Social Capital Accelerator - the onchain experiment to address current super app limitations

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Abstract: In this paper, we explore Faceblock's practice to facilitate people to conduct business using a blockchain system to measure and identify those who add value to the network, therefore accumulating their social capital which is rewarded by Fb on PoAI chain. We also utilise the Social Exchange Theory (SET), which is a framework to comprehend how organizations measure and manage their social capital. Two distinct types of platforms are discussed: the super app WeChat (mainly on its limitation, and why Wemerchants behaved aggressively), and the operation of Fb as a decentralised alternative since ~2017.

NB: the third author Zhengtian is the founder of Faceblock

1 Overview

The Role of Social Capital in Business

Social exchange theory is an important framework to understand how organisations can measure or manage their social capital. It suggests value is created during communication and interaction, these communications depend on people's action, and

will shape the future actions. (Cropanzano and Mitchell, 2005) We will use this framework to explore how social capital is used mainly in two kind of platforms to facilitate business: namely the super app Wechat with 1.26 billion monthly active users (Lin 2023), and the social capital accelerator Faceblock (author Frex's startup)

To try to understand the intricacies of the social capital exchanges/accelerators that are emerging, let's first understand the concept of social capital in business. It refers to the value derived from social networks, or relationships, which enables individuals, and organizations to cooperate for mutual benefit. It's about trust, participation, and shared values that create quality relationships and foster cooperation.

In the business context, social capital is used to gain access to resources, information, and support. It's an asset that, when managed well, can lead to finance gain or social status change. Thus, understanding its importance, business leaders are seeking ways to accelerate the accumulation of social capital.

In the FaceBlock system introduced in section 3,we measure social capital as the records of quantifiable value of people previously interacted with the network, or if we treat users as Liquidity Providers, we simplify user A's social capital measured:

$$LP(A) = \frac{Sum(Value\ of\ Previous\ Input)}{Count(Previous\ Input)} \cdot \frac{Sum(value\ received\ from\ network)}{Sum(Value\ requested\ to\ network)} \cdot TD$$

$$TD = TimeDecay(Present\ Time,\ Activity\ Period)$$

In the system implementation, how to detect the quality and quantity of input is a non-trivial issue. **We hope to trigger more thoughts and better implementations by sharing our practices.**

2   Current social capital repositories - Wechat example

As the dominating Chinese community social media and peer-to-peer commerce is facilitated by the super app Wechat. (Corporates use WechatBiz and Ding, mass video e-commerce utilises Douyin(TikTok is its overseas version), we will use Wechat for discussion, and mainly address its limitations for aspiring people (often with limited money ascapital, therefore their default choice is to use wechat by accumulating new leads and word-of-mouth i.e. social capital at low or no cost)

2.1   Data Consensus

The social capital accumulation or business activities that can be tracked in computer networks, using Instant Messengers as an example, often depends heavily:

Table 1. Forms of social capital accumulation on Instant Messengers.

Action	Wechat Example	Note
Money Transfer	Wechat direct transfer of ¥ 2000	
File transfer	Draft agreement of purchase order	
1 : 1 chat	Discount discussion	Not available across device
Group chat	Daily bunting	History not available to new joiners
Testimonial	Showing off orders delivery	

Unfortunately, one of WeChat's design features significantly inhibits new joiners from accessing this data. When a new member joins a WeChat group, the group's conversation history is not available to them. They can only view and interact with messages sent after their joining date. Consequently, the insights, discussions, decision-making processes, and essential context embedded in the group's previous interactions are lost to them. This creates an asymmetry of information and can lead to misconceptions, reduced engagement, or decision-making based on incomplete data.

Commercial project participants can move in and out from a group chat due to a multitude of factors like business changes, shifting roles, or the natural turnover of a community. WeChat's design fails to accommodate this reality adequately.
The inability to access historical chat data for new joiners hampers cooperation as history is not available. This issue becomes increasingly pronounced in larger DAOs, where new members join at different stages of a project or conversation.

Additionally, the absence of historical group chat data may disincentivize prospective members from joining the group. Understanding the group's dynamics, context, and previous conversations can be crucial for prospective members to gauge their potential fit and the value they might derive from the group. The lack of this information could dissuade them from joining, leading to missed opportunities for both the individual and the group.

Data Volatility across Devices

WeChat's data volatility, where chat history isn't preserved across devices, further hinders its ability to facilitate sustained and robust business conversations. In a world where individuals frequently switch between devices or upgrade to new ones, the risk of losing access to valuable conversations and information can disrupt communication continuity.

This limitation becomes particularly problematic in situations where historical conversations are required for reference or decision-making. The inability to access past information could lead to miscommunication, misinterpretation, and errors in decision-making. It can also slow down the speed of business operations as team members scramble to find or recreate lost information.
(Users may have to resort to cumbersome workarounds, such as manually saving important conversations, using PC-based wechat to backup. But not many users doing this

Consequences for Social Capital

These WeChat design features limit its potential as a platform for building and maintaining social capital. The data access hurdles for new joiners and data volatility across devices can impede the development of trust, shared understanding, and mutual benefits that are vital for social capital.

Furthermore, these limitations can disrupt business operations, lead to a loss of crucial information, slow down decision-making, and decrease overall productivity. They can also deter potential new members, limiting the growth and diversity of business networks.

In conclusion, while WeChat offers valuable features for communication, its limitations in terms of group chat history and data volatility create significant challenges for leveraging it as a robust platform for depositing and nurturing social capital. Businesses aiming to build and sustain valuable networks and relationships need to overcome these challenges.

2.2 The justification of 'spamming' Moments to accumulate social capital

Here we provide an argument and justification for Mochants or Wechants (Wechat Moments Merchants) who seemingly spam 'Moments' (similar promotion messages, order delivery and user testimonials, repeated multiple times say daily or within a day) has its purpose.

The 'Moments' feature on WeChat has grown to become a vital tool for merchants to communicate with their target audience. It functions like a news feed where users can share updates, pictures, videos, and links. For WeChat Merchants (Mochants), it's a marketing channel that offers broad reach and visibility.

And for social capital, this is the only venue in Wechat where the global history is visible to all users that are connected. If two customers are connected to each other, one can always see the other's comment to any merchants they both connected.
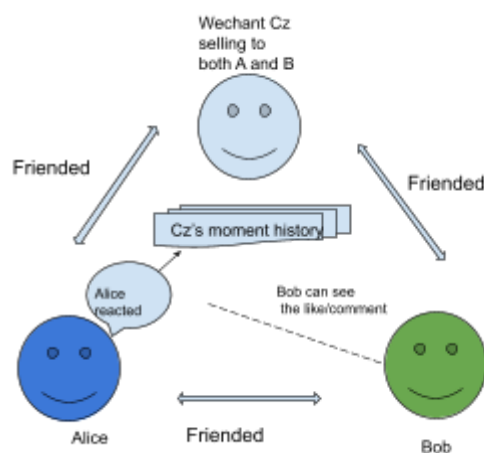

Fig. 1.   Social capital accumulation on the only visible place - Wechat Moments

Therefore, 'Moments' spamming — the practice of posting multiple updates within a short period — is indeed a strategy employed by some Mochants. The rationale behind this approach is the globally visible history that 'Moments' provides. Unlike group chats, 'Moments' are visible to all of a user's contacts, creating an expanded platform for business promotion.

According to the SET theory, this also reduced the cost in maintaining a multi-edge network.

Why 'Moments' Spamming Works

In the transitory world of WeChat group chats, where new joiners cannot access history and old data disappears with a device change, 'Moments' offers a permanent and accessible archive of posts. It becomes a sort of 'history bank' that users can scroll back through, allowing them to revisit or discover past content. In this way, 'Moments' serves as the only feature in WeChat where content history is globally accessible, regardless of device changes or the timing of contact additions.

This broad and lasting visibility provides Mochants with the opportunity to maintain a persistent presence in their audience's WeChat experience. Regular posting or 'spamming' ensures their content stays fresh in their audience's 'Moments' feed, reinforcing brand awareness and potentially driving more interactions and transactions. The cumulative impact of these interactions can help build a brand narrative over time, giving followers a sense of the merchant's evolution and story.

Despite its potential drawbacks, the 'Moments' feature in WeChat provides an indispensable solution to the data volatility and access issues of the group chats. It enables Mochants to maintain a constant presence in their audience's WeChat experience, improving brand awareness and engagement.

3   Exploring Social Capital Acceleration Practices: A Case Study of Faceblock

Here we illustrate the evolvement process of FaceBlock, the social capital accelerator started from ~ 2016 (Tang, 2020)

3.1   History and Business Model of Faceblock

Between 2016 and 2019, mainly running on Wechat(95%) and Discord (5%),

License Model of our public goods:

The main platform (Faceblock.io, launched 2019) is estimated to have used about 500 man days to develop. The codebase has an advanced version and a community version open sourced. Fb is a cash burner so far, but is the engine of all Hui (social trust score) flow and business connection. The content is mainly in a relational database, and the Hui points system is built by an enhanced variant of the Stella chain.

There are 3 types of participants: Core group, Community participants, External casual attendees of activities, shown in Fig.2 below:
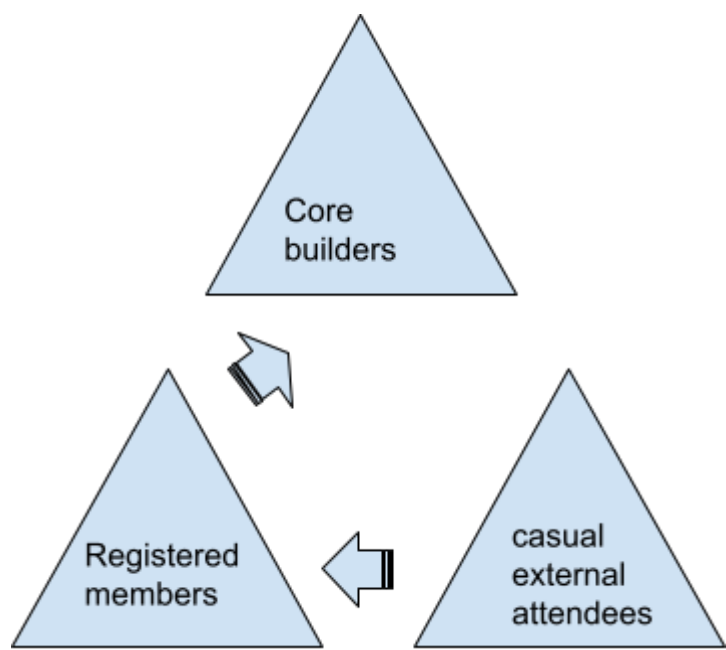

Fig 2. Class transition within FaceBlock users

3.2   Economic Aspects and Social Trust Score (Hui) Model

Yuan(缘 - literal meaning - predestined relation) is the SBT mapping of a user's social assets, it is non-transferrable by nature.

Currently it has these types of components:
- mirrored reputation or migrated connections from Wechat or Weibo etc.
- Hui (governance token) transfer and usage
- Monetary records
- Negotiations, signed agreements, Invoices
- Public group chats with public reactions
- Private 1:1 message
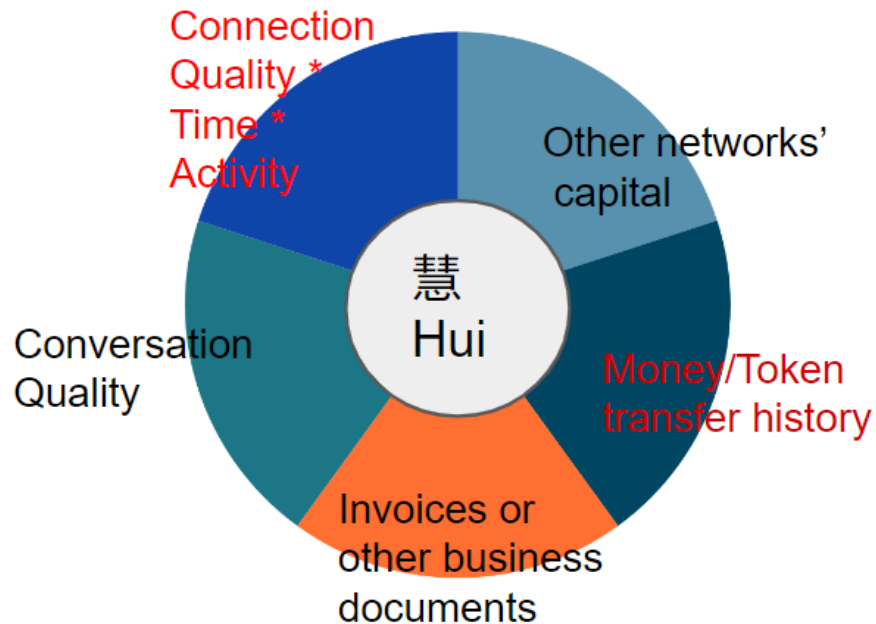- Time factor (e.g. the time length between the first and last chat between 2 person)

Fig 3. Hui's index method

Higher Yuan that is relevant to a particular user group or semantic labels (health, start-up, art, philosophers for example) will allow the user to gain more trust from the group, therefore easier to carry out new projects with the group

Cohort-based secure social capital guarantee: Fb has a mechanism of summarising the most frequent x contacts (currently set to 5 or 0) to be the Yuan credit score that is visible to all (if less than 5 contacts then no indicator).

3.3 How Hui works to facilitate user cooperation

Trust is one type of prediction to future behaviour, in order to facilitate trust between people physically far away from each other, Fb X protocol provides a practical way to measure users intention + ability.

Hui(慧, literal meaning - wisdom) is the incentive that emitted to a user to appreciate his contribution to the network. It's like the income statement rather than the balance sheet of one's social capital.

Hui can only be generated through 2 mechanisms:

1) social mining - first invitation generates 4096 Hui, next invitation halves until reduced to 1.

2) IP mining - the new intellectual property (research paper, repo, best practice, art work etc) will be minted as NFT, and get rewarded in Hui when used by your social network

Hui reward of each invite halves: 4096   2048   1024   1

1. **Alice** invites **Brian**, generates 4096 Hui
2. **Brian** invites **Cz**, generates 2048 Hui
3. **Cz** invites **DO**, generates 1024 Hui
   .
   .
12. **Gary** invites **Yellen**, generates 1 Hui

Fig.4. Hui generation mechanism

After users submitted their intention to a task, and their capabilities are measure through Yuan and Hui, then these data enters a matching pool:
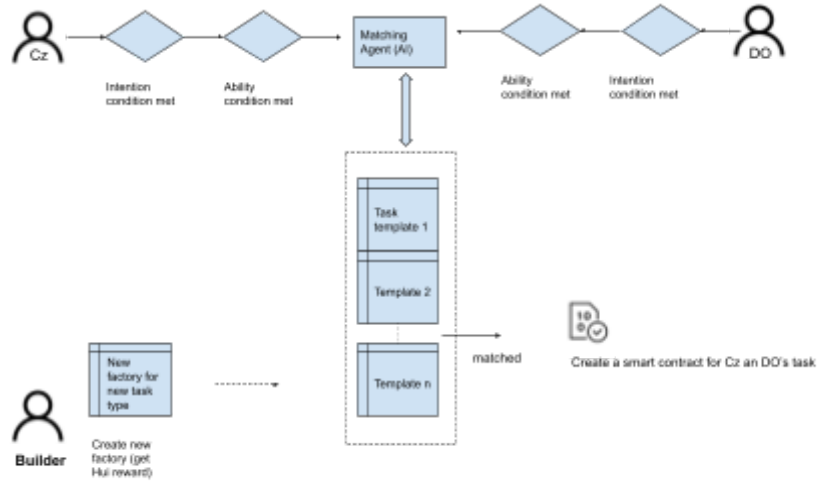

Fig. 5. How a task smart contract is created

The AI match agent will evaluate the graph data, and once matching is found, then create a smart contract to start the execution of online activities.

Evidence of this method's benefit: (People who are matched using this method, then they are more willing to pay a premium for the cooperation)

3.2.3 compare to other business social platforms:

LinkedIn, for example, has a robust networking platform that allows for professional connections and networking. But it only computes the number of common connections, without considering the quality of the connections, therefore we argue the Yuan method can better match users based on their common interest for future actions.

4 Summary

This study argues that Fb's Yuan&Hui method offers a superior match of users based on reliable past actions for future actions, compared to basic social capital platform Wechat or traditional professional networks like LinkedIn. We revealed in our (small sample) experiment that people matched using this method are more willing to pay a premium for cooperation, proving the effectiveness of this approach.

References

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