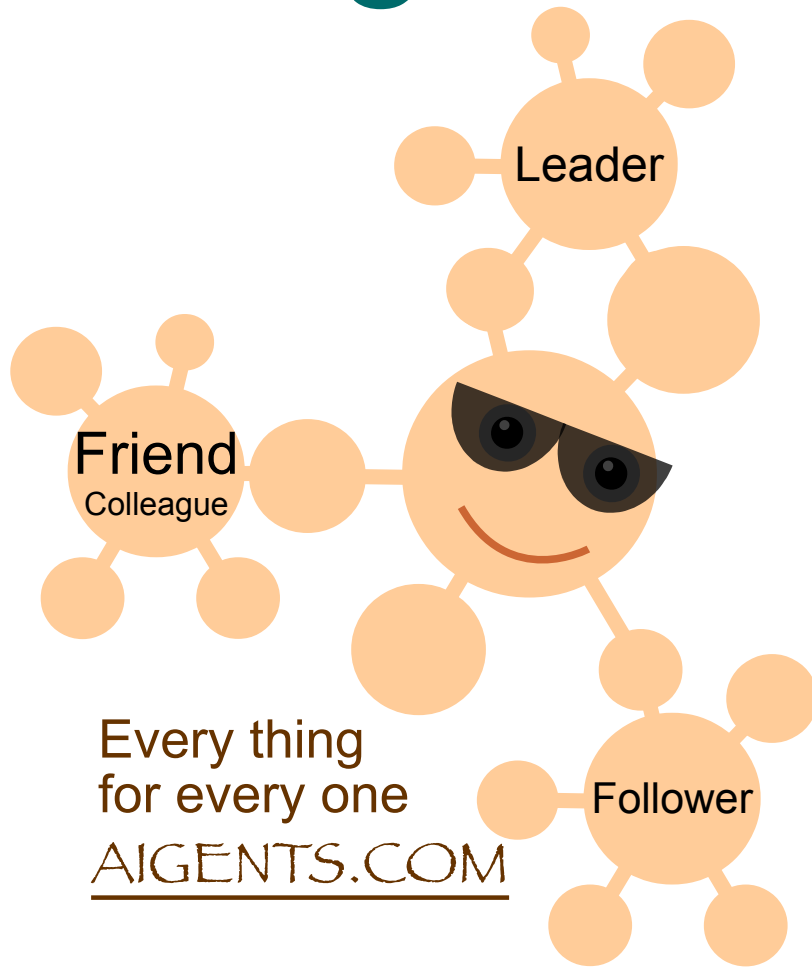


# Structuring Social Graphs using Social Network Data



with  
**Aigents**  
online  
platform.

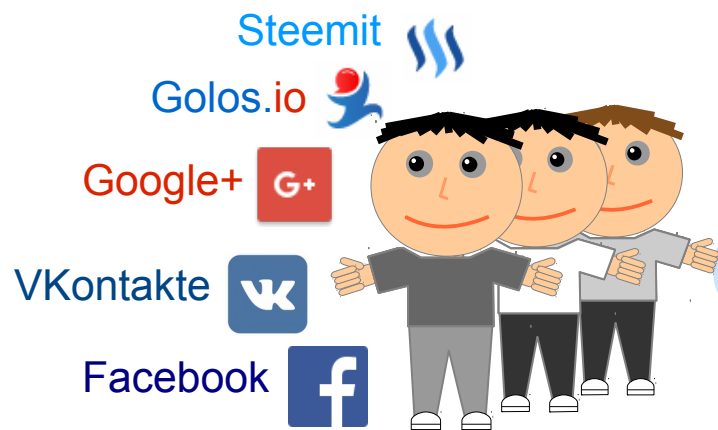
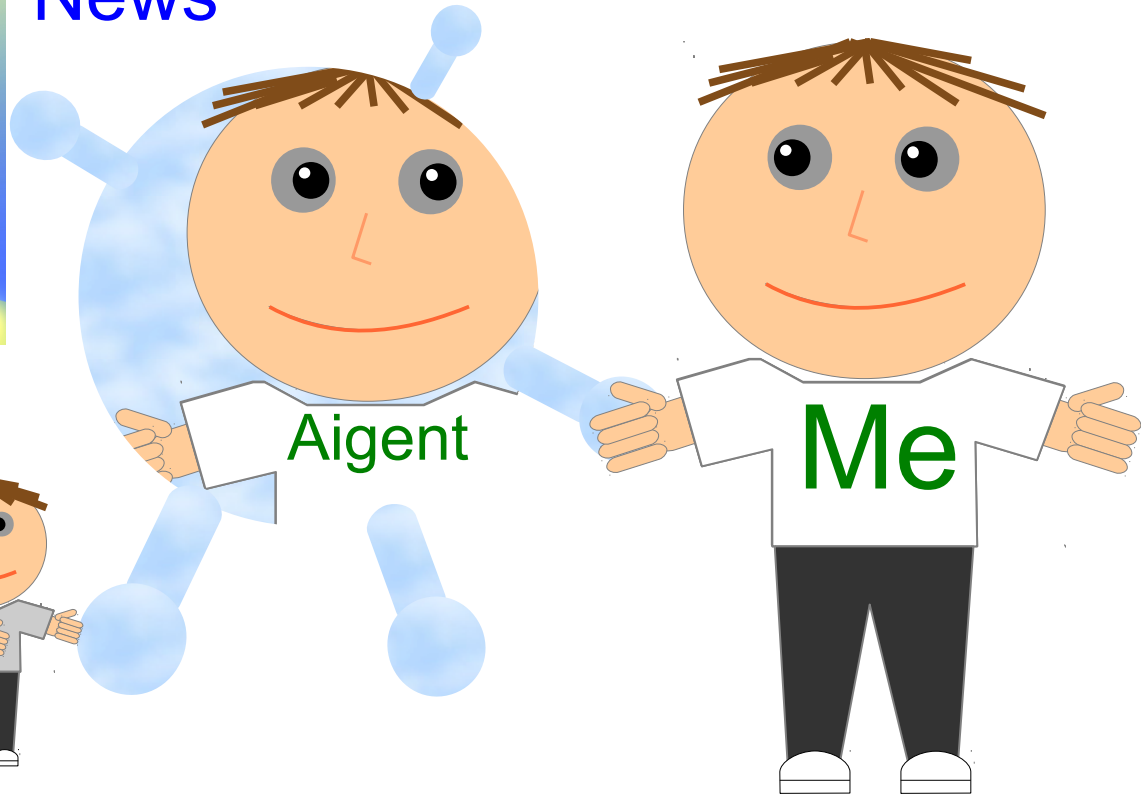
Anton Kolonin, [akolonin@aigents.com](mailto:akolonin@aigents.com)

# Personal Intelligent Aigent

serves as a “magic mirror” in the world of social and informational networks, recognizes your preferences, knows your friends and finds what you need

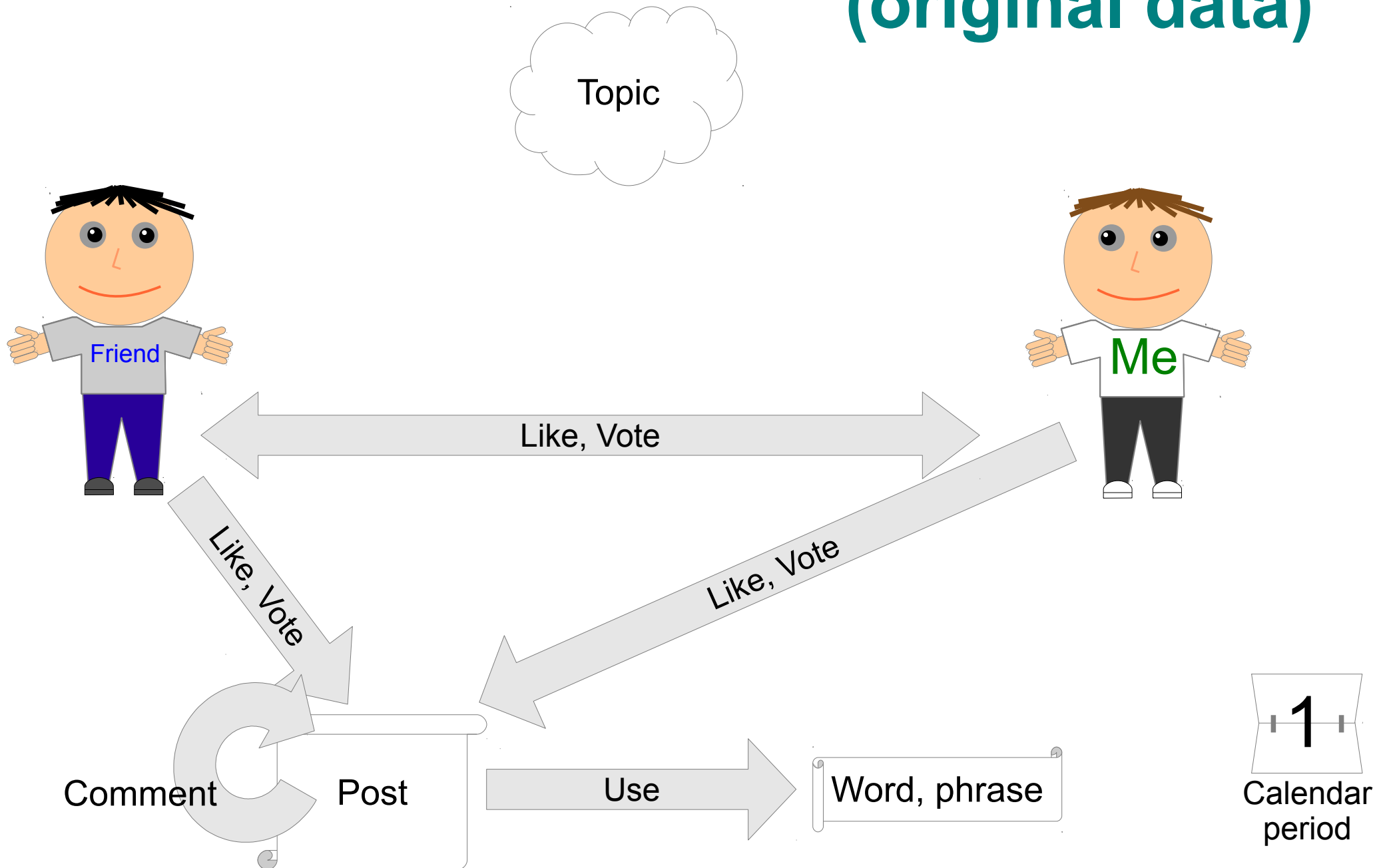


News



Friends

# Personal Social Analytics Domain Model (original data)



# Personal and social analytics - relationships

Best friends

$$B_{ij} = L_{ij} * (L_{ji} + C_{ji}) / \text{Max}_{j=1, J} (L_{ij} * (L_{ji} + C_{ji}))$$

Fans

$$F_{ij} = ((L_{ji} + C_{ji}) / (1 + L_{ij} + C_{ij})) / \text{Max}_{j=1, J} ((L_{ji} + C_{ji}) / (1 + L_{ij} + C_{ij}))$$

Like and comment me

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

Authorities

$$A_j = ((L_{ij} + C_{ij}) / (1 + L_{ji} + C_{ji})) / \text{Max}_{j=1, J} ((L_{ij} + C_{ij}) / (1 + L_{ji} + C_{ji}))$$

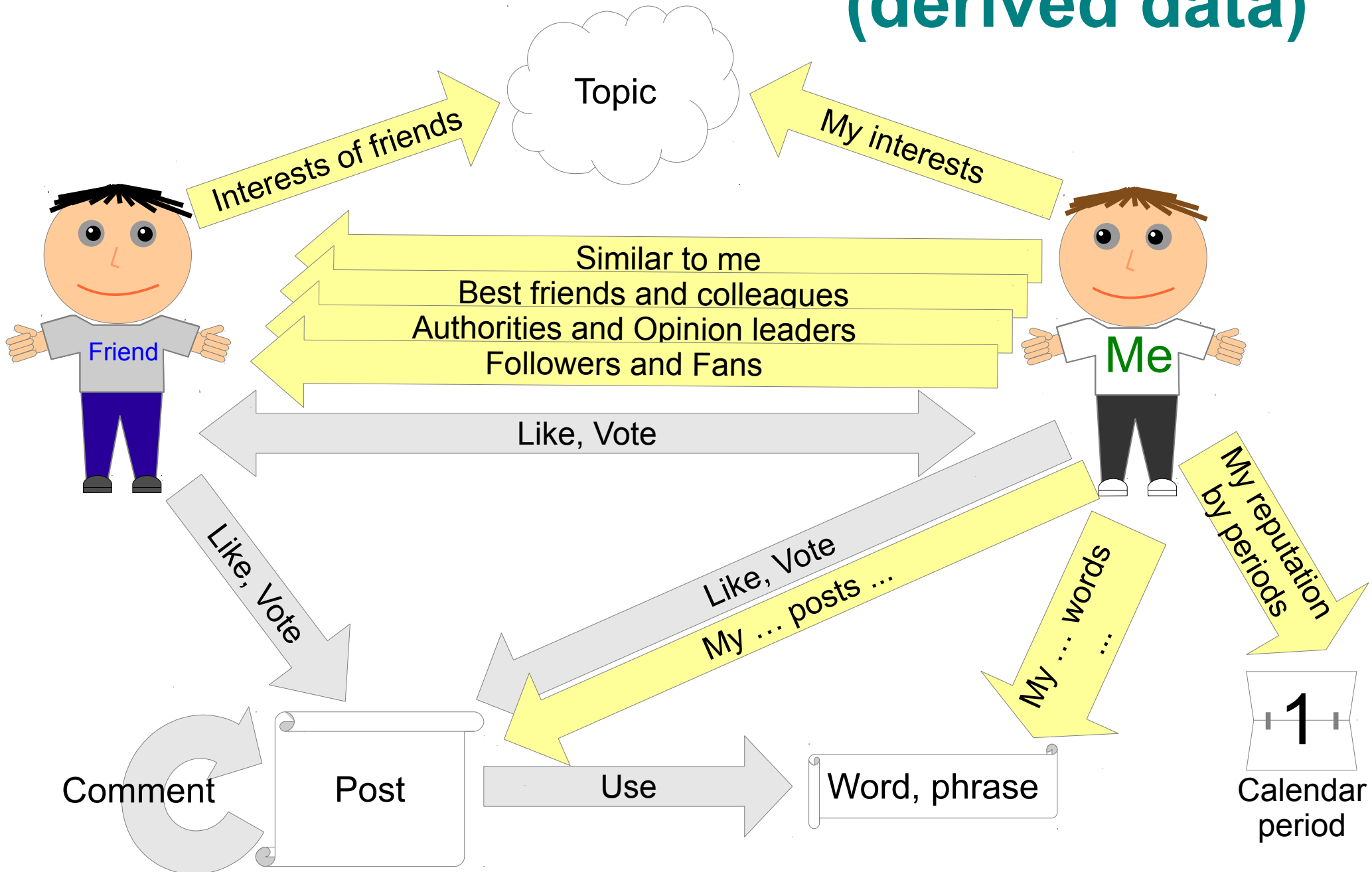
Liked by me

$$A'_j = (L_{ij} + C_{ij}) / \text{Max}_{j=1, J} (L_{ij} + C_{ij})$$

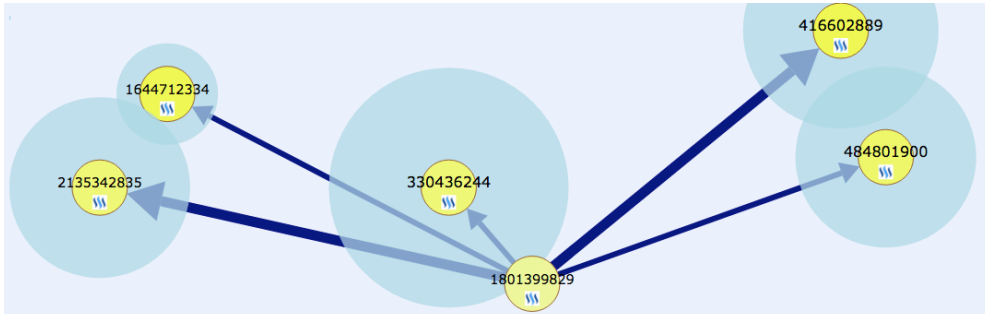
My reputation (“karma”) by periods

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

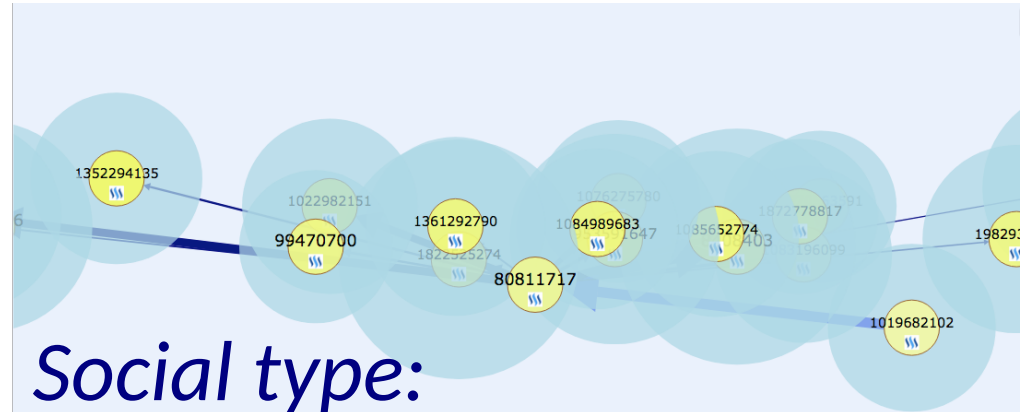
# Personal Social Analytics Domain Model (derived data)



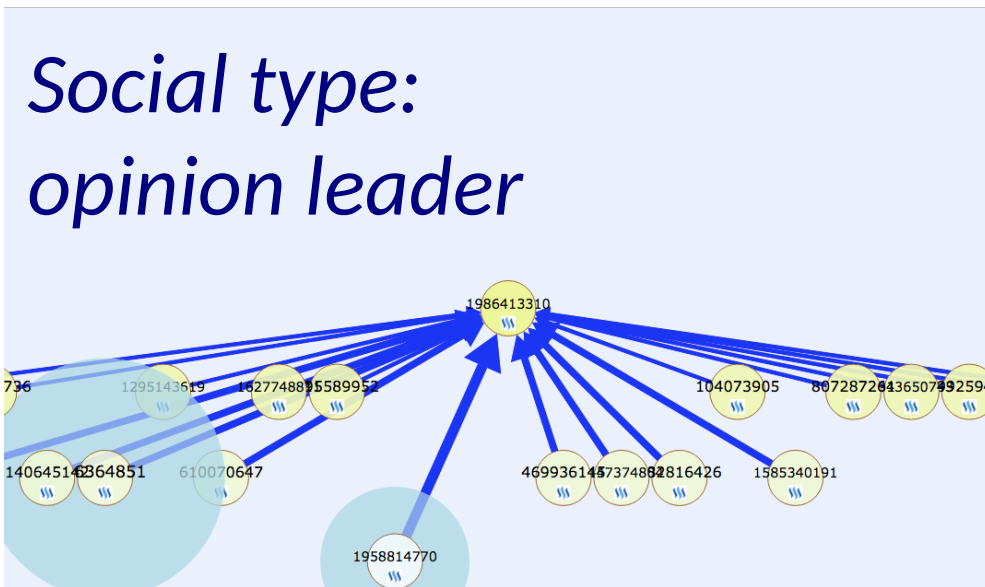
# Case 1: Helping users to understand themselves better and perform more efficiently online – using their tracks in social networks and online resources, capture their interests, relationships, communication patterns and social structures.



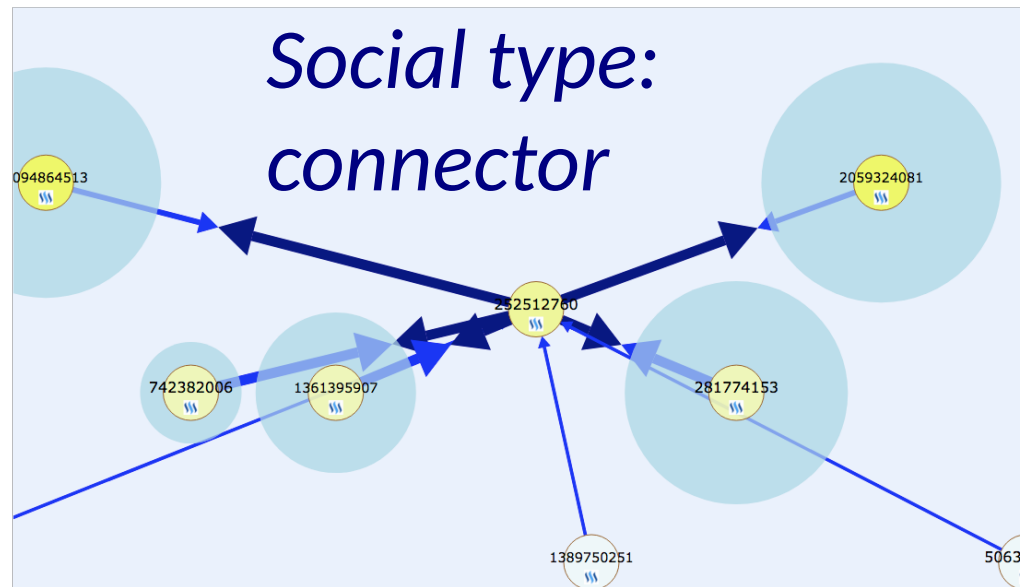
*Social type:  
follower*



*Social type:  
peer*



*Social type:  
opinion leader*



*Social type:  
connector*

# Case 2: Helping users to improve their reputation (“karma”) over time, monitoring dynamics of its change correlated with online communications, topics and connections changing over time.

## Отчет Aigents для Facebook

### Мои друзья за периоды

Период	Карма,%	Одобрения	Комментарии	Друзья
2017-09-19 - 2017-09-20	48	11	1	Madiha Liaqat Khan Joseph Anoop George Елена Трофимова Anatoly Tkachev Lyudmila Kolonina Vanya Vanchez Андрей Толстихин Ерлан Байжанов Aigents Chamara Fernando
2017-09-12 - 2017-09-19	76	12	7	Lyudmila Kolonina Misha Kolonin Елена Трофимова Artyom Art Brynn Gleb Protoporov Игорь Кондратьев Madiha Liaqat Khan Aigents Alexey Turchin Elena Romanenko Anatoly Tkachev Charles Szekeres Ольга Полунина Ерлан Байжанов Mikhail Tumaykin Joseph Anoop George Dmitry Syomin
2017-09-05 - 2017-09-12	100	24	1	Denis Odinkov Mykola Rabchevskiy Misha Kolonin Санников Юрий Gleb Protoporov Arseniy Kolonin Vyacheslav Ananyev Anna Skornyakova Cassio Pennachin Mira Kwak Anatoly Tkachev Anna Brusnitsina Serge Gluschnev Donell Almanzor Aducal Stanislav Taktaev Kirill Ankydinov Andrei Dergatchev Ерлан Байжанов Robert Tercek Ирина Карлинер Jonathan Kim Andrey Chernogorov Константин Юрченко Наталия Светашева
2017-08-15 - 2017-08-22	52	11	2	Александр Гершаник Елена Трофимова Misha Kolonin Anton Lobastov Evgeniy Pavlovskiy Андрей Толстихин Arseniy Kolonin Aigents Joseph Anoop George Андрей Исаков Евгений Дубровин
2017-08-08 - 2017-08-15	92	15	8	Piaget Modeler Lyudmila Kolonina Yury Nebieridze Joseph Anoop George Misha Kolonin Denis

## Отчет Aigents для Facebook

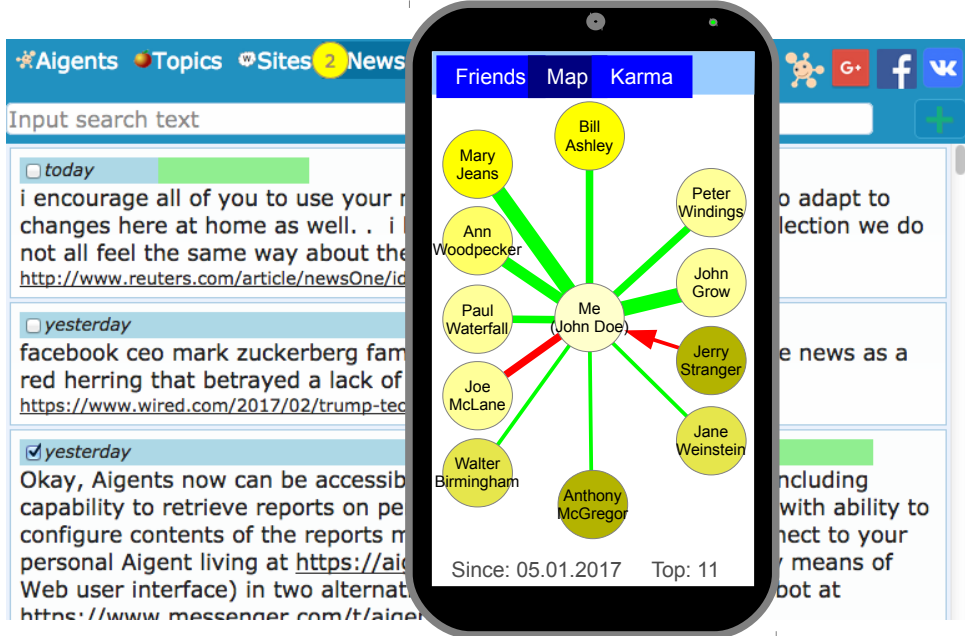
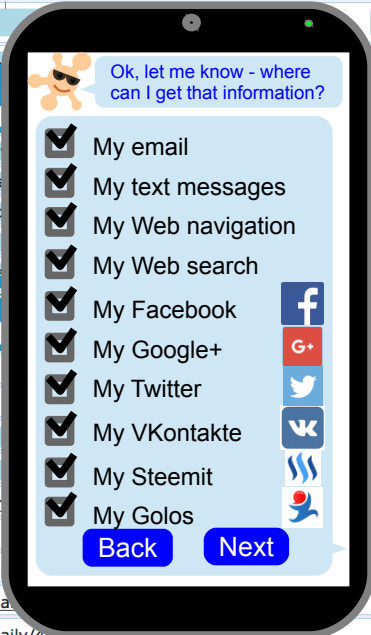
### Мои слова за периоды

Период	Карма,%	Одобрения	Комментарии	Слова
2017-09-19 - 2017-09-20	48	11	1	presentations along political recognizing project research demonstrations contributions a
2017-09-12 - 2017-09-19	76	12	7	networks epidemic dynamics temporal concurrency concurrency-induced i susceptible gleeson ice lett source good high whats neighbors contact infections theoretically dynamic dramatically different results given rev static tomokatsu effects guys i
2017-09-05 - 2017-09-12	100	24	1	temporal networks sampling biases network department namur institute bristol real-life variety statistics data results mathematics sampled tokyo better strategy increasingly japan scenarios rhodes improved number sweden four model spatial
2017-08-29 - 2017-09-05	0	0	0	hmns machines networks systems people review current designing types identify social online humans increasingly s resource crowdsensing take markets daily systematically virtual mass interact media network interactions alone computing producing design multiplayer successful previous technology concentr
2017-08-15 - 2017-08-22	52	11	2	personal analytics anyone social category image video row st learn th online data voting c
2017-08-08 - 2017-08-15	92	15	8	social bica conference cognitive capital layers society relationships aligned proceedings being feature karma agents av end whuffie internet week interactions nor operations intended now perceptual human reporting krueger over stories multiple yet steemit control room artificial neither approached coming sitting all ean
2017-08-01 - 2017-08-08	96	15	9	whuffie currency science conference karma bica doctorow acts twitter model political good create others given idea money user gift relayly quicky cons
2017-07-25 - 2017-08-01	28	5	2	east business future golos comes steemit model
2017-07-18 - 2017-07-25	16	4	0	different conference moscow widgets view connectivity corner similarity top-left periods let meet

# 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.

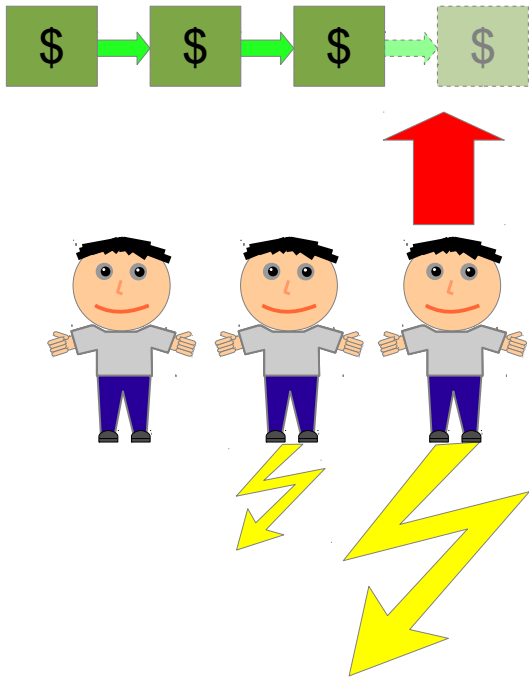


“Agent” extracts information from networks and online communications automatically, analyses all posts, comments and messages and alerts once there are important messages coming in or out – encouraging and positive or manipulative and offensive.



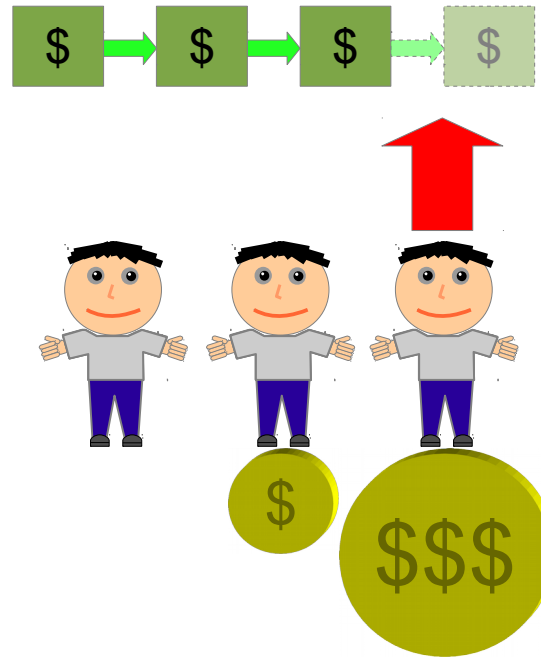
# Case 4: Providing “proof-of-reputation” consensus for governance in blockchain based systems, resistant to takeover and scam attacks.

## Proof-Of-Work



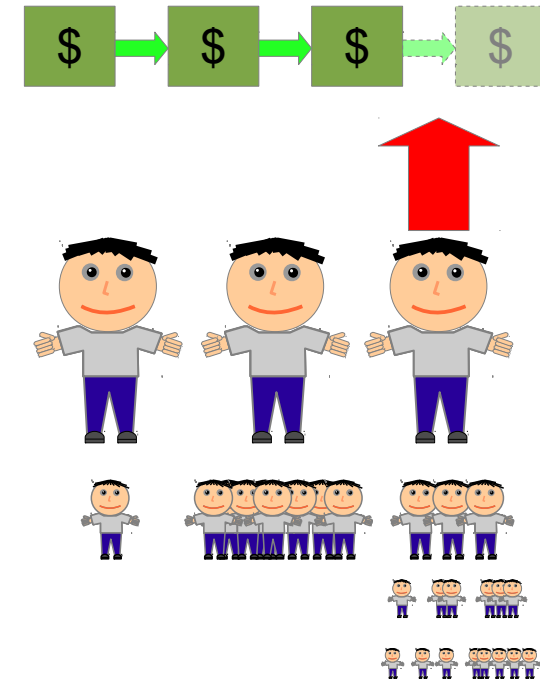
Those who own more computing power govern the network.

## Proof-Of-Stake



Those who have more money govern the network.

## Proof-Of-Reputation



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

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

# Thank you! Try demo:

<https://www.youtube.com/watch?v=ORwodfAH2n02>



## Stay in touch:

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**Site:** <https://aigents.com>

**Facebook:** <https://www.facebook.com/aigents>

**Youtube:** <https://www.youtube.com/aigents>

**Google+:** <https://plus.google.com/+Aigents>

**Medium:** <https://medium.com/@aigents>

**Steemit:** <https://steemit.com/@aigents>

**Golos.io:** <https://golos.io/@aigents>

**VKontakte:** <https://vk.com/aigents>

**Facebook Messenger:** [Aigents](#)

**Telegram Messenger:** [@AigentsBot](#)