



TransferWise

Distributed Systems Course

MTAT.08.009

Dmitri Timasjov



Who I am?

- Software engineer @ TransferWise
- Master student in informatics @ UT



What is TransferWise?



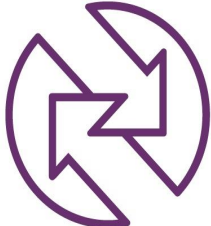
- Peer-to-peer money transfer service
- Launched in 2011 by Kristo Käärman and Taavet Hinrikus

How TransferWise works?

TransferWise has accounts across the world



Not unique one...



Funding Circle



What does this mean?

- Faster payment
- Competitive rates
- Up to 10x lower fees



Distributed system?

A **distributed system** is one in which components located at networked computers communicate and coordinate their actions only by passing messages. [\(Eero Vainikko, Distributed Systems 2015 lecture slides\)](#)

Peer-to-peer (P2P) computing or networking is a distributed application architecture that partitions tasks or work loads between peers. Peers are equally privileged, equipotent participants in the application. [\(Wikipedia\)](#)

Peer-to-peer?

Characteristics of P2P Systems

- Ensures that each user contributes resources to the system
- All the nodes have the same functional capabilities and responsibilities
- Their correct operation does not depend on the existence of any centrally-administered systems
- They can be designed to offer a limited degree of anonymity to the providers and users of resources
- A key issue: placement of data across many hosts
 - efficiency

402 P2P Systems

10.1 Introduction & overview

- load balance
- availability

Peer-to-peer?

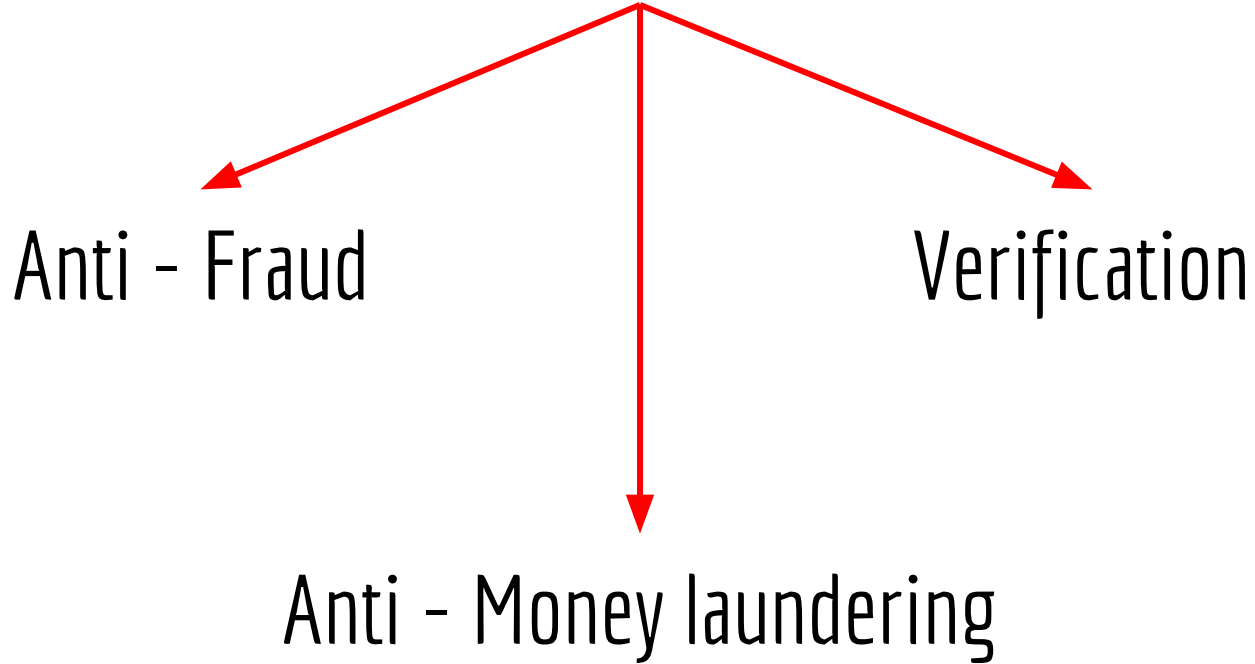
- DS in a world of money
- 1st generation DS
- Centralized P2P system: centralized server, client - server protocol

Dangers and Attacks

- Denial of Service (stop the network traffic)
- Arbitrage (rate changes)
- Fraud attacks (regulations)

KYC

Know Your Customer



Know Your Customer

Anti - Fraud

Deals with suspended fraudulent payments, customers or contacts

=> ask for additional documents, activity history

Know Your Customer

AML

Specifically dealing with money -
laundering and setting up
procedures to catch launderers

=> reporting, PEP checks

Know Your Customer

Verification

Checking and verification of documents sent in by customer

=> verification services, document checks, fake IDs

Catching bad guys (1)

Identity theft

...

Catch Me If You Can

Payments fraud

...

Where's my money?

Catching bad guys (2)

Money laundering

...

Cute name, serious business

Terrorist financing

...

Serious name, serious business

Catching bad guys (3)

Referral abuse

...

“Free money!”

Scams

...

“Hello, I am the trust fund manager of Price Onwuatuegwu and contacting you about a large sum of money”

Impact of fraud

- Fraud loss
- Payment method availability
- Payment speed
- Customer experience
- Servicing and onboarding costs

A day in the life of a fraudster

...

Not like taking candy from a baby

Fraud prevention = identity

Tell me what are your credentials and I'll tell you who you are

ID, address, business license verifications, etc.

forced verifications, contacting customers

Fraud prevention = up-to-date fraud engine

...

The Little Engine That Could

DATA IS KING

