Let's Chat in Alipay: Understanding Social Function Usage in Task-oriented Apps

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ABSTRACT

Recently, many mobile apps start to incorporate social functions into their design, even for the *task-oriented* ones, *i.e.*, those designed mainly to help users complete certain tasks. For instance, Taobao, a shopping app, includes online-sharing and instant-messaging functions. However, there is still lack of research on how the users accept and use these social functions. This paper aims to unveil the user requirements on the social functions in task-oriented apps, and accordingly provide design suggestions for app developers. To this end, we conduct semi-structured interviews with 16 participants on how they use instant-messaging functions in three widely-used task-oriented apps,

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the shopping app Taobao, an online payment app Alipay, and an entertainment app NetEase Cloud Music. Our findings demonstrate that the instant-messaging functions in these apps are not widely accepted, although they benefit user experience and facilitate users' online social activities. We show that both the design and the users' stereotype towards the apps are important reasons. Finally, we suggest several design guidelines.

KEYWORDS

Social Functions; Instant Messaging; Task-oriented Apps

INTRODUCTION

It is a recent trend in the mobile app industry where many apps, *e.g.*, Venmo, Alipay, Taobao, and Headline, have incorporated social functions in their core features. For example, Alipay, an online payment app with over 870 million users, provides instant-messaging and online-sharing functions to its users. This is not a rare case: Among the top 10 popular free apps in Google Play[1], seven apps contain social functions.

Adding social functions has become an important design consideration to *task-oriented apps*, *i.e.*, those apps whose main functions are not social network-oriented, but to help users complete certain types of tasks [4]. Incorporating social functions into task-oriented apps may benefit user experience. For example, it allows a user to interact with other users without requiring to switch to a social media app. However, social functions are not free. From the app development perspective, additional efforts are required to design, develop, and maintain these additional functions. To the users, the apps will be more complicated, which possibly deteriorates user experiences in turn, let alone the security attack surfaces incurred by the new functions [8]. Therefore, it is important to study users' acceptance of social functions in task-oriented apps towards a better design.

Recent scholarship in the HCI community has started exploring the usage of task-oriented apps with social functions. For example, Gui *et al.* [8] study WeRun, a fitness app including social functions. It shows that social interactions motivate users to use the core function of WeRun, *i.e.*, fitness-tracking, and fitness-tracking in turn also promotes the usage of social interactions. Caraway *et al.* [4] study how social awareness streams (SASs) are used in Venmo (an online payment app), and find that SASs have both positive and negative impacts on the usage of Venmo. Zhang *et al.* [12] study the role of social relationships in the adoption of Venmo and find the Venmo communities are very densely-connected compared with other online social networks. Acker *et al.* [1] study how transaction feeds of mobile payments support social interactions.

Existing studies focus on how a specific task is influenced by incorporating social functions and their interactions. Their findings are generally task-specific, which is not enough for understanding the social functions in task-oriented apps. We still lack a good understanding on the users' usage

[1]On January 5, 2019, the top 10 popular free apps in Google Play were *GO-JEK* (Travel), *GrabFood* (Food & Beverages), *ClassDojo* (Education), *Lazada* (Shopping), *Parents Gateway* (Education), *Words Story* (Games), *Polysphere* (Games), *MU ORIGIN 2* (Games), *WhatsApp* (Social), *Cut Cut* (Photography).

Table 1: Participant Demographics.

A1: Taobao, A2: Alipay, A3: NetEase Cloud Music

P	Gender	Age	Area of Expertise	Chat Usage
1	F	22	Finance	A1
2	F	23	English Literature	A1
3	M	22	Computer Science	A2
4	M	23	Computer Science	A2, A3
5	F	24	Information System	A1, A2, A3
6	F	26	Finance	A1, A2
7	F	32	Sociology	A2
8	F	24	After-effects Designing	A1, A2
9	M	27	Law	A2
10	M	33	Educational Training	A2
11	F	25	Architecture	A2
12	F	24	Ecology	A2
13	F	25	Economy and Trade	A2
14	M	33	Electronic Science	A2
15	M	30	Computer Science	A3
16	M	36	Computer Science	A2, A3

scenarios, purposes, and perceptions of social functions in task-oriented apps. Hence, this paper aims at identifying users' usage patterns of the social functions and unveiling the reasons of (not-)using them. We study a representative social function, instant-messaging, or *Chat*, in three widely-used task-oriented apps, a shopping app Taobao, a payment app Alipay, and an entertainment app NetEase Cloud Music. We attempt to answer: **RQ1**: How users engage with *Chat* in task-oriented apps. **RQ2:** How incorporating *Chat* affects users' online social activities. **RQ3:** Why users choose use or not to use the *Chat* functions.

METHODS

This paper studies three representative apps, Taobao, Alipay, and NetEase Cloud Music. They all contain *Chat* functions and are widely-used task-oriented apps in China. Each has millions of active users. Their core functions belong to different categories, *i.e.*, Shopping, Payment, and Music Player.

We conduct semi-structured interviews with 16 participants we recruited. Their detailed information is shown in Table 1. Participants are recruited through snowball sampling methods. They are from two universities and a church nearby. We choose users born in the 1980s and 1990s as participants for they are the mainstream users of the three target apps, Taobao, Alipay, and NetEase Cloud Music. For example, 43.4% users of NetEase Cloud Music are born in the 1990s and 33.2% in the 1980s [7]. The participants are all experienced users of social media apps (*e.g.*, intensively using Wechat, an online social media app, everyday). They are using or have used *Chat* in at least one of the three platforms. We recruit participants until reach theoretical saturation [6]. The main interview questions are listed in Sidebar 1. We also explore more user stories by extending questions according to our participants' responses. The duration of each interview varies from 30 to 60 minutes. Our interviews are conducted face to face, except that we interview one participant via telephone. All interviews are audio recorded with the consent of participants.

All recordings are transcribed into text files and then analyzed with thematic analysis method [3]. In the first phase, the third author reads each line of the transcripts, extracts key words, and thus finishes the Open Coding. The first-level codes include "rarely use it", "prefer the original app functions", and "worry about privacy leakage". In the second phase, the first author and the third author work together and conceptually abstract the first level code to generate the Axial Codes, *e.g.*, "usage pattern" and "usage scenarios". Finally, we extract the themes which can answer our research questions by Selective Coding.

- 1. Do you chat online? What apps do you use?
- 2 Do you use Taobao/Alipay/NetEase Cloud Music?
- 3. Do you know the Chat functions in Taobao/Alipay/NetEase Cloud Music? How do you know them?
- 4. Have you ever used the Chat functions to chat with friends?
- 5. In what scenarios do you use *Chat* functions of Taobao/Alipay/NetEase Cloud Music?
- 5. Do you find the Chat functions useful? If yes, in what circumstances?
- 6. Do you choose to quit using the Chat functions. Tell me your reasons.
- 7. Tell me your detailed experiences, with examples, in using the *Chat* functions.

Sidebar 1: Major Semi-structured interview questions

PRELIMINARY RESULTS AND FINDINGS

Usage frequencies, purposes, and scenarios

Participants' usage frequencies of the *Chat* functions are quite different in different apps. For `Alipay`, the majority of participants send descriptive messages to receivers every time they transfer money to them. While for `Taobao`, the usage frequency is distinct among the participants. 11 participants have never used this function. One participant uses it twice or three times a year (P2). 4 participants use it quite frequently. For example, P1 used Taobao to chat with friends about nine out of ten times. These differences are associated with their online shopping pattern. For `NetEase Cloud Music`, few people use its *Chat* function.

Participants typically chat with friends in task-oriented apps for specific purposes, including asking for friends' advice while shopping (P1), reminding receivers after transferring money (P13), and sharing with friends when listening to music (P6). These conversations take place in specific situations, *i.e.*, when users are conducting certain tasks with these apps. For example, P5 said: *"I have developed the habit of chatting with Taobao. But it happens only when I am shopping with it."* P13 said: *"When I transfer money to a friend with Alipay, I will send a message to tell what the money is about. Except for that, I never use Alipay to chat."*

For the participants who seldom chat with friends in task-oriented apps (*e.g.*, P7 and P13), the *Chat* function has no influence on users' online social activities. As mentioned by P9, "*I added several friends in Taobao, but we never talked to each other.*" Some participants use *Chat* functions in task-oriented apps to replace those provided by social media apps. P4 said: "*I thought social apps like Wechat were too time consuming. So I uninstalled them. Then I chatted in Alipay when needed.*"

The majority of our participants use *Chat* functions in task-oriented apps as supplements to their online social activities. As P6 said: *"When I did not know about such functions (like chatting), sharing (shopping) items with my friends on Taobao was a nightmare. I had to generate a link, copy it, open Wechat, send the link to my friend. I also had to leave other words to her, and then switched back to Taobao."*

Existing work [5, 11] shows that users adopt different social media apps to deal with multiple relationships, *e.g.*, working connections and personal ones. Our study extends this finding where we witness some participants use *Chat* functions in task-oriented apps to defend the invasions of unwanted new relationships. P5 said: *"Once a guy asked for my contact information constantly. But he was totally not my type. In order to get rid of this relentless harassment, I gave him my Taobao account and ask him to contact me there."* The *Chat* function also provides a channel for participants to become more intimate with friends/families. For example, P1 said: *"One day I found that a person I knew had sent me a Taobao message and suggested me a small gadget. Though we were not familiar with other, it made me feel warm and myself welcomed."*

- *Different App Ecosystems*: This work is done in China. Its specific internet development situations may affect participants' acceptance of social functions in task-oriented apps. Zhao *et al.* [13] point out *"how individuals view their existing communication ecosystem plays an essential role when making adoption decisions for new platforms."* Our findings may be not applicable to other countries with different app ecosystems. We consider a comparative work is also of interest and importance.
- *Different User Groups*: Our participants are all young adults. Since previous work finds that users' adoption of social media platforms is influenced by their ages [2], users of different ages accept social functions in task-oriented apps quite differently. Hence, usage patterns of different user groups should not be ignored. Future work could also focus on different user groups.
- *Different Social Functions*: We only study *Chat*, a representative type of social function. Since there are many different types of social functions and those are used in different situations, future work can explore users' acceptance of incorporating other types of social functions in task-oriented apps.
- *More Reasons*: A more comprehensive study on what promotes/prevents users in using social functions is of great importance to help developers optimize task-oriented app design.

Sidebar 2: Limitations and future work

Reasons for rejecting/abandoning Chat functions of task-oriented apps

Poor Design: Poor design of *Chat* functions in task-oriented apps prevents users from using them. For instance, the *Chat* function in `Alipay` only has a few emojis and stickers (P1) and does not send notifications when new messages arrive (P11). `Taobao` does not allow users to change their IDs once the registration is successful and has no group-based Chat function either (P2).

No Clustering Effect: Participants do not use *Chat* functions in task-oriented apps because transferring contacts to a new platform is troublesome, if not impossible (P3). With a small number of participants, social networks become useless (P6). Users are hard to gain new information or support (These are the main purposes for users to communicate online [9, 10]).

Stereotypes: Participants tend to classify apps into different categories based on their core features and accordingly choose the proper apps to perform certain tasks. From their perspective, `Alipay` is for online payment and `Taobao` is for online shopping (P10, P2, and P4). When the usage patterns violate participants' anticipation, they feel hard to accept them (P8, P10).

Security and Privacy Concerns: Adding *Chat* functions to task-oriented apps introduces security and privacy concerns. For example, P11 and P8 were worried about information leakage when strangers sent friend requests in `Alipay`. P8 said: *"Alipay combines too many functions together. Most importantly, it is closely-related to money. If you add too many friends, I am afraid that it would jeopardize the safety of my money and my privacy."*

DISCUSSION AND CONCLUSION

Our findings revealed that generally speaking, adding *Chat* functions has a positive influence on participants' online social activities and adoption of task-oriented apps, *e.g.*, more frequent and longer usage. However, *Chat* functions are not widely used for various reasons. Given the findings, we propose some design suggestions.

Firstly, to provide integrated services, the incorporated social functions should be closely related to core functions of the task-oriented apps, which is the key to attract more users. Secondly, we argue that adding social functions is not always necessary for some task-oriented apps. Instead, they can resort to other popular social media platforms (*e.g.*, Facebook and Wechat) by including convenient content forwarding functions. Thirdly, in designing social functions, one should be aware of the usage convention in existing social media apps. It is better to keep to the conventional interface to achieve better acceptability. Fourthly, care must be taken to achieve user-perceived security and privacy. Integrating different functions together means various sources of users' behavior data can be collected, which increases the security and privacy risks.

Sidebar 2 further provides the limitations and future work.

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