

Design Suggestion: A Financial App with Multi-Layered Collaborative Financial Intervention System

JIWON KIM, KAIST (Korea Advanced Institute of Science and Technology), South Korea

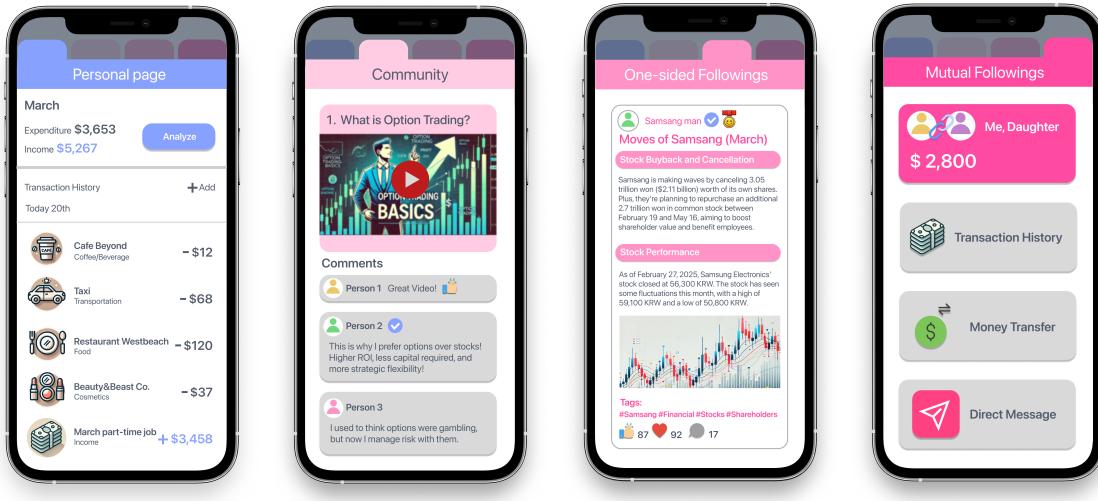


Fig. 1. Example mobile interface of suggested application

This research proposes a social digital finance application to make financial services more accessible to the financially excluded. The application integrates financial transactions and multi-layered financial collaboration with three main features: First, a community-based learning space that enhances financial education and inclusion; second, a one-way following system designed to enable users to obtain information about specific investments of interest based on anonymity and trust in the platform; and third, a mutual following system that supports opening joint accounts and direct messaging between trusted users. This study clarifies its differentiation from existing social digital finance platforms by addressing accessibility for the financially excluded.

ACM Reference Format:

Jiwon Kim. 2025. Design Suggestion: A Financial App with Multi-Layered Collaborative Financial Intervention System. In *Proceedings of Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems (CHI'25)*. ACM, New York, NY, USA, 5 pages. <https://doi.org/10.1145/nnnnnnn.nnnnnnn>

Author's Contact Information: Jiwon Kim, jiwonder@kaist.ac.kr, KAIST (Korea Advanced Institute of Science and Technology), Daejeon, Daejeon, South Korea.

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Manuscript submitted to ACM

| Features | Community | One-way following | Mutual following |
|------------------------|-----------|-------------------|------------------|
| Anonymity | ○ | ○ | × |
| Easy UI | ○ | ○ | ○ |
| Joint account | × | × | ○ |
| Expert participation | ○ | ○ | △ |
| Investment information | basic | specific | personal |

Table 1. Overview of three social pages

1 Introduction

Despite the rapid advancement of digital financial services, financially marginalized individuals continue to face difficulties utilizing digital finance platforms effectively. According to several papers, these challenges primarily stem from their limited financial [1] and digital literacy [2]. To address these challenges, this study turns to the structure of social financial platforms. Integrating social media elements into financial platforms enhances financial literacy by enabling users to share experiences and knowledge, fostering a community-based learning environment [3]. However, existing social financial platforms supporting support investment strategy sharing and portfolio replication [4], share transaction history between friends [5] were not tailored to financially vulnerable individuals. Therefore, this study proposes a social finance platform specifically designed for financially marginalized groups. The platform integrates financial education, exchanging information, and joint financial management while also balancing user anonymity, trust-building, and regulatory compliance to create a more inclusive financial ecosystem.

2 Proposed System

The suggested app consists of three distinct collaborative layers, each designed to support different levels of financial participation. The user interface presents information in large component sizes and prominent colors, ensuring accessibility for users with low digital literacy. The simple tab-based design improves usability, making it easier for financially marginalized individuals to navigate and participate in collaborative financial activities.

2.1 Community: Learning basic financial information with intuitive user interface

In the community section, users learn basic financial concepts, including fraud prevention and loan programs for people in financial hardships designed for financially marginalized users. Tutorials, introductory guides, and step-by-step financial learning missions help financially vulnerable individuals build foundational knowledge. Learning materials, primarily reviewed by financial experts, include easy tutorial videos, visuals, and articles. Financial experts actively participate in the platform to enhance trust. In this proposed app, verified experts receive a badge next to their nickname after authentication using workplace certification, preventing false claims of expertise. Users anonymously ask questions in the comments section below the tutorials and receive responses from experts and experienced users. They also leave reviews and participate in discussions. Educational content is regularly updated and accessible to all users. User interaction is limited to commenting, ensuring a focused and reliable learning environment.

2.2 One-Way Following: Weak cooperation via exchanging investment information

The second section facilitates access to specific investment insights through a one-way following system. Unlike the "Community" section, which provides general financial knowledge to all users, this section delivers specialized financial information from experts or other users. Subscribed posts appear in a personal feed, with the algorithm occasionally

displaying posts from unsubscribed users. Consequently, each user sees a unique feed in this section. Anonymity is guaranteed to encourage open discussions on sensitive financial issues. The platform implements a reliability score system to address the risk of misinformation fostered by anonymity. Users press "like" and comment on posts, while financial experts assign scores based on the credibility of the post. These interactions influence the reliability score and the post's visibility, with highly rated posts and users appearing at the top of the feed. Experts receive advertisement revenue compensation, proportional to their reliability scores and engagement levels. Reliability scores are reviewed quarterly, and top contributors earn a badge next to their nickname. Misinformation and off-topic content are strictly moderated to maintain a credible financial community. An AI-powered filtering system flags false information, detects profanity, and cross-references financial articles. Reported posts undergo both AI and human verification before the final evaluation. Users who repeatedly spread misinformation or received low trust scores face permanent posting restrictions. Users should tag specific companies, investment products, or economic indicators when posting to ensure content relevant. The filtering system verifies content alignment based on these tags and cross-references posts with financial reports. Compared to the first tab, the one-way following system allows for greater engagement through likes and subscriptions. However, it does not support deeper interactions, such as private messaging, which is available in the "Mutual following" section.

2.3 Mutual following: Strong cooperation via collaborative financial management

Mutual following eliminates anonymity and facilitates a deeper level of financial cooperation. To establish a mutual connection, users must complete a customer identification process. Once verified, they gain access not only to each other's posts but also to a secure, end-to-end encrypted direct messaging feature. This messaging function enables the safe exchange of sensitive financial information, allowing users to seek advice or resolve concerns in a private and trusted environment. Conversations are initiated by clicking on specific services within the app or by tagging comments to pose questions. Verified users may also create and manage a shared budget through a joint account. For instance, a digitally unskilled and financially dependent mother may open a joint account with her daughter to conduct essential financial activities. Even in cases where one party has declared bankruptcy and faces restrictions on personal accounts, access to a verified joint account can serve as a vital safety net during times of hardship. All deposits in such accounts are subject to a modest cap (e.g., approximately equal to the average monthly income in each respective country), aligning with the platform's primary goal of supporting the financially excluded rather than facilitating high-risk investment. Adding new members to a joint account requires unanimous consent from all existing members, ensuring transparency. Accordingly, customer verification procedures are enforced, along with compliance to Anti-Money Laundering (AML) obligations that require suspicious transactions to be reported to financial authorities. For example, in South Korea, individuals should verify their identity with government-issued identification [6] [7] to become co-holders of a shared account. Any suspicious activity is subject to mandatory reporting to the Korea Financial Intelligence Unit (KoFIU) under the Act on Reporting and Use of Specified Financial Transaction Information and the Electronic Financial Transactions Act [8]. For additional protection, the suggested app has a mandatory seven-day holding period before the joint account transaction. This "cooling-off" period grants financial institutions time to review the account's legitimacy and stated purpose. Users are permitted to cancel the joint account without incurring any penalties during this period, including in cases where fraudulent activity is discovered. Any deposited funds are automatically returned to each participant's personal account.

3 Discussion

3.1 Maintaining experts in the system

Providing sufficient incentives to retain a group of financial experts may present a significant challenge. Even if experts are compensated through a share of advertising revenue based on their activity and trust scores, an additional revenue model may be necessary to ensure long-term sustainability. One potential approach is to provide the core service for free while offering premium features (e.g., one-on-one expert consultations) at a cost.

3.2 Limitations of AI filtering system

Given the current limitations of AI technologies, content filtering systems may not function reliably. These systems may fail to block harmful content or incorrectly restrict legitimate posts. Continuous testing and refinement are essential to enhance system accuracy and user experience. Adding human moderators to support automated filtering could offer a practical solution to this challenge.

3.3 Launching legally sensitive features

Additionally, legally sensitive features like joint account management, should be designed following country-specific financial regulations. A comprehensive and standardized compliance framework is crucial to ensure lawful operation across jurisdictions.

3.4 Verifying design ideas

User studies and the development of functional prototypes are needed to demonstrate the effectiveness of the suggested solution. These efforts may offer further concrete design insights or refine the proposed ideas based on empirical evidence.

4 Conclusion

This study proposes a social financial technology application designed to improve access to financial services for financially excluded individuals. The system offers multi-layered financial collaboration that strengthens three core areas: financial education, information sharing, and co-investment. First, an anonymous, community-based learning space allows financially marginalized users to acquire financial knowledge in a trusted environment, promoting financial literacy through interaction with experts and peers. Second, a one-way following system enables users to access and share targeted investment information without disclosing personal identities. Third, a mutual following mechanism supports joint account management and encrypted direct messaging, fostering safely supported financial engagement. Together, these features create an inclusive digital ecosystem that empowers financially marginalized populations to safely and confidently participate in digital finance services.

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Received 28 February 2025; revised 20 March 2025