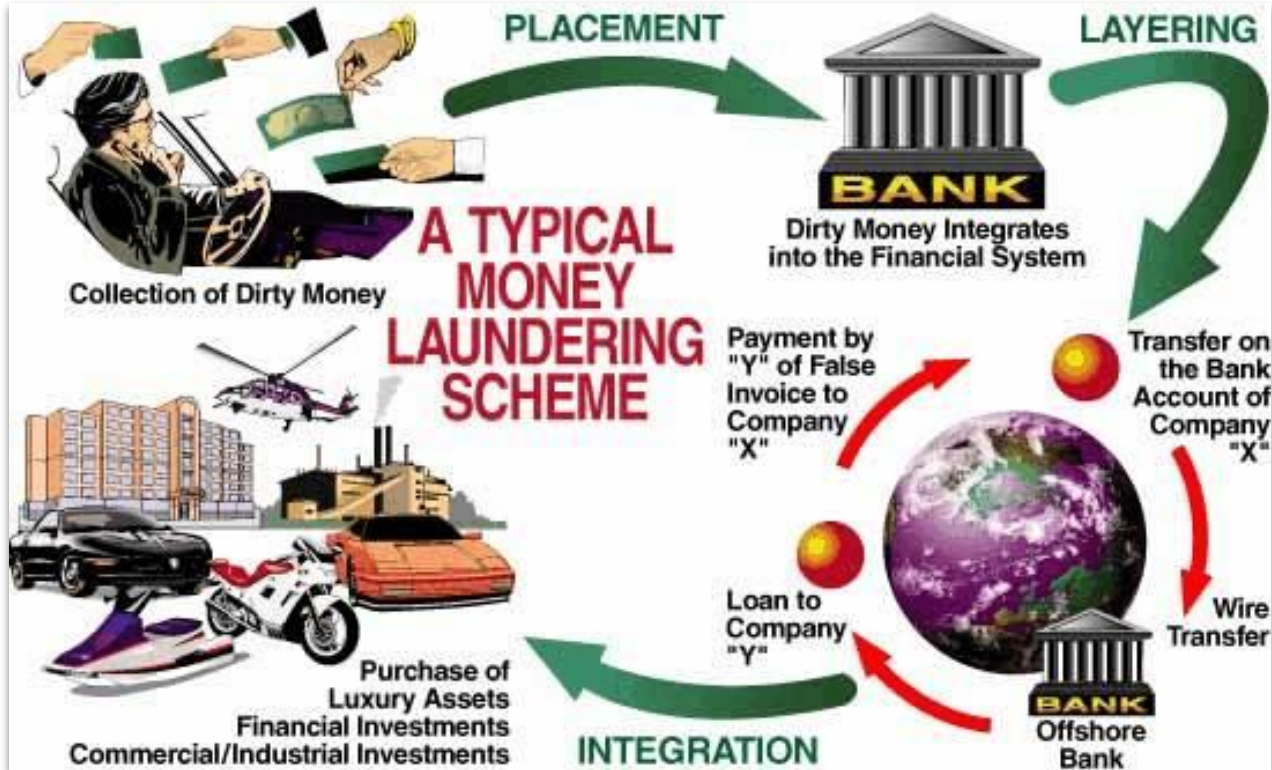


Blockchain Analytics for Anti Money Laundering

Automating the process of
detection of Money Laundering
on Blockchain



Money Laundering



Business & Finance

Bitcoin Adversary, ABN Amro Bank NV Involved in Money Laundering Scandal



Fatir Malik • September 27, 2019

2 minutes read

Australian man jailed for a year over Bitcoin money laundering scheme

By Andrew Fenton - September 4, 2019

24742

Blockchain Money Laundering Scams

San Diego Dark Web Vendors Plead Guilty to Cryptocurrency Money Laundering Conspiracy

The San Diego business managers exchanged Bitcoin for cash on the Dark Web.

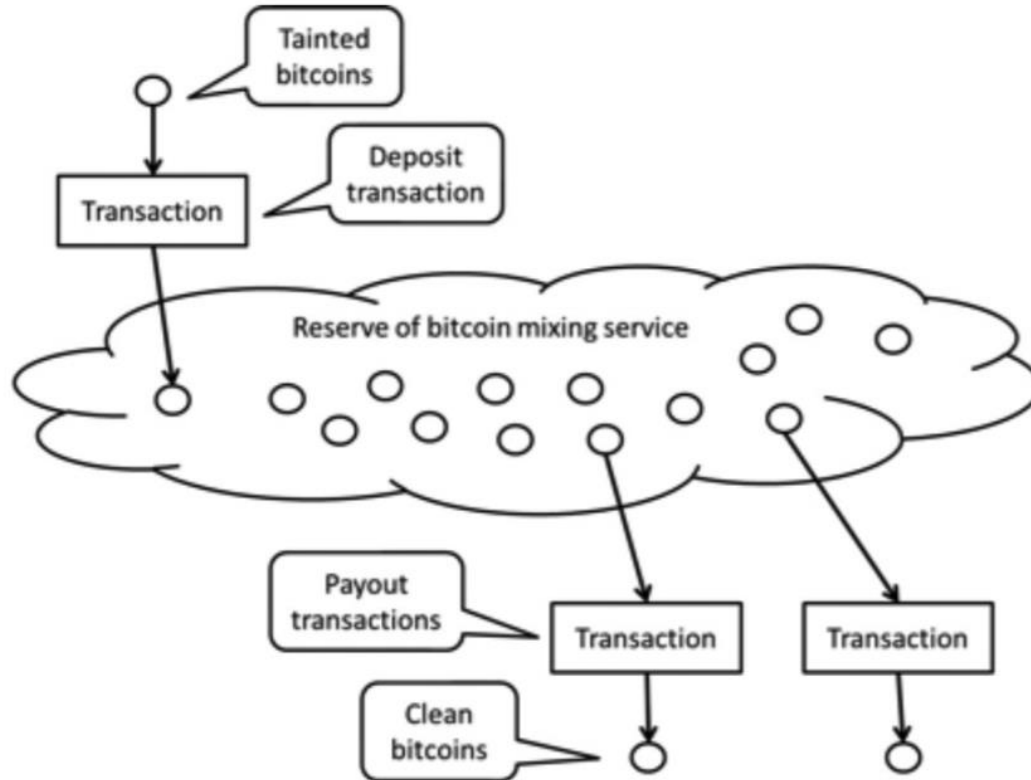
By Lexie Michel

Published Sep 30, 2019 at 7:08 PM | Updated at 11:35 PM PDT on Sep 30, 2019

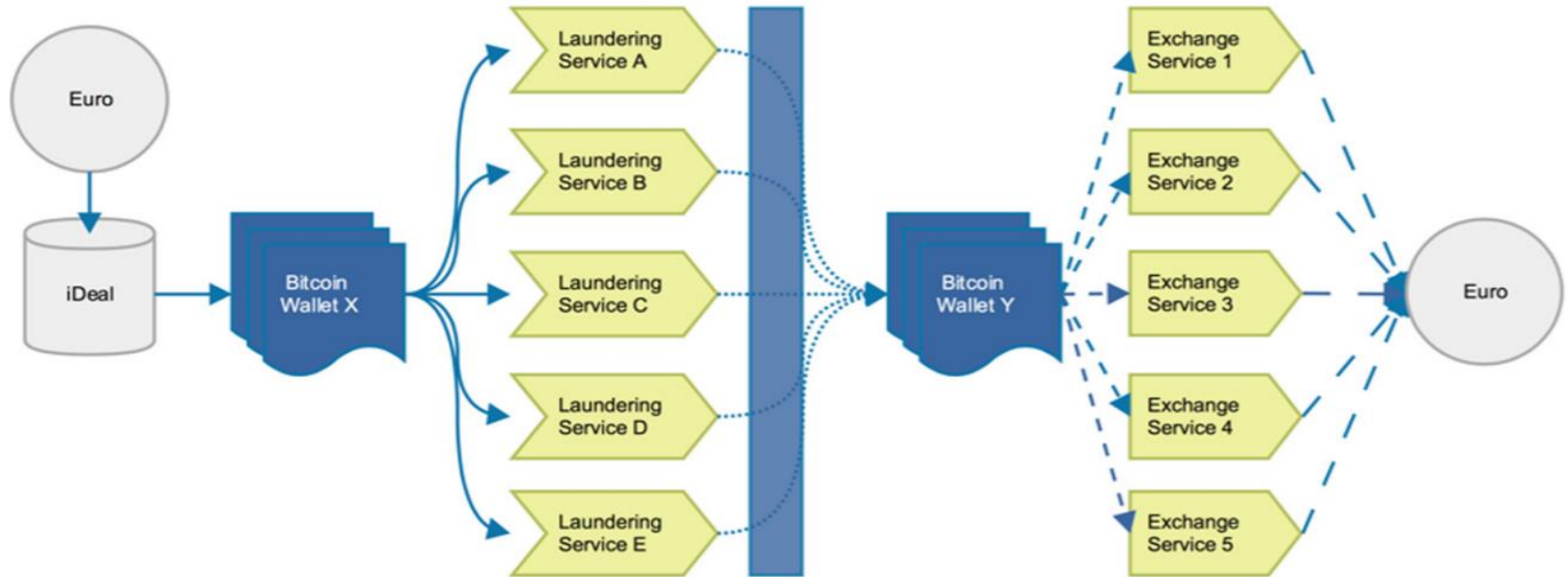
ED begins crypto crackdown, books businessman over Rs 2000 cr bitcoin Ponzi scheme

The victims of the accused conman hailed primarily from Mumbai, Pune, Nanded and Kolhapur.

Bitcoin Laundering



Bitcoin Laundering: Pattern



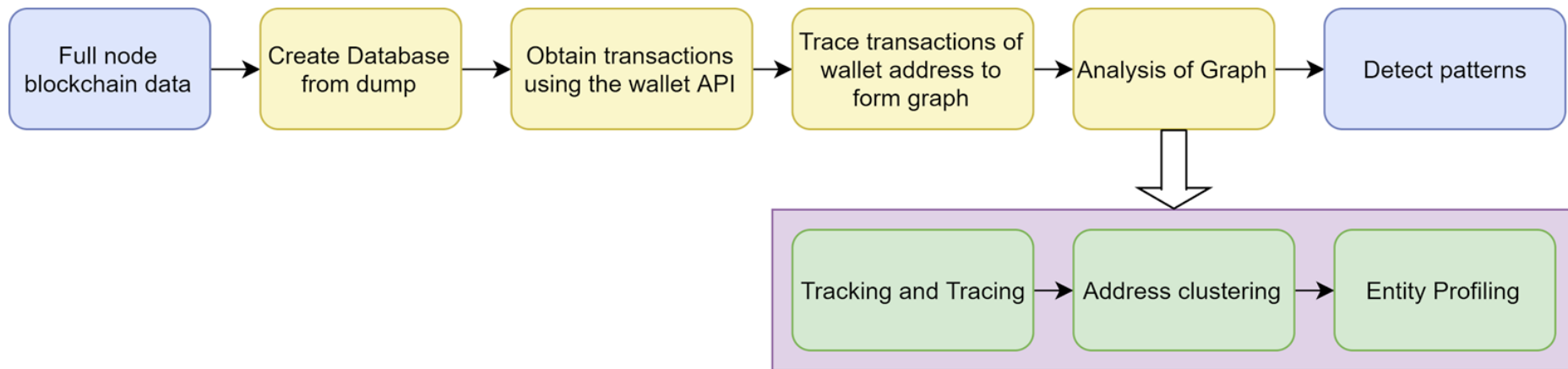


Gaps in Existing System

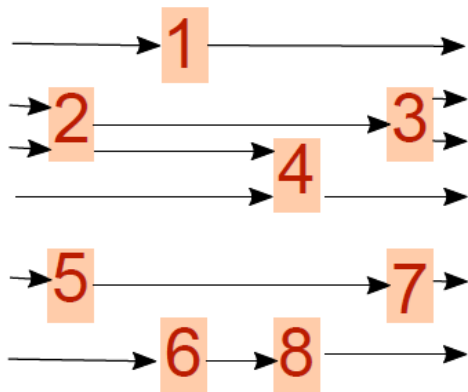
- Existing AML solutions not adequate for cryptocurrencies
- Crypto route - faster, more secured, P2P
- No intergovernmental coordination, hence haywire
- Increase in volume of transactions, need automation
- Cannot effectively estimate load in systems
- Data obtained for analysis can be faulty



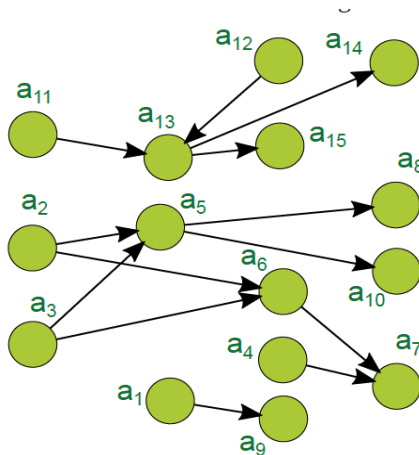
Block diagram



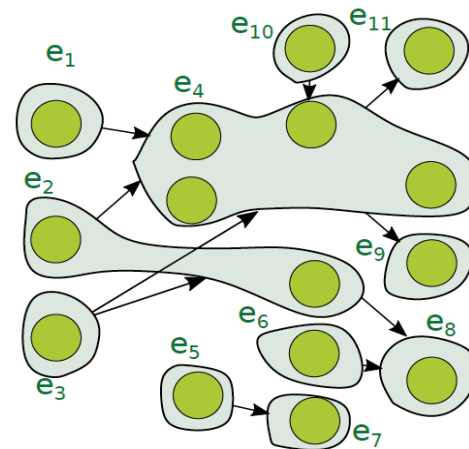
Graph Samples



Transaction Graph

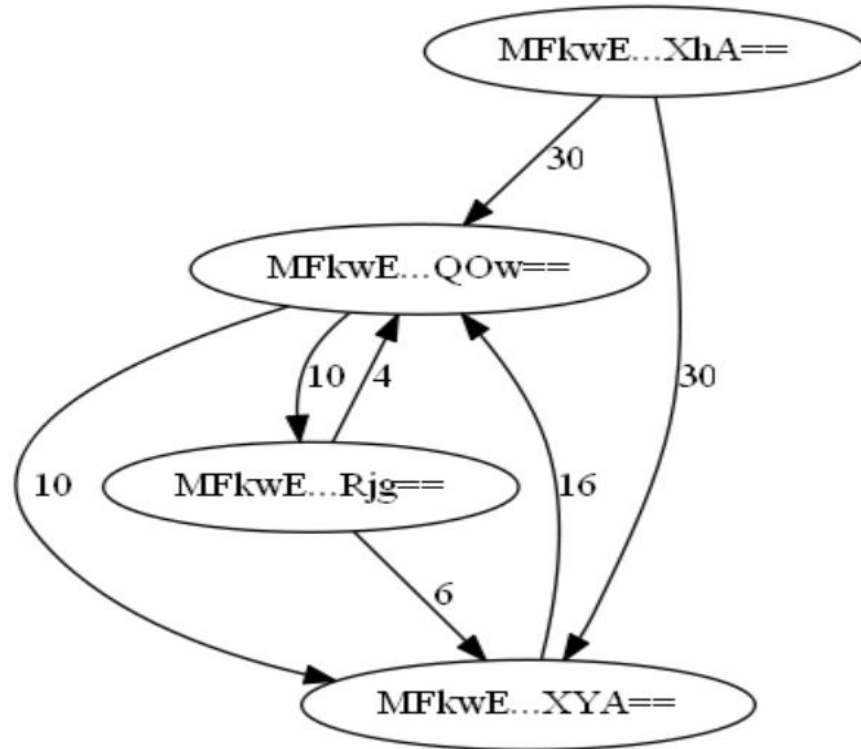


Address Graph

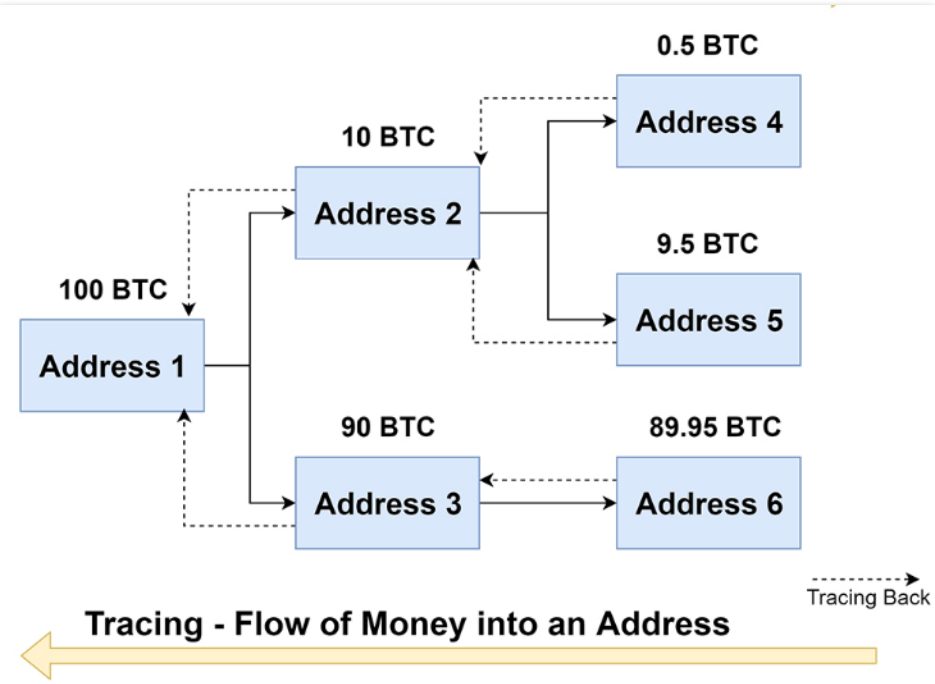
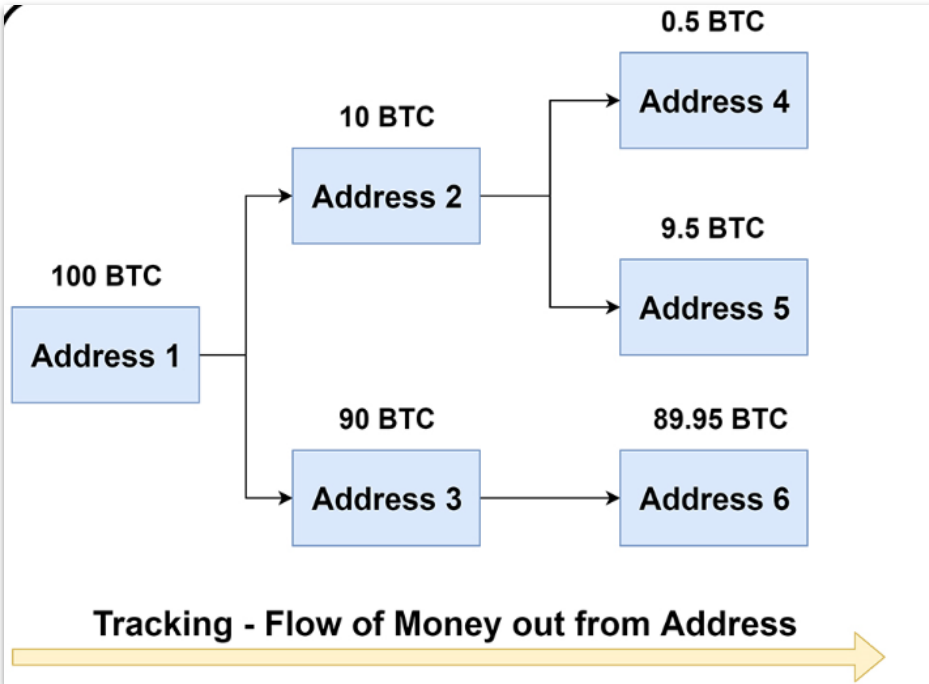


User/Entity Graph
(Multiple addresses
belonging to single
entity)

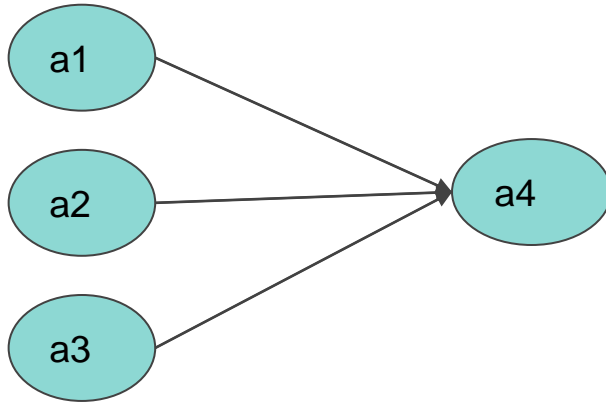
Proof of Concept



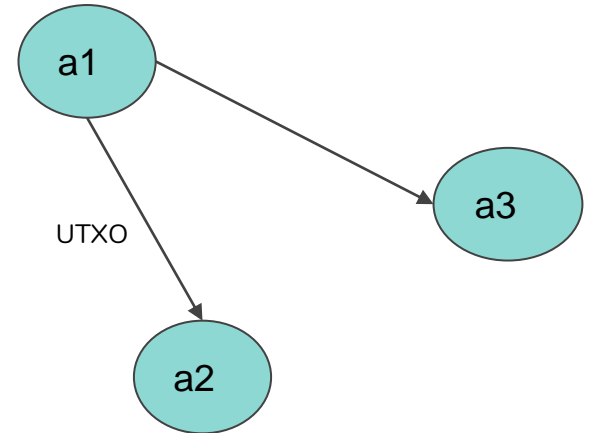
Money Flow - Tracking and Tracing



Address Clustering



Common Spend



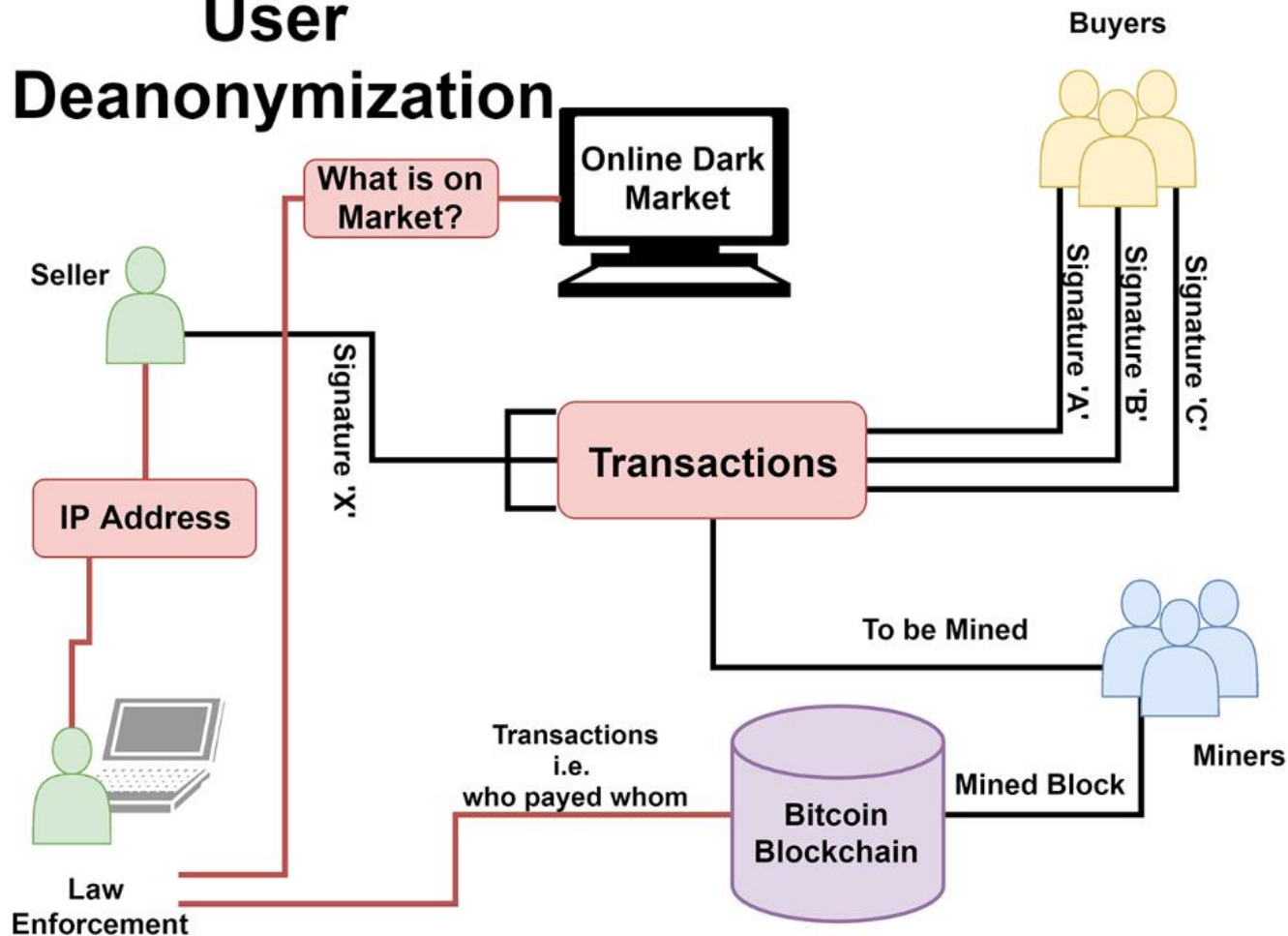
One Time Change



Entity Characterization

- Deducing the type of entity **based on the transaction features** (and combining with off-chain information)
- The entity can be
 1. Darknet Marketplace
 2. Crypto Exchange
 3. Gambling Service
 4. Ransomware Source
 5. Mixing Service

User Deanonymization





Value Addition

- Automated process for tracking down suspicious flow of money
- Aid for enforcement agencies to quicken process of AML



Future Scope

- Current effort could be extended other cryptocurrencies
- Forms the basis for pattern detection in numerous applications