Reputation System over 23 years

Anton Kolonin
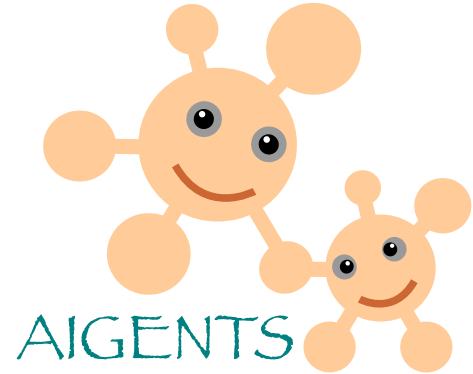
anton@singularitynet.io
akolonin@aigents.com
Telegram: akolonin
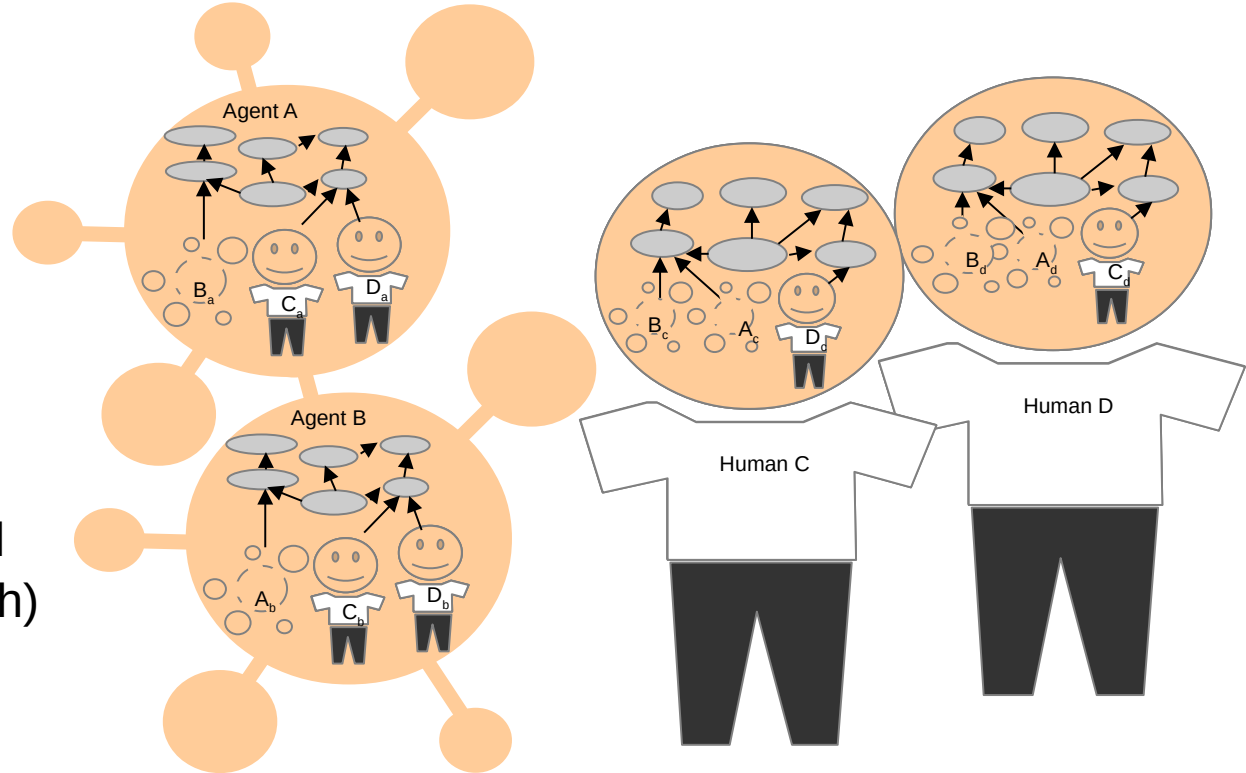
SingularityNET

AIGENTS

Reputation System 1999-2001

WebMind

Personal WebMind

Collaborative Filtering

Artificial Psychology

Compassion-based "Psyche" Model
(based on social/mental hyper-graph)

Agent A

B_a C_a D_a

Agent B

A_b C_b D_b

B_c A_c D_c

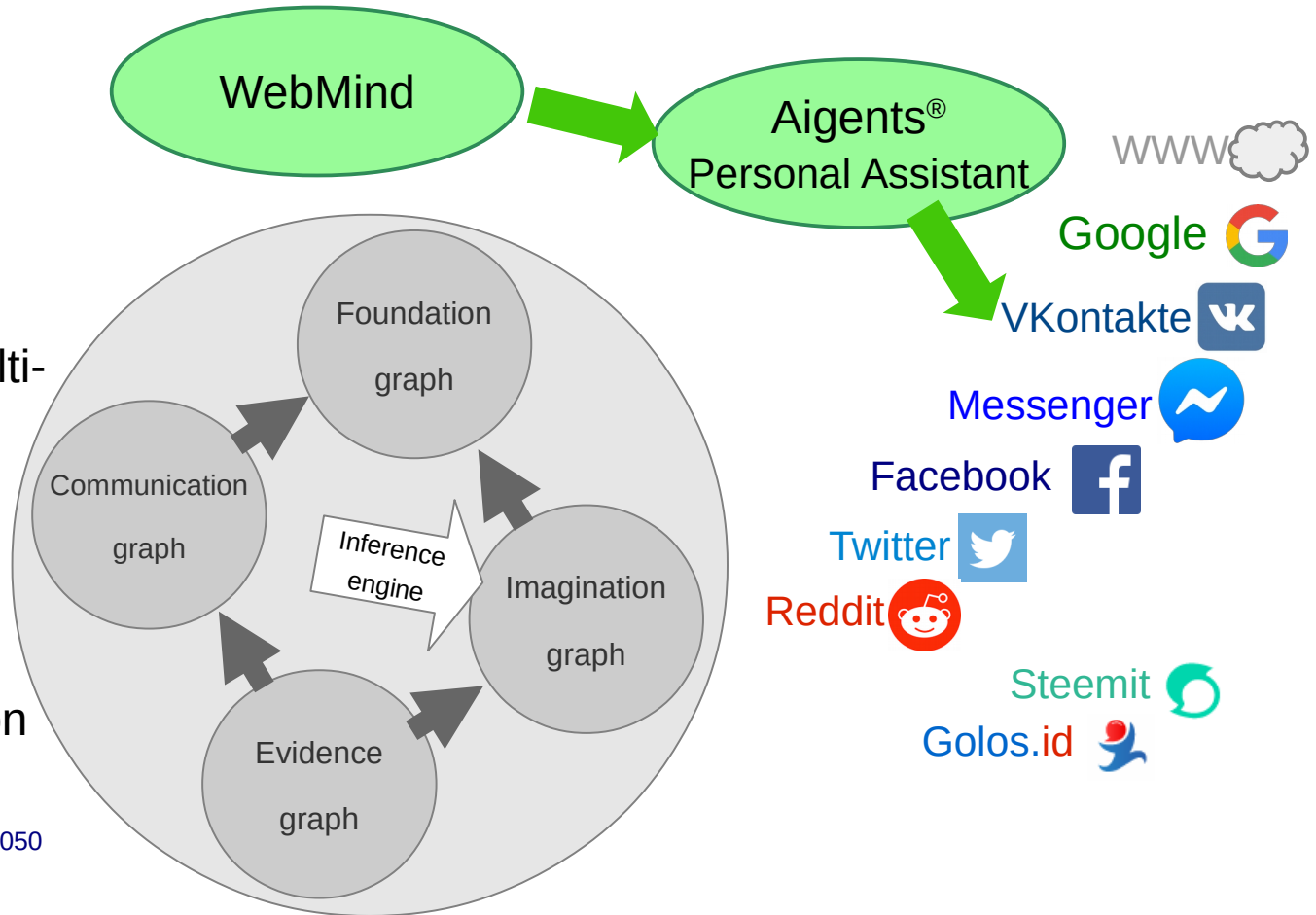B_d A_d C_d

Human C

Human D

2

Reputation System 1999-2016

Computable cognitive model based on social evidence and restricted by resources: Applications for personalized search and social media in multi-agent environments
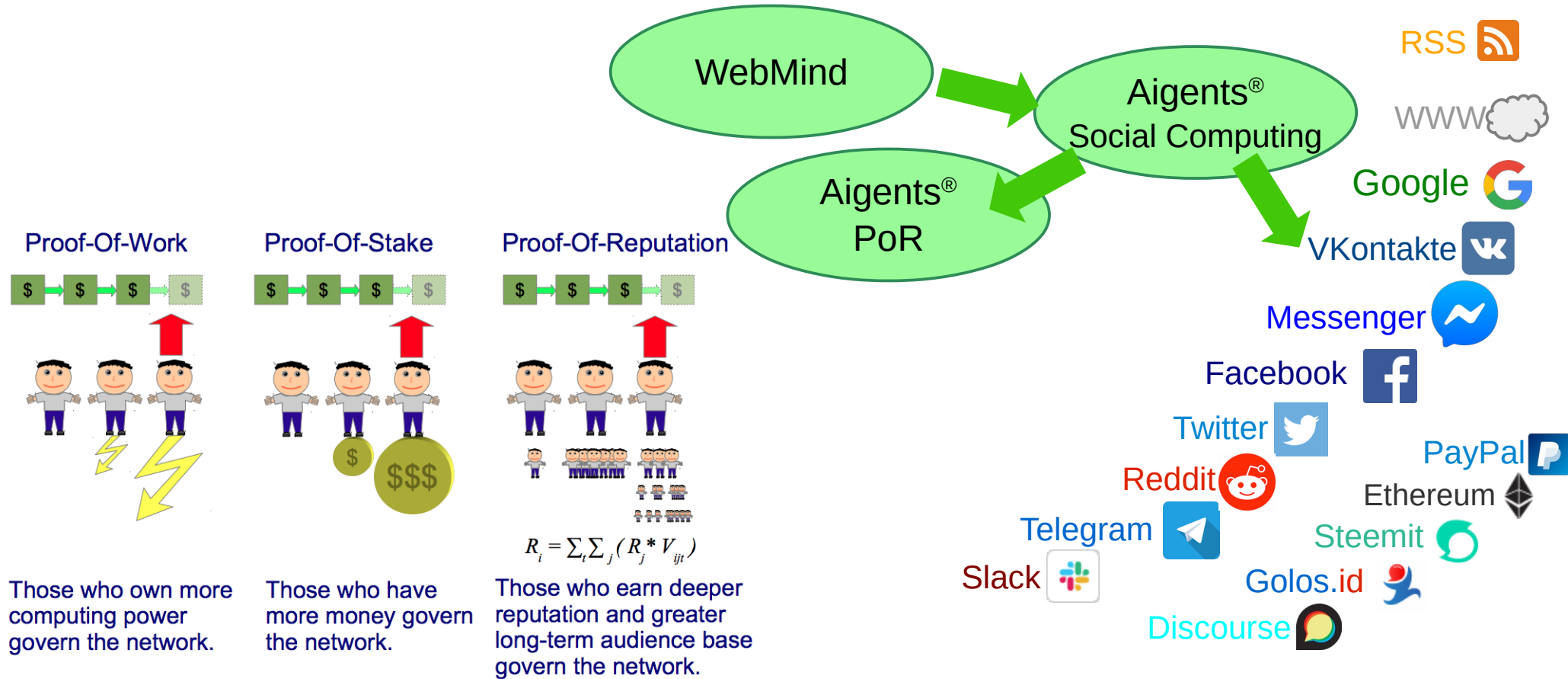
https://ieeexplore.ieee.org/document/7361869

Cognitive Architecture of Collective Intelligence Based on Social Evidence

https://www.sciencedirect.com/science/article/pii/S1877050916317239

WebMind → Aigents® Personal Assistant

WWW
Google
VKontakte
Messenger
Facebook
Twitter
Reddit
Steemit
Golos.id

Foundation graph

Communication graph

Inference engine

Imagination graph

Evidence graph

3

Reputation System 1999-2017

WebMind → Aigents® Social Computing

Aigents® PoR

RSS
WWW
Google
VKontakte
Messenger
Facebook
Twitter
PayPal
Reddit
Ethereum
Telegram
Steemit
Slack
Golos.id
Discourse

Proof-Of-Work

Those who own more computing power govern the network.

Proof-Of-Stake

Those who have more money govern the network.

Proof-Of-Reputation

$$R_i = \sum_t \sum_j (R_j * V_{ijt})$$

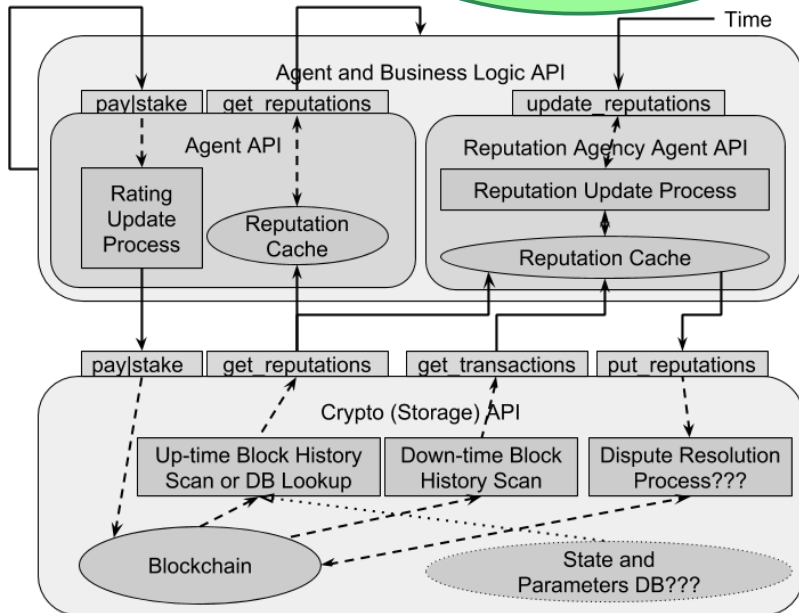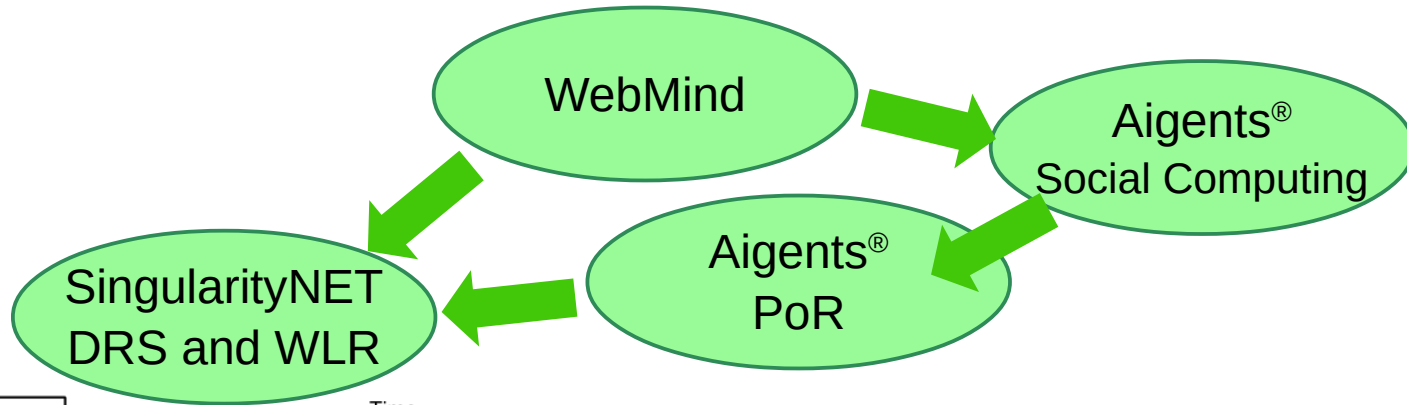Those who earn deeper reputation and greater long-term audience base govern the network.

https://steemit.com/blockchain/@aigents/proof-of-reputation-as-liquid-democracy-for-blockchain

Reputation System 1999-2018

WebMind → Aigents® Social Computing

Aigents® PoR → SingularityNET DRS and WLR

Decentralized Reputation System (DRS) and Reputation Agency Design

https://blog.singularitynet.io/reputation-system-design-for-singularitynet-8b5b61e8ed0e

https://arxiv.org/abs/1806.07342

Weighted Liquid Rank (WLR) Reputation Algorithm

https://arxiv.org/abs/1806.07342

Reputation System 1999-2019

WebMind

Aigents® Social Computing

SingularityNET DRS and WLR

Aigents® PoR

Aigents® RS (Java)

SingularityNET RS for Marketplaces

SingularityNET RS (Python)
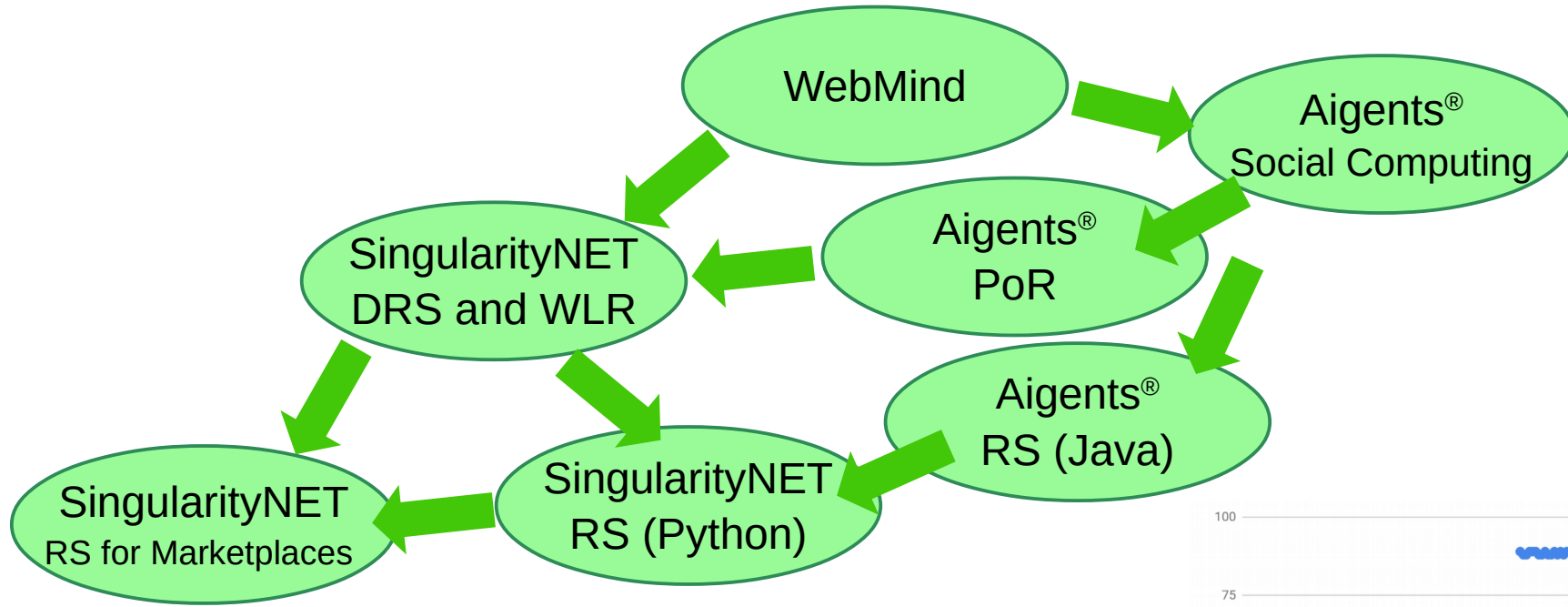
Using Reputation System for protection from scam identifying dishonest suppliers on online marketplaces

https://arxiv.org/pdf/1905.08036.pdf

https://blog.singularitynet.io/minimizing-recommendation-fraud-7dabbee8fc00
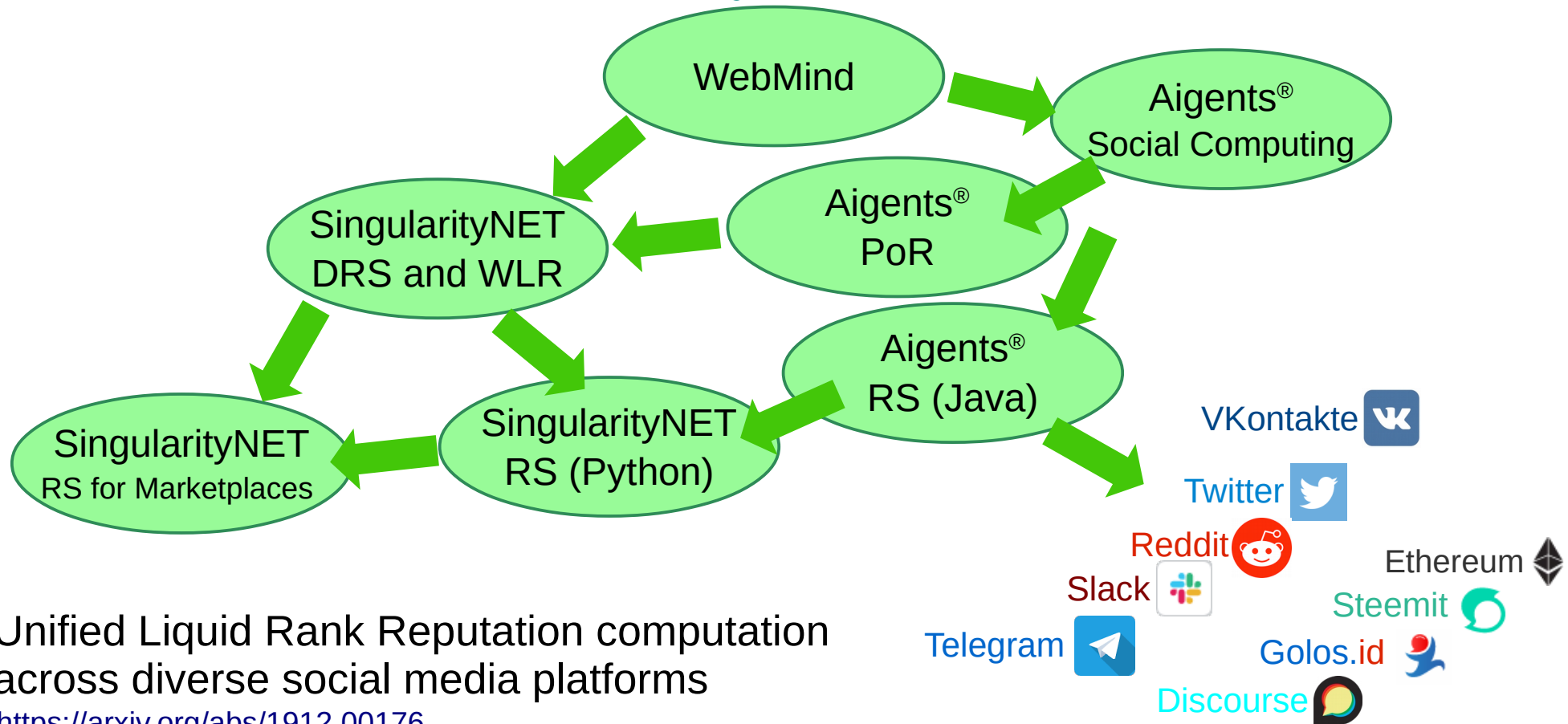
Ranks of Suppliers, dishonest Supplier (including alias) in red and honest suppliers in blue

6

Reputation System 1999-2020

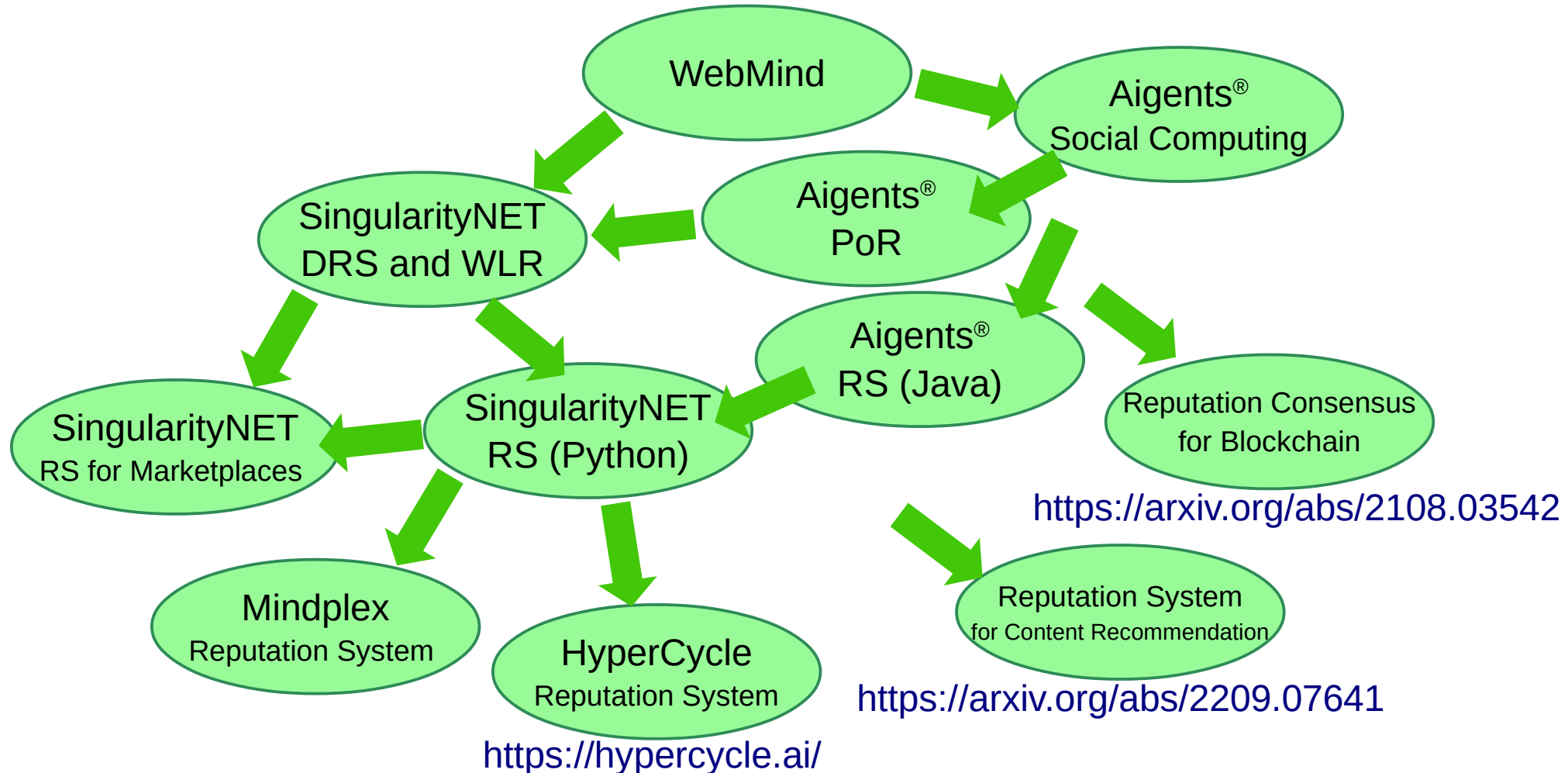Unified Liquid Rank Reputation computation across diverse social media platforms

https://arxiv.org/abs/1912.00176
https://aigents.medium.com/aigents-bot-for-telegram-groups-1dba32140047

7

Reputation System 1999-2022

WebMind

Aigents® Social Computing

SingularityNET DRS and WLR

Aigents® PoR

Aigents® RS (Java)

SingularityNET RS for Marketplaces

SingularityNET RS (Python)

Reputation Consensus for Blockchain

Mindplex Reputation System

HyperCycle Reputation System

Reputation System for Content Recommendation

https://arxiv.org/abs/2108.03542

https://arxiv.org/abs/2209.07641

https://hypercycle.ai/

8

Reputation System 2021-2022

Reputation Consensus for Blockchain

International Journal of Network Security & Its Applications (IJNSA) Vol.13, No.4, July 2021

PROOF-OF-REPUTATION: AN ALTERNATIVE CONSENSUS MECHANISM FOR BLOCKCHAIN SYSTEMS
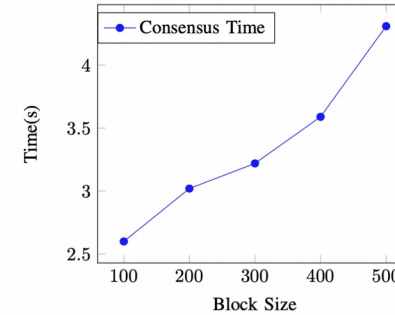
https://arxiv.org/abs/2108.03542

Figure 3: Consensus Time as the number of transactions in a single Block is varied

Table 1 shows the performance of our scheme against other existing consensus mechanisms.

Under certain conditions when the number of participating nodes is increased, our scheme can achieve up to 1,100 transactions per second.

Table 1. Comparison with other consensus mechanisms

Consensus Mechanism	Throughput(TPS)
Proof-of-Work	7
Proof-of-Stake	60
Proof-of-Reputation(Baseline)	800
Proof-of-Burn	854
Proof-of-Reputation	1,100

Reputation System 2017-2021

Reputation System
for Content Recommendation

RESULTS QUALITATIVE ANALYSIS: DECISION SUPPORT

Application of Liquid Rank
Reputation System for Content
Recommendation

https://arxiv.org/abs/2209.0764