# Personal Social Analytics

Ethereum
Steemit
Golos.io
Google+
VKontakte
Facebook

Leader

Friend
Colleague

Every thing
for every one
AIGENTS.COM

Follower

# Reputation Analysis for Social Computing

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# Standing Questions

- Does one feel like being a part of huge, planet-size computer, performing some unknown task?

- Does one want to have understanding of the programs being uploaded to it an executed by us?

- Does one want to have a bit of control over the tasks being executed?

# What is the nature of Intelligence?
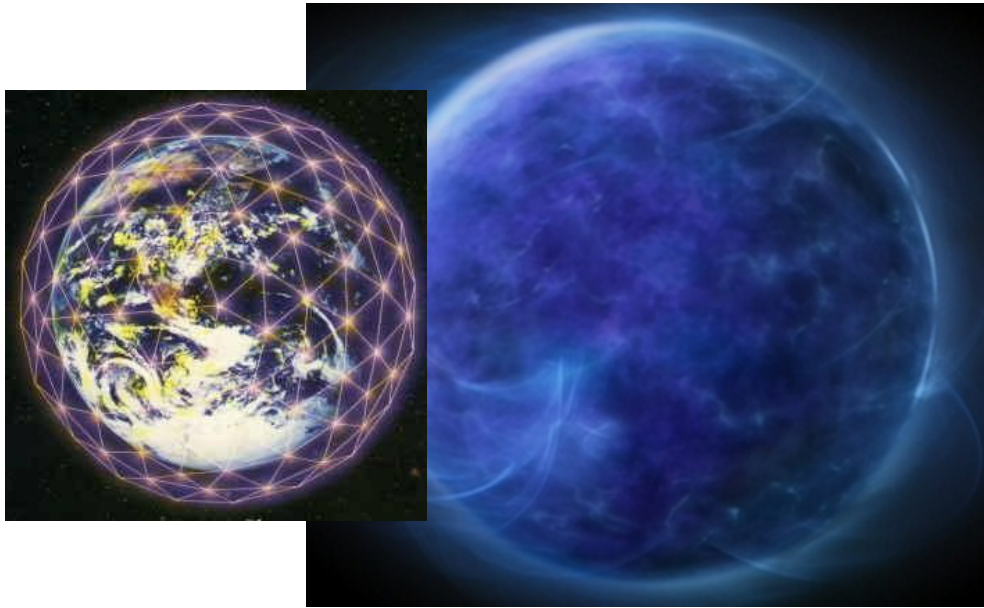


Self-aware being evolved in the course of development interacting with surrounding environment, like thinking ocean "Solaris"?

Phenomenon of cooperative behavioral patterns evolved in the course of social collaboration between multiple individual entities?

# Human Brain and Human Community

~80 billion neurons,
~16 – in neocortex

~100 m/s – speed of neural signal transmission

~1 ms – time to transmit signal between brain hemispheres

~1 ns – time to transmit signal between columns in the cortex

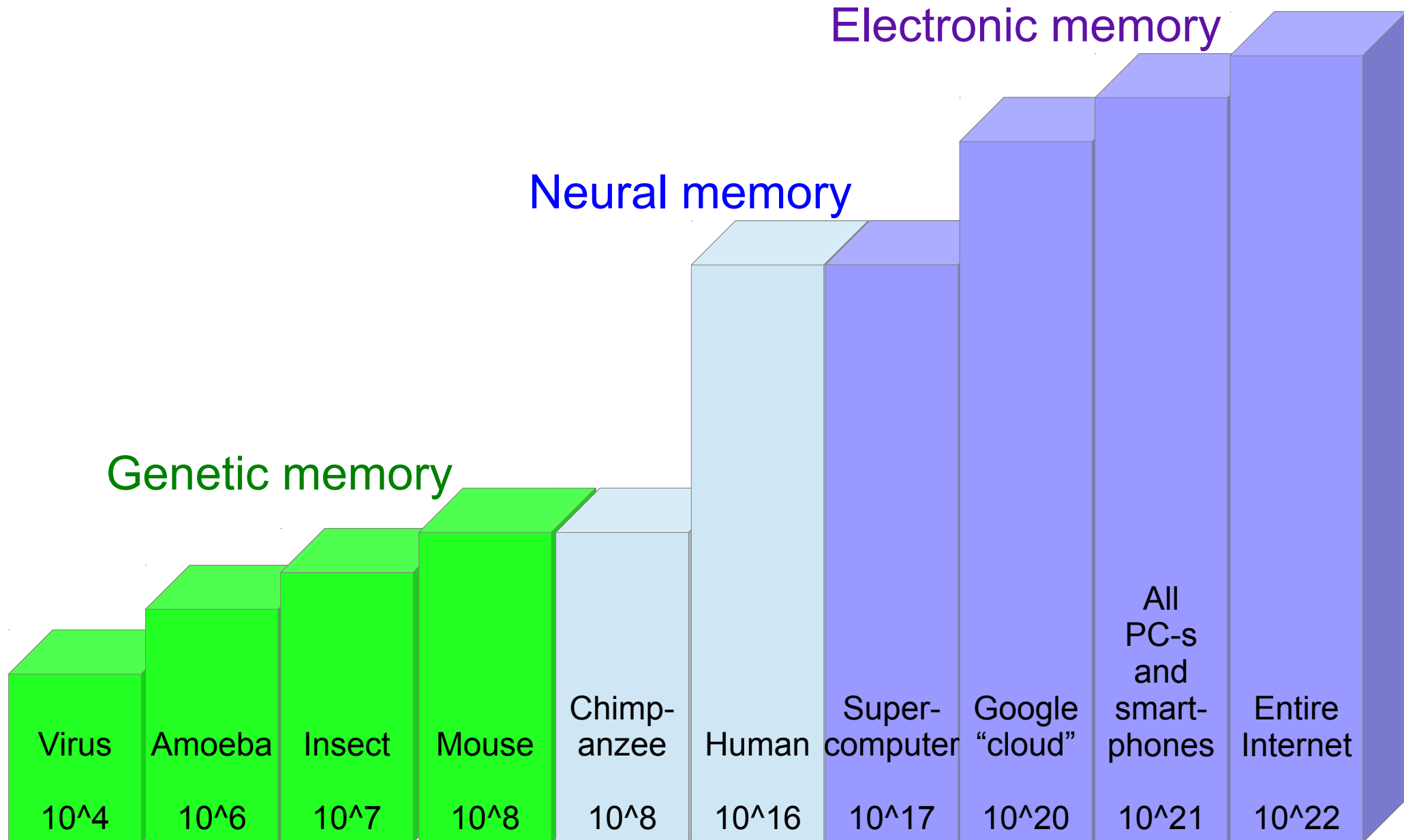Control roles of cells in human body is differentiated to cells of central neural system (~0.2% of total amount) and the rest

~8 billion people on Earth,
~3.5 – connected online

~300000000 m/s – speed of electromagnetic waves

~100 ms – time to transmit signal between earth hemispheres

~1 ns – time to transmit signal within data center

Control role of humans in society is differentiated to managing elites (~0.7% USD millionaires of populations) and manageable audience

# Evolution of memory capacity, bits

**Electronic memory**

**Neural memory**

**Genetic memory**



| Virus | Amoeba | Insect | Mouse | Chimp-anzee | Human | Super-computer | Google "cloud" | All PC-s and smart-phones | Entire Internet |
|-------|--------|--------|-------|-------------|-------|----------------|-----------------|---------------------------|-----------------|
| $10^4$ | $10^6$ | $10^7$ | $10^8$ | $10^8$ | $10^{16}$ | $10^{17}$ | $10^{20}$ | $10^{21}$ | $10^{22}$ |

# Hybrid human-machine social computer ("global brain") overall architecture
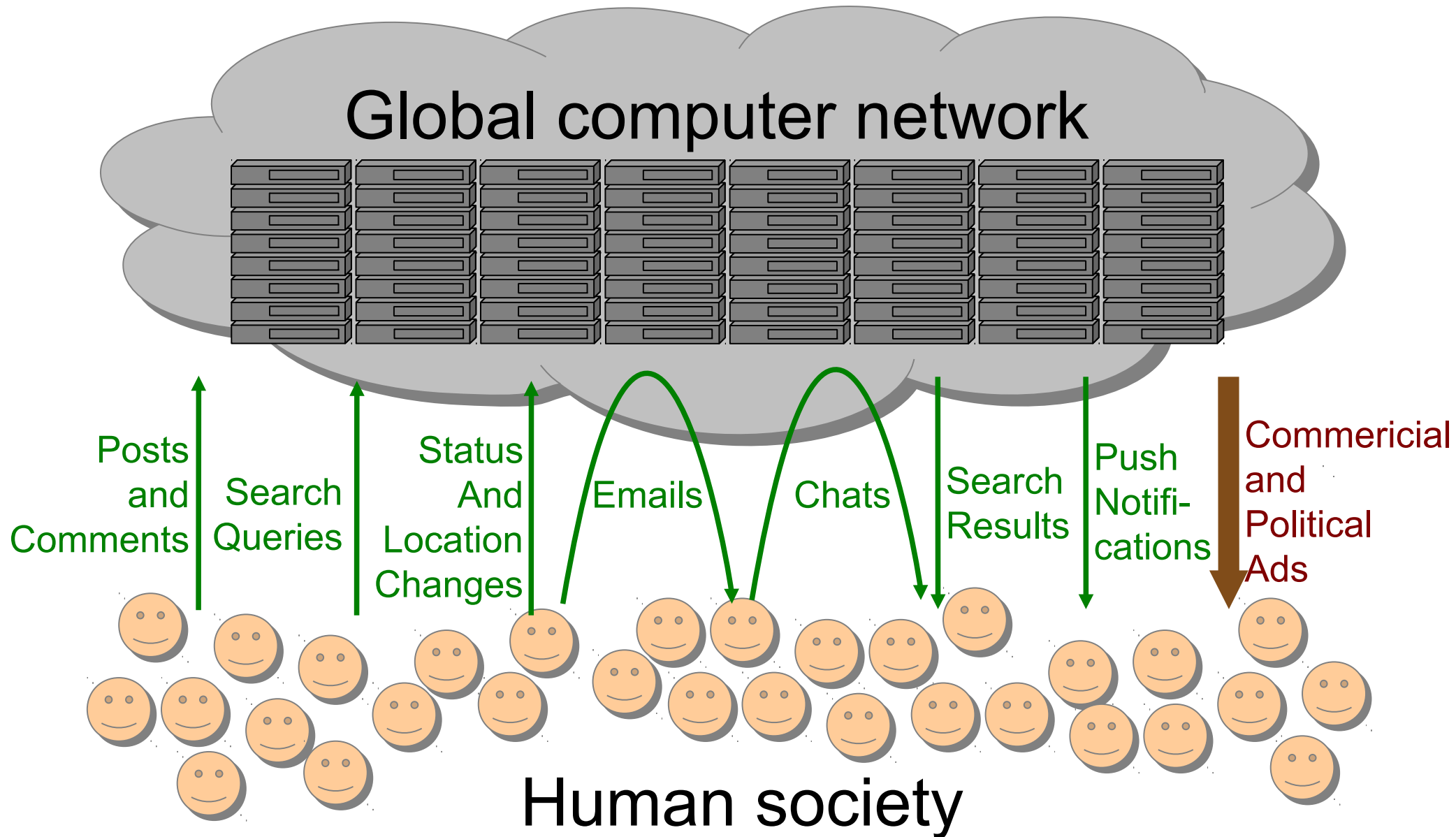
# People "monthly connected" to "planetary global brains" Google+Facebook – worldwide, VK – in Russia WeChat+Baidu+QQ etc. - in China



80 million

2 billion

1.5 billion
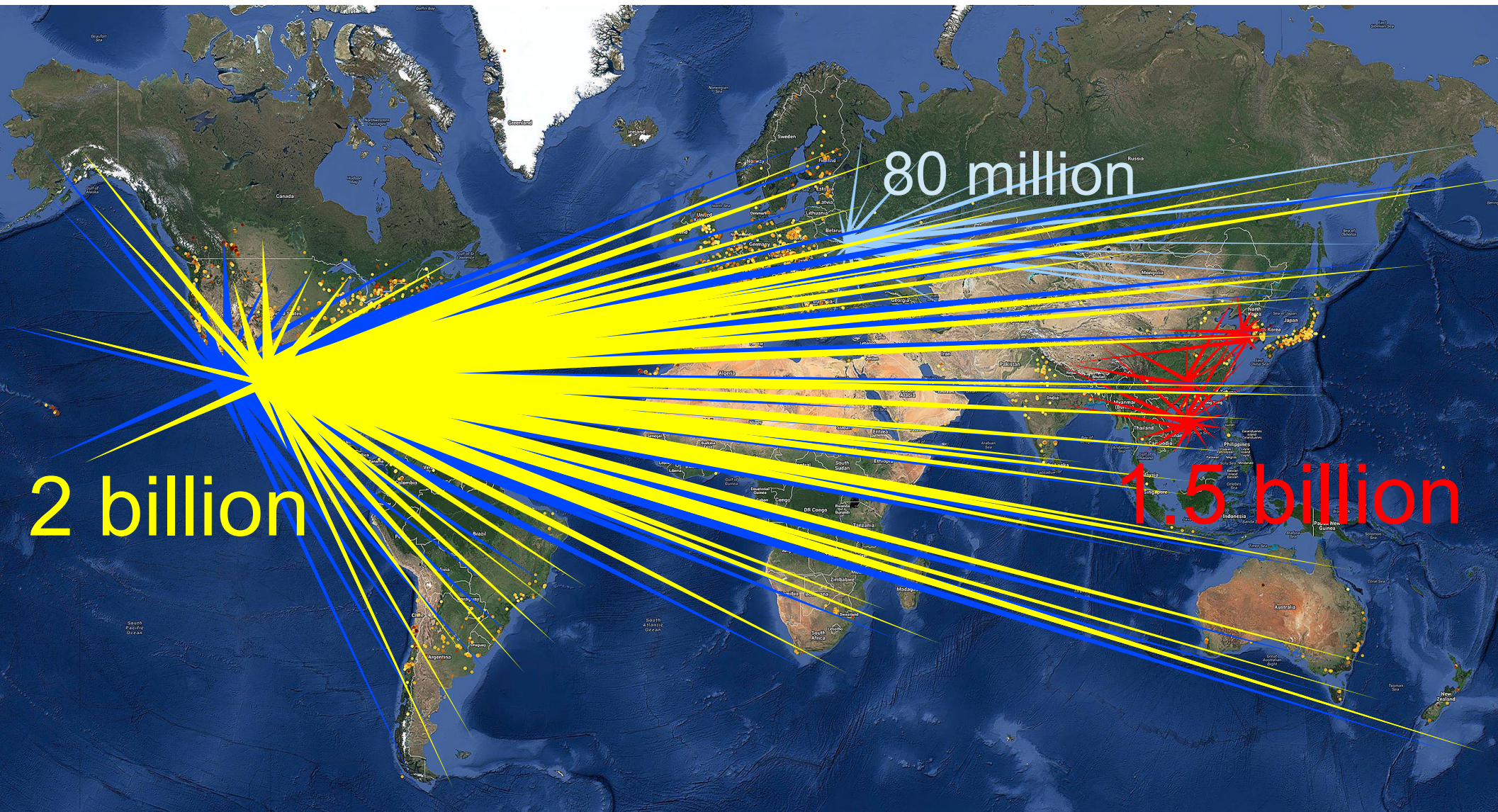
# Challenge: provide every user with "personal agent of global brain"?
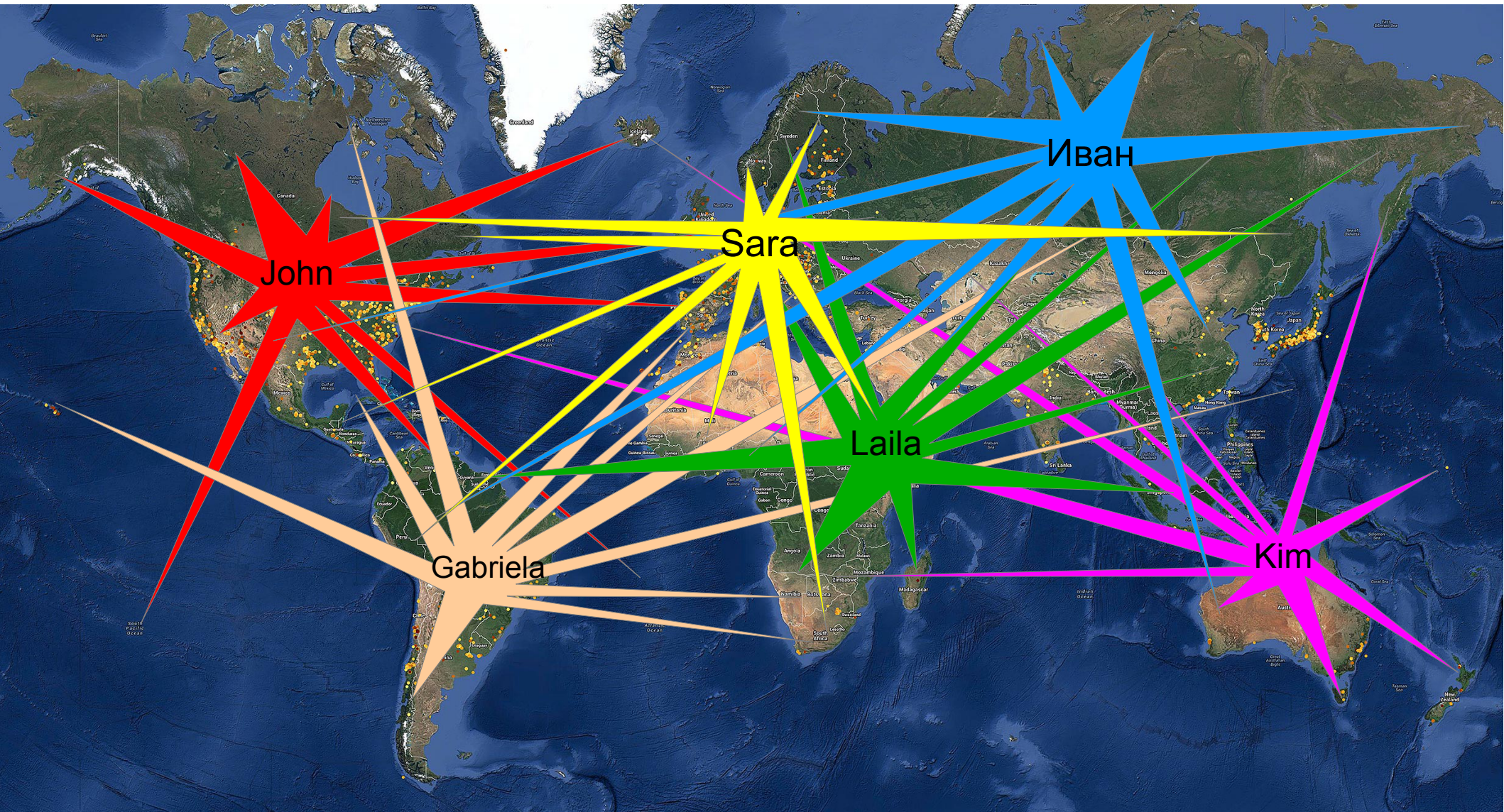
# Aigents Social Computing

provides "magic mirror" in the world of social and informational networks to recognize your preferences, let you know your friends and find what you need



News

Aigent

Me

Ethereum
Steemit
Golos.io
Google+
VKontakte
Facebook
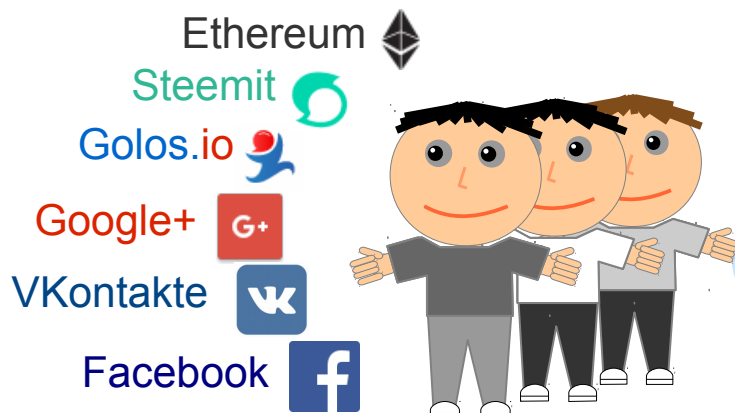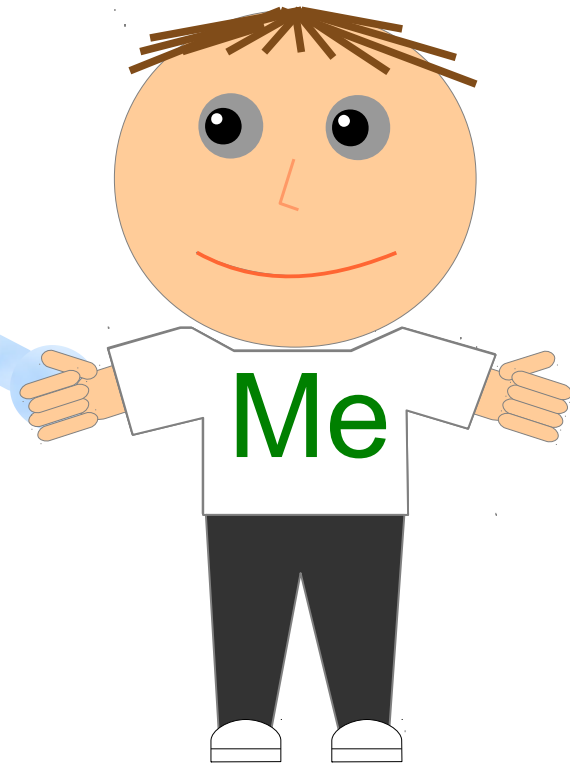
Friends

# Social Evidence-based Cognitive Model

## Compassion-based artificial psyche design
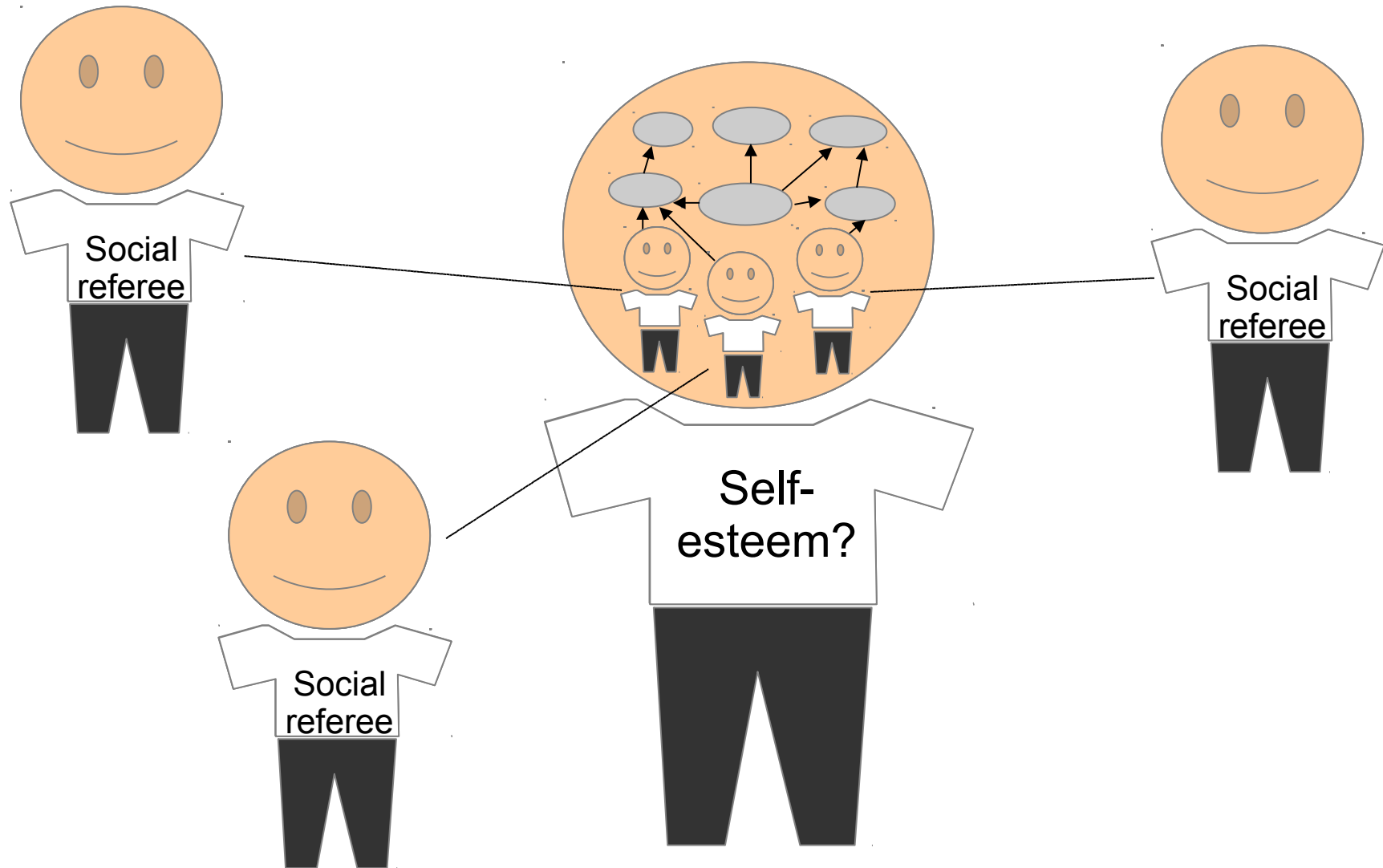


B.Goertzel, A.Kolonin, J.Pressing, C.Pennachin (2000)

# Social Evidence-based Cognitive Model

**Trusted belief system**

I
is
co-worker
friend
drink
programming
travel

**Trusted social references**

Mary is friend of mine
Peter is friend of mine
Bob is co-worker of mine
Bob is friend of Peter

Foundation graph

Social graph

Thinking (Inference)

Imagination graph

Evidence graph

**Currently inferred world view**

**Java**
★★★★★
Java coffee
★★★★
Drink Java coffee
★★★★
Program in Java language
★★★
Java island
★
Visit Java island
★

**Collection of experienced and communicated facts**

1997: Bob is programming in Java
1998: Peter visited Java
1999: I am programming in Java
2011: Mary visited Java
2012: Peter is programming in Java
Yesterday: Peter and me drink Java
Today: Mary and me drink Java

# Social Evidence-based Cognitive Model
## Understanding Social Engineering
### Method: "Redundant Social Evidence"
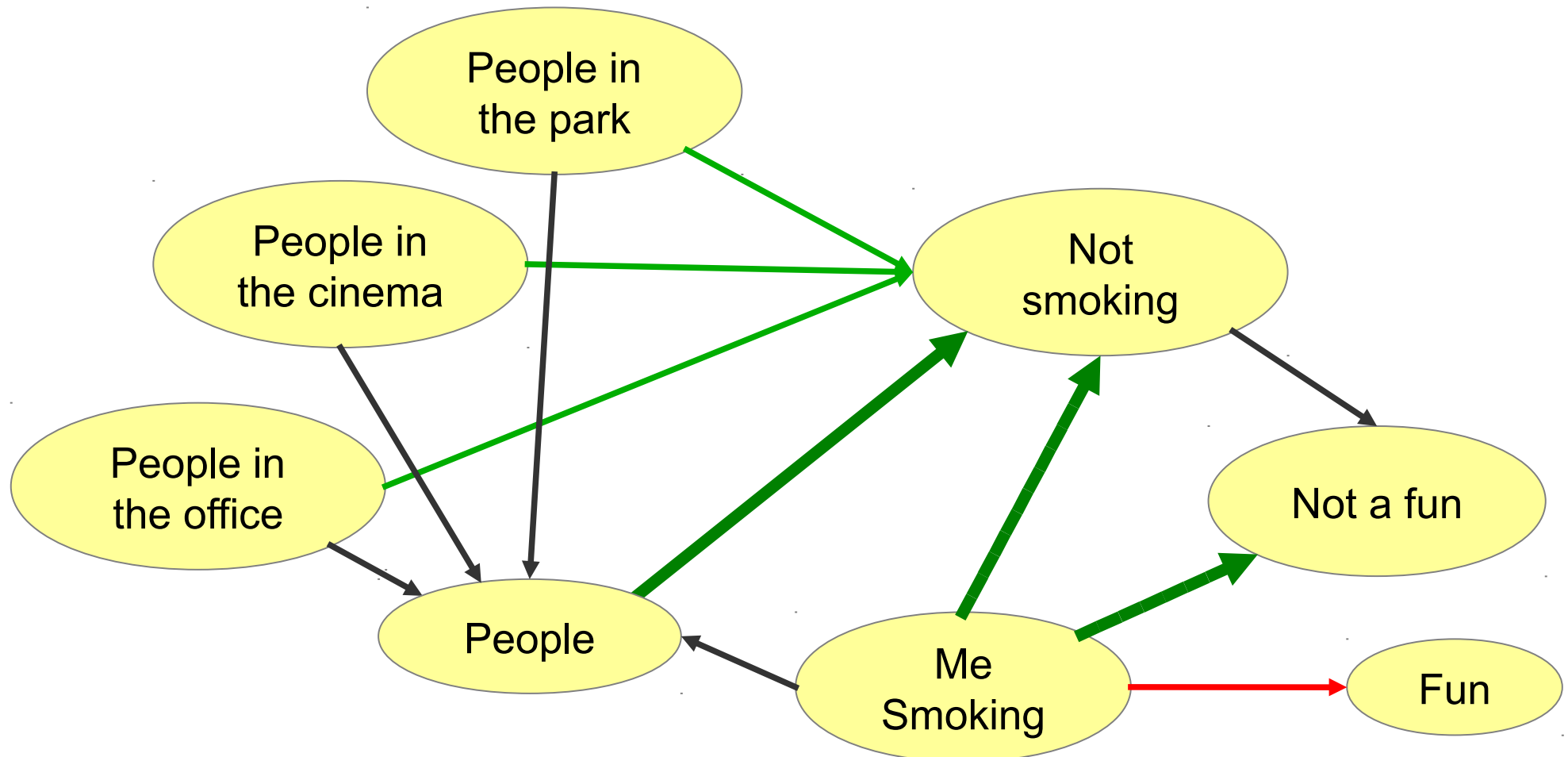
# Social Evidence-based Cognitive Model
# Predicting Individual Behavior

**Social graph**
size and efficiency

Socialized Conservator

Socialized Innovator

Egocentric Conservator

Egocentric Innovator

**Imagination graph**
size and efficiency

**Foundation graph**
size and efficiency
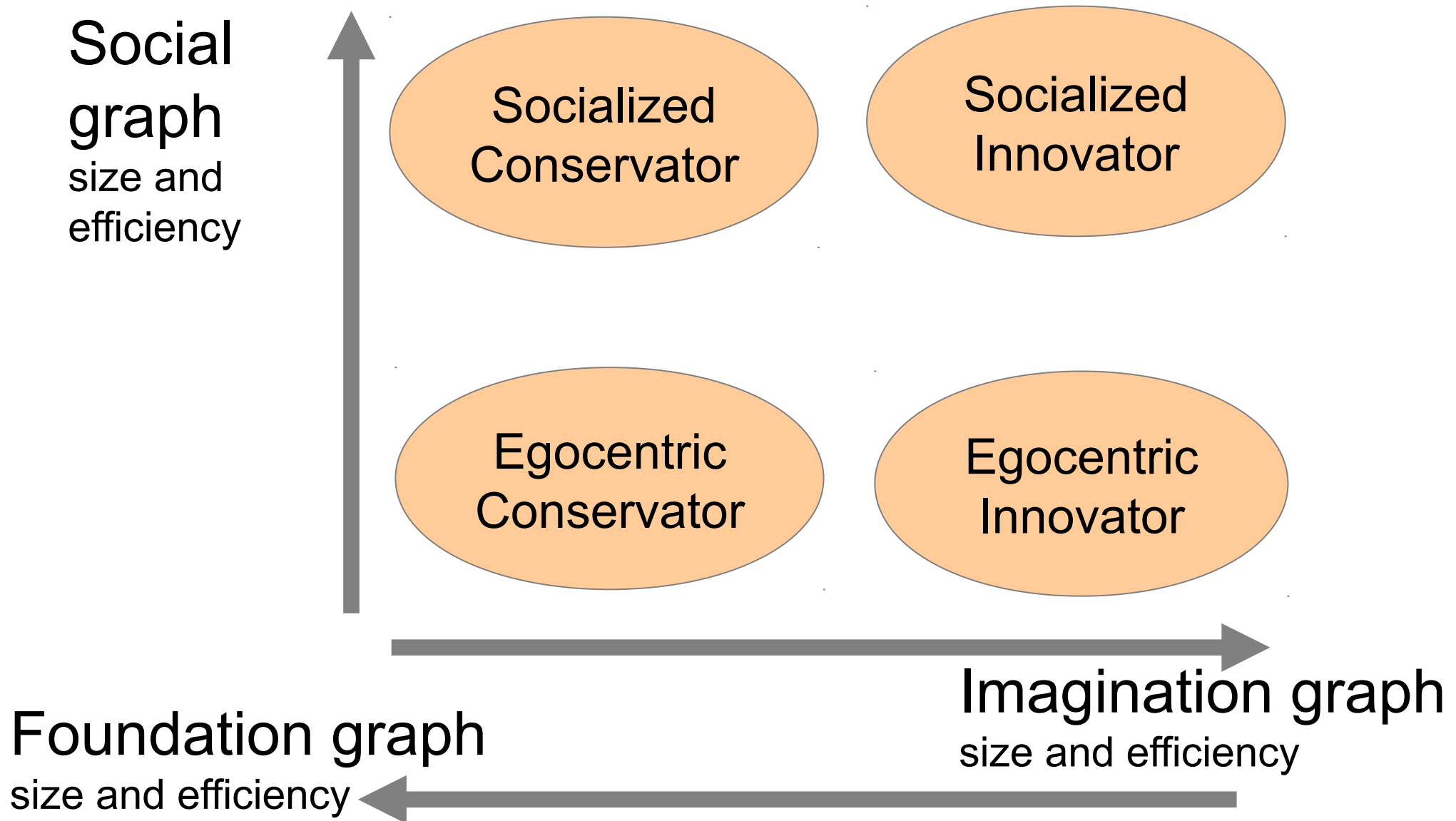
# Social Evidence-based Cognitive Model
## Anticipating trends of social development



Healthy life and sports

We are all - one family

Religious intolerance

National domination
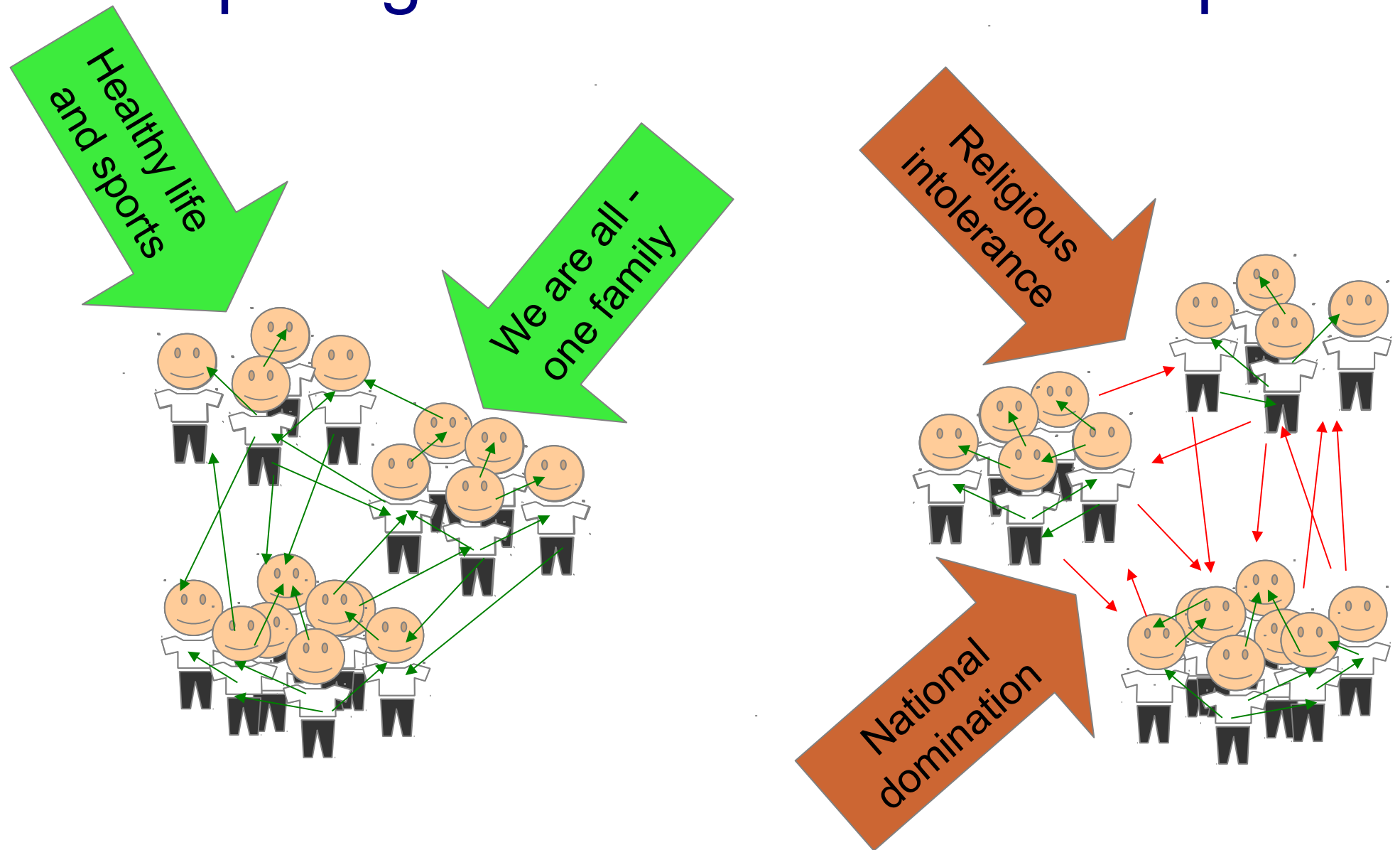
# Personal Social Analytics
## Start using at https://aigents.com/ today!



1. Register with social network

2. Order report

3. Review profile and dynamics

4. Browse your social graph

# Personal Social Analytics Domain Model (original data)



Topic

Friend

Me

Like, Vote

Like, Vote

Like, Vote

Comment

Post

Use

Word, phrase

1

Calendar period
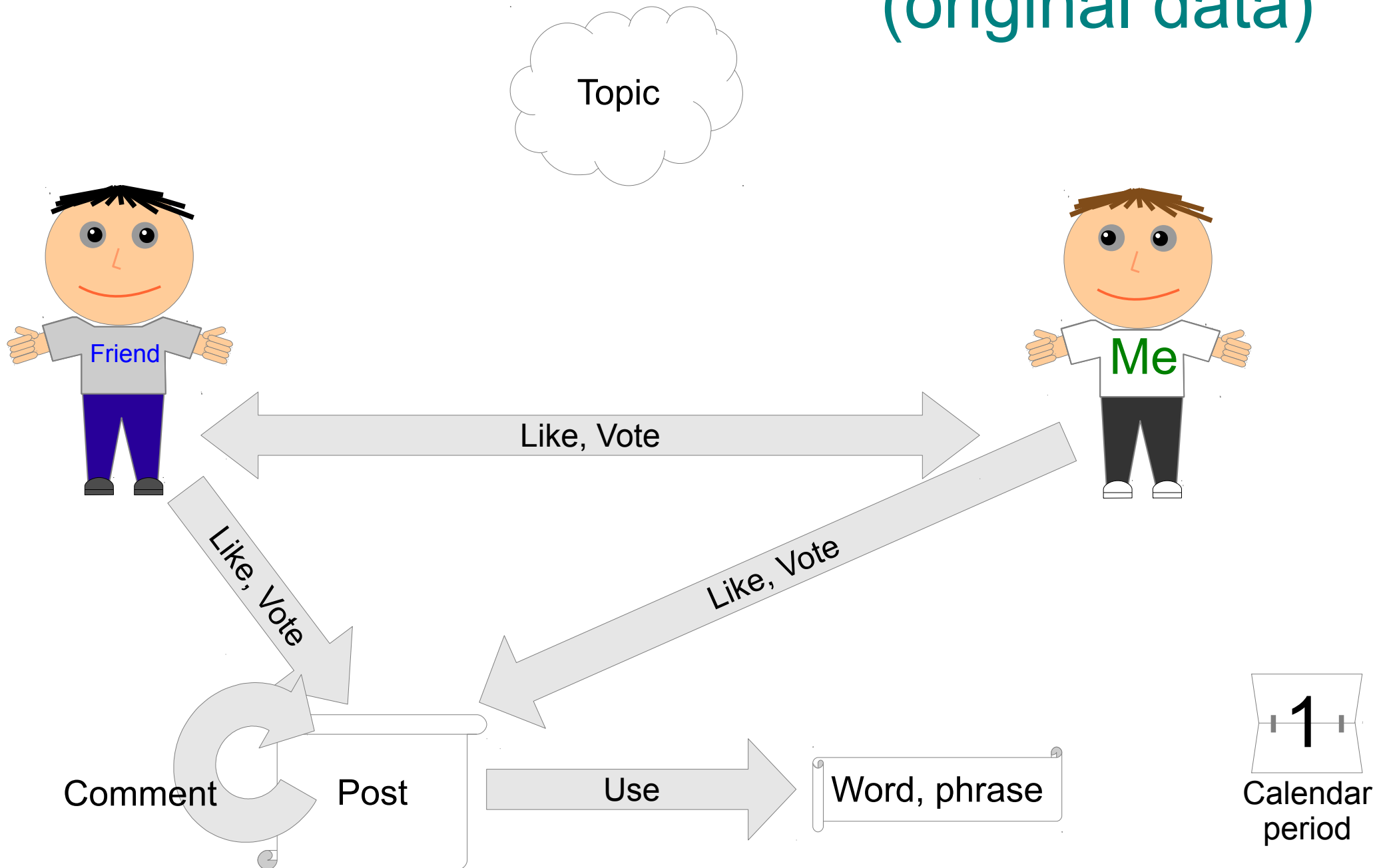
# Personal and social analytics - relationships

Best friends

$$B_{ij} = L_{ij} * (L_{ji} + C_{ji}) / Max_{j=1,J} (L_{ij} * (L_{ji} + C_{ji}))$$

Fans

$$F_{ij} = ((L_{ji} + C_{ji})/(1 + L_{ij} + C_{ij}))/Max_{j=1,J} ((L_{ji} + C_{ji})/(1 + L_{ij} + C_{ij}))$$

Like and comment me

$$F'_{ij} = (L_{ji} + C_{ji}) / Max_{j=1,J} (L_{ji} + C_{ji})$$

Authorities

$$A_j = ((L_{ij} + C_{ij})/(1 + L_{ji} + C_{ji})) / Max_{j=1,J} ((L_{ij} + C_{ij})/(1 + L_{ji} + C_{ji}))$$

Liked by me

$$A'_j = (L_{ij} + C_{ij}) / Max_{j=1,J} (L_{ij} + C_{ij})$$

My karma by periods

$$K_{it} = \sum_{j,t} (L_{ij} + C_{ij}) / Max_{t=1,T} \sum_{j,t} (L_{ij} + C_{ij})$$

# Personal Social Analytics Domain Model (with derived data)
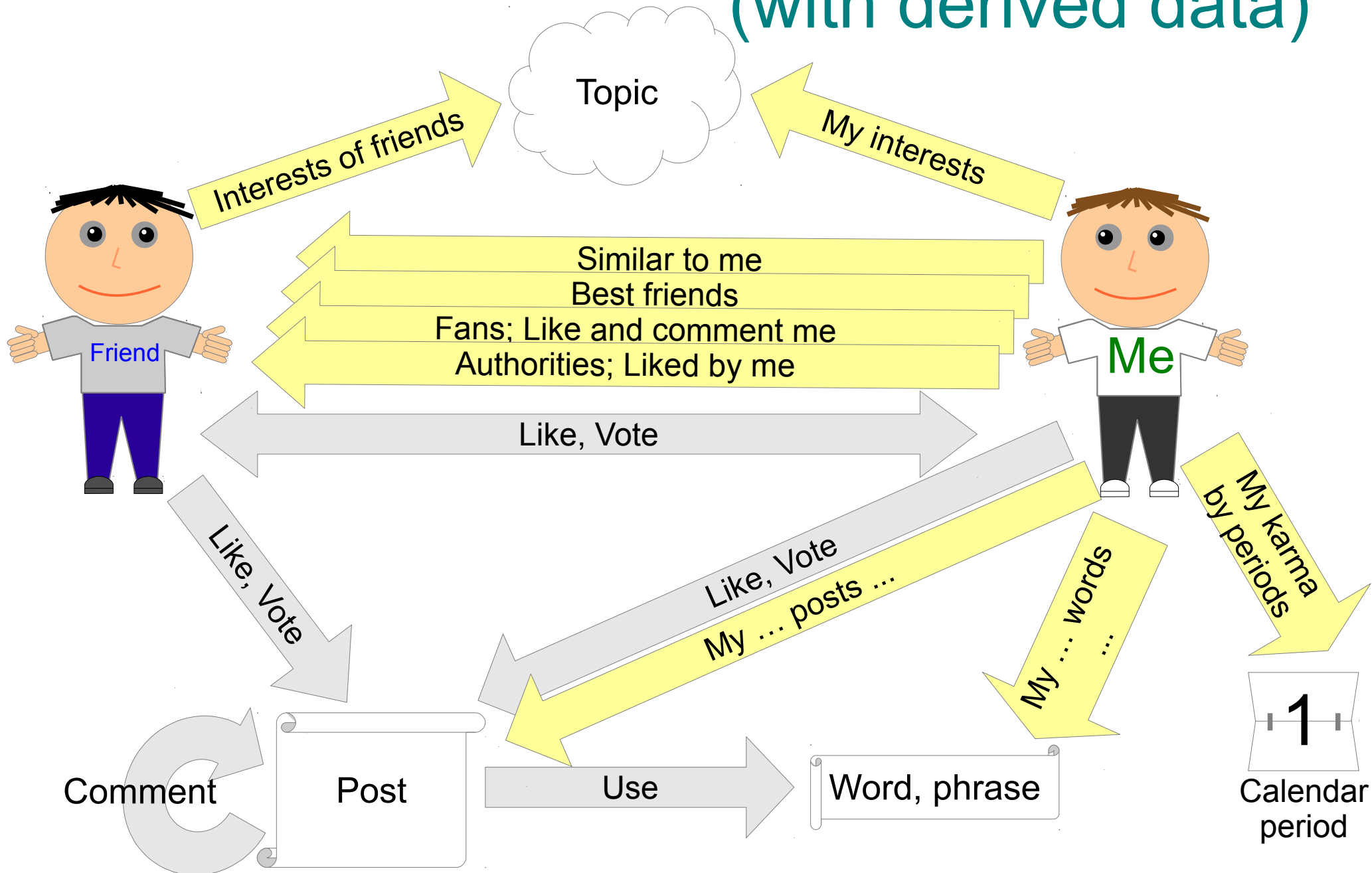
# Case 1: Helping users to improve their social capital ("karma") over time, monitoring dynamics of its change correlated with online communications, topics and connections changing over time.

**My words by periods**

| Period | Karma,% | Likes | Comments | Words |
|---|---|---|---|---|
| 2018-03-16 - 2018-03-17 | 29 | 25 | 4 | сибирь boss like robots since kids |
| 2018-03-09 - 2018-03-16 | 54 | 45 | 9 | mind agent сибирь awareness social soul сегодняшний до |
| 2018-03-02 - 2018-03-09 | 67 | 56 | 11 | source буду opencog open развития slides agi агенты project hr-менеджеров ру |
| 2018-02-23 - 2018-03-02 | 2 | 26 | 2 | agi ai conference prague human-level intelligence field event please области general works русски агентов question chair founded vaclav искусственного great интеллектуальных off серверную franz вопросы th готовьте series exciting версии |
| 2018-02-16 - 2018-02-23 | 94 | 87 | | agi model list |
| 2018-02-09 - 2018-02-16 | 20 | 18 | | |
| 2018-02-02 - 2018-02-09 | 33 | 28 | | |
| 2018-01-26 - 2018-02-02 | 21 | 17 | | |
| 2018-01-19 - 2018-01-26 | 43 | 40 | | |
| 2018-01-12 - 2018-01-19 | 35 | 28 | | |
| 2018-01-05 - 2018-01-12 | 25 | | | |
| 2017-12-29 - 2018-01-05 | 100 | 87 | | |
| 2017-12-22 - 2017-12-29 | 47 | 41 | | |

**My friends by periods**

| Period | Karma,% | Likes | Comments | Friends |
|---|---|---|---|---|
| 2018-03-16 - 2018-03-17 | 29 | 25 | 4 | Dmitry Prokhorov Anna Brusnitsina Ryhwei Yeh Anna Chernykh-Tesakova Виктор Голиков Misha Kolonin Ilya Nenashev Николай Коротич Tatyana Erofeeva Николай Гинзберг Evgeny Kanashin Mikhail Nikolskiy Lyudmila Kolonina Сергей Нефедов Vladimir Kirilenko Daria Kolyakina Garin Evgenii Vladimir Ponikarovski Enrico Mariotti Дарья Долотенкова Константин Бакулев Serge Gluschnev Mike Duncan Ольга Полунина Ирина Карлинер Andy Shapovalov |
| 2018-03-09 - 2018-03-16 | 54 | 45 | 9 | Aigents Елена Ступина Pierre de Lacaze Ольга Полунина Lev Vertgeym Ryhwei Yeh Anna Chernykh-Tesakova Дмитрий Кошелев Виктор Голиков Georg Vertiprachov Ольга Ускова Misha Kolonin Yulia Kolonina Дмитрий Пучков Vyacheslav Ananyev Yury Nebieridze Vasyl Luts Artem Vital'evich Николай Гинзберг Natalia Lukovnikova Yulia Danilova Victor Smirnov Anna Brusnitsina Olga Stoyanovskaya Vanya Vanchez Dmitry Zhuravlev Andrei Klimov Mikhail Nikolskiy Inga Yurovskaya Mykola Rabchevskiy Raymond de Lacaze Nataly Bright Daria Kolyakina Arseniy Kolonin Валерий Берд Алина Рябинина Elvira Ko مدیح لیاقت Enrico Mariotti Дарья Долотенкова ПиР Сибирь-2018 Александр Гришуленок Danila Akimov Vadim Filippov Константин Бакулев Evgeniy Pavlovskiy Ерлан Байжанов Simone Says |
| 2018-03-02 - 2018-03-09 | 67 | 56 | 11 | Lyudmila Kolonina Yulia Kolonina Николай Гинзберг Pierre de Lacaze Raymond de Lacaze Daria Kolyakina Anya Danilova Enrico Mariotti Сергей Шумский Yury Nebieridze Scott Jones Anna Brusnitsina Mark Watson Ольга Полунина Виктор Голиков Elena Rozhkova Елена Ступина Ekaterina Vronskaya Gabriel Axel Natalya Konopleva Christopher Preece Игорь Замятин Mikhail Svjatogor Gleb Protopopov Arseniy Kolonin Дарья Долотенкова Tina Naer Константин Бакулев Alexandr Kychakov Andrew Shell Denis Sosnovtsev Сергей С. Дмитрий Кошелев Alexey Vesnin Misha Kolonin Chernyakov Maxim Vyacheslav Ananyev Aigents Ilya Zarezenko Kat Von B Philip McMaster Mikhail Nikolskiy Inga Yurovskaya Marcello Mari Mykola Rabchevskiy Валерий Берд Alexander Dubynin Serge Gluschnev Olga Tabunschikova Алексей Еремин Mikhail Tumaykin Ryhwei Yeh |
| 2018-02-23 - 2018-03-02 | 28 | 26 | 2 | Ryhwei Yeh Enrico Mariotti Виктор Голиков Misha Kolonin Andrey Khapugin Андрей Лебедев Андрей Толстихин Наталья Баранова Yury Nebieridze Alexander Matveyev Anton Baltsevich Scott Jones Anatoly Tkachev Katya |

# Case 2: Helping users to understand themselves better and perform more efficiently online – using their tracks in social networks and online resources, capture their interests, relationships, communication patterns and social structures.
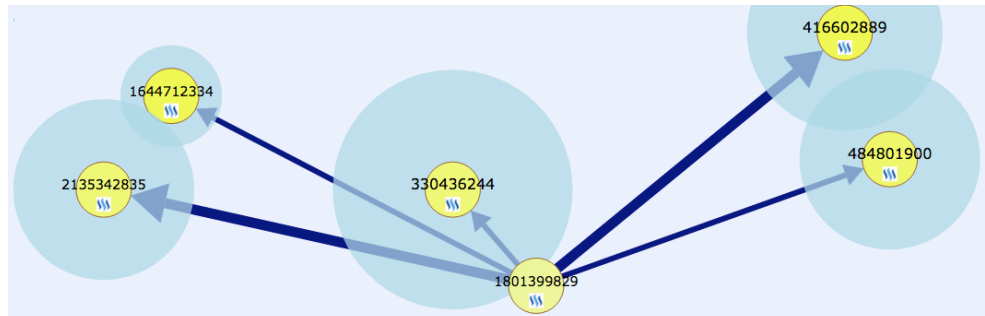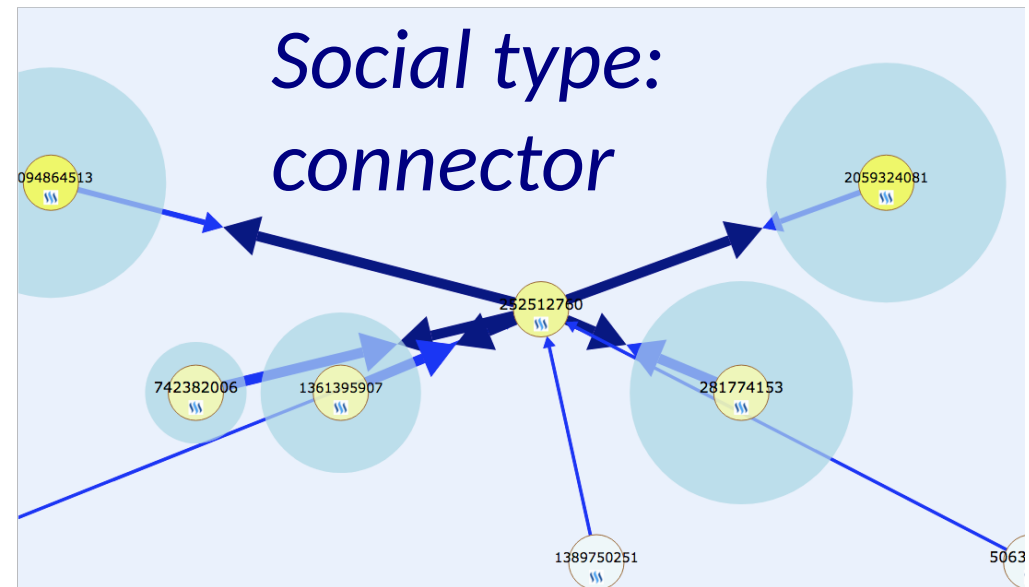


Social type: follower
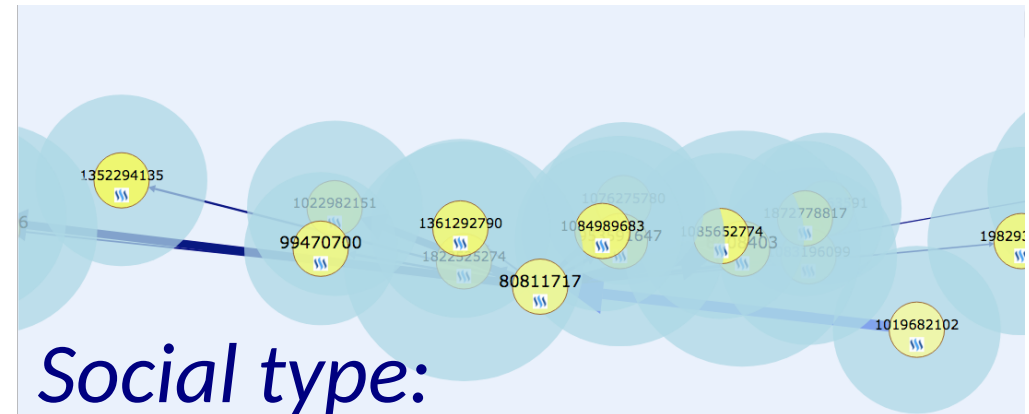
Social type: peer
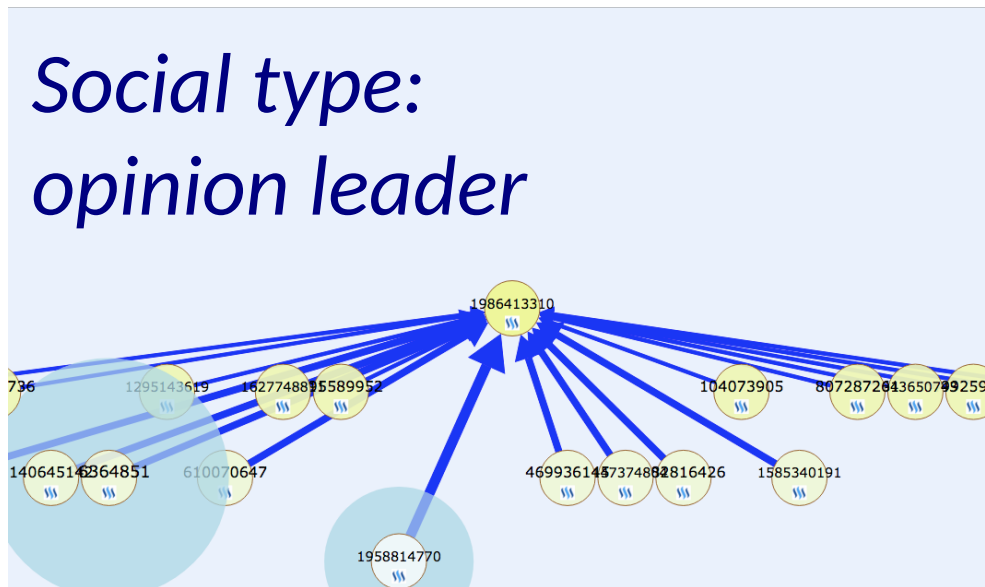
Social type: opinion leader

Social type: connector

# Case 3: Encouraging users to conduct positive and effective communications with partners while guarding users from being manipulated themselves or being offensive to others.



I connect my "virtual agent" to my social networks and communication channels and let it learn about my partners and preferences.
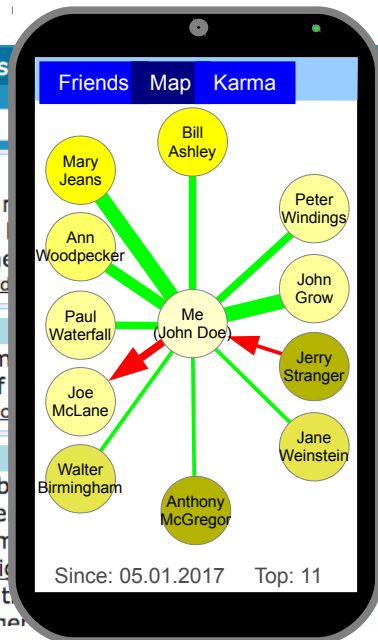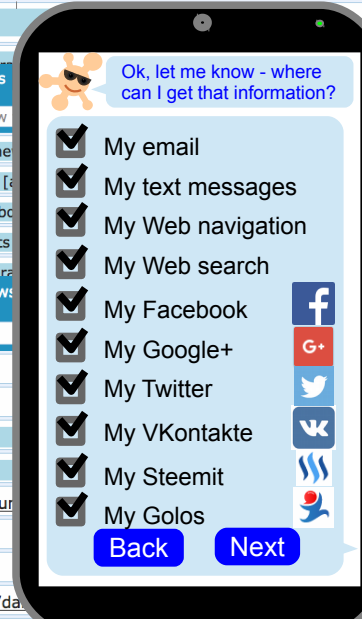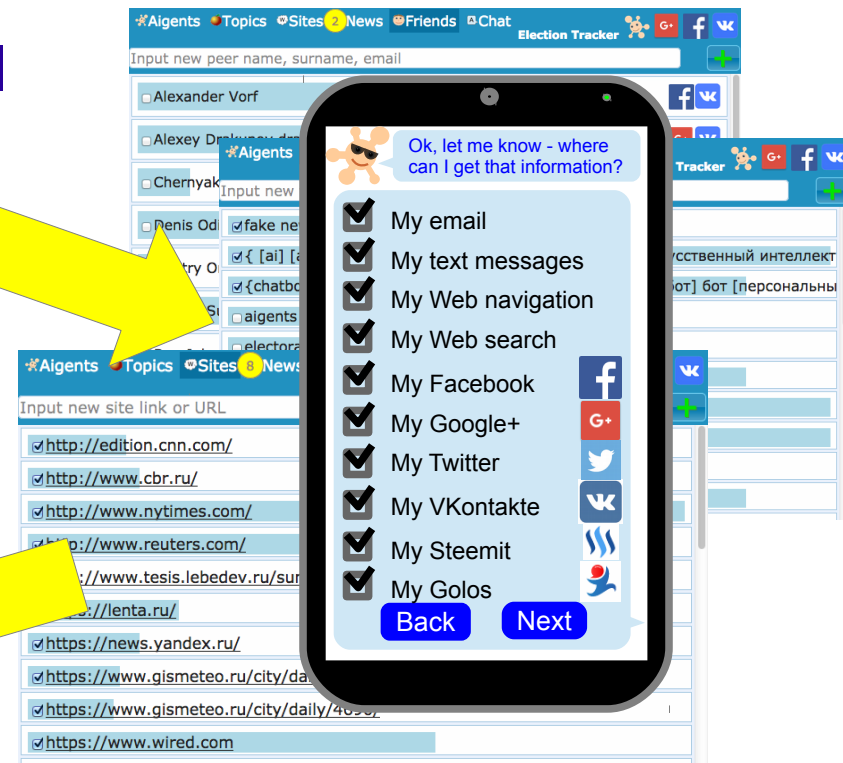
"Agent" extracts information from networks and online communications automatically, analyses all posts, comments and messages and alerts once there are important messages coming in or out – encouraging and positive or manipulative and offensive.

# Case 4: Providing "proof-of-reputation" consensus for governance in blockchain based systems, resistant to takeover and scam attacks.

## Proof-Of-Work
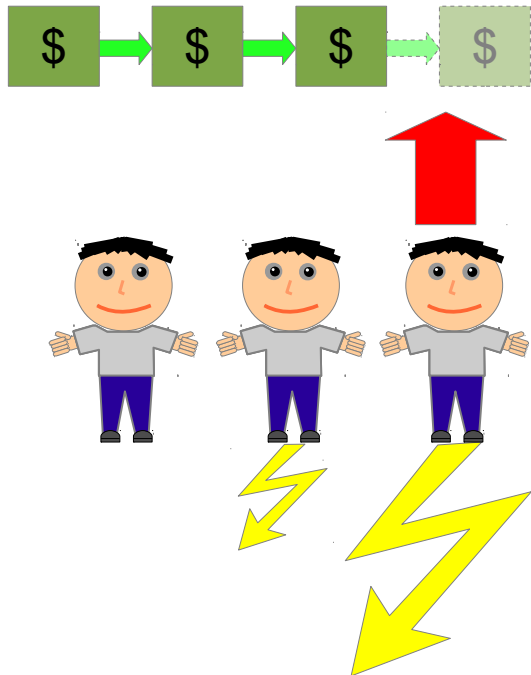


Those who own more computing power govern the network.

## Proof-Of-Stake
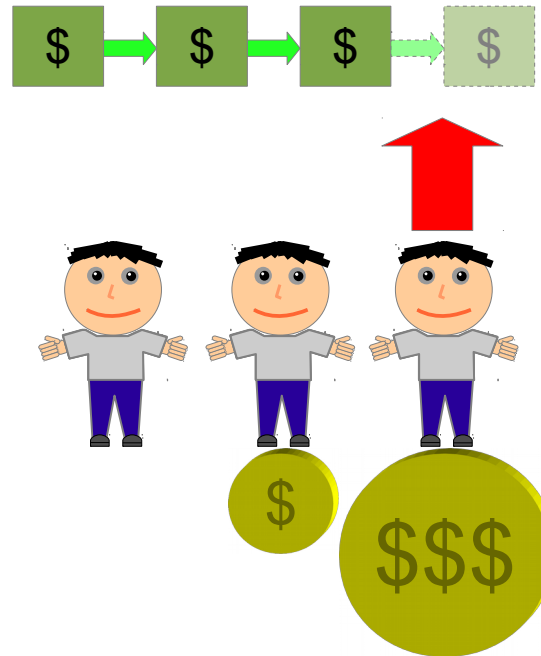


Those who have more money govern the network.

## Proof-Of-Reputation
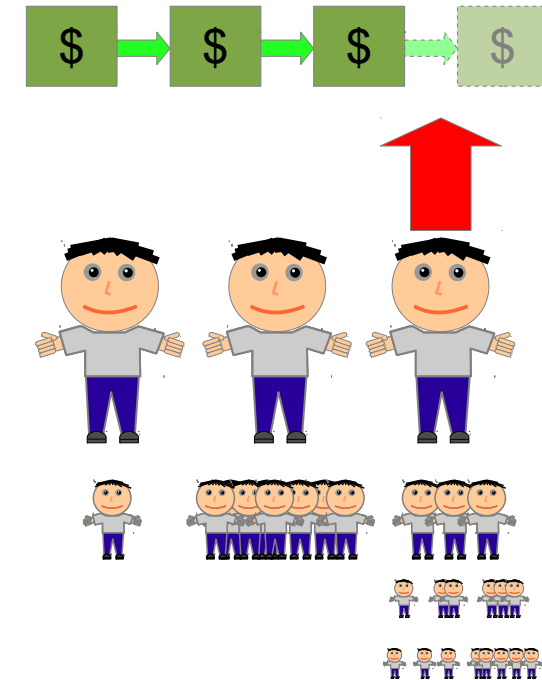


$$R_i = \sum_t \sum_j ( R_j * V_{ijt} )$$

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

# Case 5: Highly Personalized News Aggregator monitoring web pages and extracting textual information with account to Personal and Social relevances

# News Monitoring and Personal social analytics: bots at Telegram (@AigentsBot) and Facebook Messenger (Aigents)

# Takeaways

- We are parts of world-size machine, computing and redistributing attention, reputation, influence and power of brands, business and physical entities.

- The larger social graph is under control, the more impact on the world can be accessed, yet most of us lack tools of such control.

- Try [Aigents](Aigents) software for personal social analytics and help us to make it better.

# Thank you! Try demo:

https://www.youtube.com/watch?v=ORwodfAH2n0

Ethereum
Steemit
Golos.io
Google+
VKontakte
Facebook

Leader

Friend
Colleague

Every thing
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# Stay in touch:

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**Google+:** https://plus.google.com/+Aigents
**Medium:** https://medium.com/@aigents
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**Golos.io:** https://golos.io/@aigents
**VKontakte:** https://vk.com/aigents
**Facebook Messenger:** Aigents
**Telegram Messenger:** @AigentsBot