Integrating Online and Offline Community through Facebook
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ABSTRACT
This paper presents an interview study of how social network communication media, Facebook specifically, can facilitate and influence proximal communities. We investigated scenarios in which users integrated their online interactions with offline activities. We found that Facebook heightened the visibility of social identities, but that these identities are multifaceted and dynamically modulated by context. We found that Facebook broadly facilitated offline activities from proposing and planning through to report and commenting. We found that people use Facebook features differentially as they maintain strong and weak ties. Finally we discussed how social identities, social engagements, and social ties are mutually reinforcing and cultivating with the affordances of Facebook.

KEYWORDS: Proximal community; Facebook; social identity; social engagement; social ties.

1. INTRODUCTION
Ever since Putnam's famous paper "bowling alone" [21], the increasing use of technologies has usually been attributed to the decrease of local interactions, which leads to the "crisis of community". For Putnam it was television. Social network sites such as Facebook, as another example, were also criticized to alienate people from communities and public life. Closer scrutiny, however, reveals that all these primary causal relationships manifest in local interactions. It is difficult to imagine how participation in online communities does or could mitigate the problem.

From a large survey study, Wellman [29] argued that, besides decreasing social capital in communities, online activities can also increase and supplement social capital in different cases. However, how online social interactions actually influence offline community lives remains unclear.

Researchers have been studying how the Internet influences people’s life and in recent years many studies have been focused on specific web services such as social network applications. These applications provide an infrastructure for social participation in online and offline communities that facilitates user contribution, communication, and even collaboration.

Since using social network sites has become routine practices of everyday life, we would like to investigate not only how people use social network websites but also and more importantly how the use of social network websites is meaningful to the users and how these websites influence their social life online and offline in their proximal communities. In this study, we bear in mind three elements important to individual and collective life: social identity, social engagement, and social tie.

2. COMMUNITY DYNAMICS
Lyon [17] reviewed a plethora of definitions of community, noting that the vast majority enumerates three common qualities: shared place, distinctive social interaction and common ties. These three qualities are not independent, but mutually reinforcing instead. They are distinguishable theoretically, and do capture critical facets of what community is characterized for, as Nisbet [20] observed. Based on Lyon and other researchers' work, Carroll [7] proposed a conceptual model of communities, comprising of collective identity, community engagement, and network of social ties. To us these three elements emphasis different underpinnings of communities: social identities as psychological foundation, social engagement as behavioral manifestation, and network of social ties as structural depiction of communities.

2.1. Social Identity
Identities help us define who we are and give us guidelines for proper social intercourse with other people in social life. It is the most fundamental concept to community of the three. Ever since when "Gemeinschaft", the precursor of the concept "community", was discussed, Tönnies [25] claimed that the bonds of Gemeinschaft derive from personal identification based on the common place where people lived and worked. In the era of the Internet, the common place where people live and work has been dramatically extended and transformed. It is no
longer physically bounded in time and location. This transformation can give rise to new features of identity in terms of how it is formed, developed, and enacted.

According to social identity theory, identity provides cognitive, psychological and even emotional connection to individuals with the groups they belong to [27]. More or less, an active identity can provide scripts for individuals to act in a given context, for example, interacting with members of that group and members from an out group. Shared identity also gives individuals psychological ground to understand themselves and others. As Ashforth and Mael [2] pointed out, social identity helps define the self along with personal identity. Social identity also renders emotional bond that connects individuals to the collectivity, which is opposed to emotional bond between persons.

So in general, social (shared) identity fundamentally influences individuals’ well-being in social life, not only because of material benefits brought by being a member of a group, but also because of the non-material benefits such as belongingness rooted in social identity. Personal identity and role identity help define the self of people, and similarly they are ground of cognitive, psychological and emotional source of a person’s life, only working on a different level, person’s level [22].

There are many studies on online identity such as Turkle's work [26]. These work, however, focused on virtual spaces such as MUDs, where people are anonymous and identities are arbitrary. This is different from social networks (e.g. Facebook), where almost everyone uses their real name, and cannot escape their embodied selves and behavioral norms in their daily life.

Zhao et al. [31] conducted content analysis of profiles of 63 Facebook accounts, and divided users into three categories: visual (having wall posts and pictures) enumerative (having interests and hobbies), and narrative (having “about me”), according to a continuum of implicit and explicit identity claims. Similarly, DiMicco and Millen [8] investigated characteristics in Facebook user profiles including age, number of friends, number of company friends, job title, job description, job start date, number of groups joined, job-related groups joined etc., and divided users into three categories: reliving the college days, dressed to impress, and living in the business world. Hewitt and Forte [13] investigated students’ perception of their instructor based on whether they have seen the instructor's profile and whether they are connected to the instructor.

Closer scrutiny of these studies reveals that they presented a static conception of identity, grounded only in user profiles and other characteristics. As early as in 1956, Goffman in his notion of "face" asserted that individuals are attempting to influence the social situation by expressing and presenting themselves in a more flexible way to give favorable impression. [11]. We would like to view identity as a more dynamic conception of constructing self-presentations: while identities are consequences of social interactions, they are also underlying motives of social interactions, and thus are presented in social interactions [22]. Such online identity should take role in both online and offline social interactions. In our previous study [30], we found that different aspects of online identity can be enacted contexutally depending on people’s needs for assimilation and differentiation. In this study, we will move a step further to study how identities are supported and mediated by social network websites.

**RQ1: how are social identities cultivated and embodied in social interactions with the affordance of Facebook?**

### 2.2. Social Engagement

Social engagement is the commitment of a member to stay in the group and interact with other members. It can take many forms. A community is not just an aggregation of people. It has its tradition, history and culture. These elements are built throughout time and embodied in a spectrum of activities in everyday life [4]. It is virtually hard to characterize what activities can count as social engagement with one straightforward standard. In the research area of social network websites, there are few studies really digging into social engagements mediated by websites. Some studies of social engagement were reduced, intentionally or not, to website uses: how many posts had been posted a day, how many users were lurkers and how many were active users, how many emails were sent to nearby friends and how many to faraway friends, etc. It is true that intensity of activities can indicate to a degree whether a community is active, but how these or other activities contribute to the quality of social engagement and what the deeper consequences are on individual or collective wellbeing were not well studied.

To Putnam [21], a typical social engagement takes place in the form of participating in collective activities such as going to church and taking part in local sport league. These activities help reinforce and cultivate social norms, social capital and other established elements. It is reasonable that Putnam claimed that the overall social capital was decreasing in the North America from the perspective of this traditional view of social engagement, since technologies indeed add tremendous mobility to people living in modern society. Those locally engaged activities take place less and less in cities. However, other
researchers (e.g. [29]) do claim that information technologies transform social engagements instead of decreasing it.

Some studies found that social engagements increase with the use of social network sites. For example, Valenzuela et al [28] reported a positive correlation between the intensity of Facebook "Group" use of students and their civic participation and political participation. Barkhuus and Tashiro [3] claimed Facebook features facilitate student socialization events from scheduled social gatherings to special events. Kirman et al [16] found that providing socio-contextual information can increase social game engagement on Facebook, but didn't increase the number of users. We do believe that information technology does change social engagement in forms. A more important issue is, however, how the changed social engagement matters to the social lives of individuals in communities, which is a fundamental question we want to pursue in this study.

RQ2: How are social engagements facilitated and supported with the affordance of Facebook?

2.3. Social Ties and Networks

Supporting social ties and networks is the key business of social network websites. However, the idea of social ties and networks can be traced back to 1930s' and the prosperity of computational science nowadays renders social network analysis with wider and more profound influence than ever before.

Social tie as a metaphor is the connection between social actors, while social network is an aggregation of social ties in a meaningful group. We view social ties and networks as structures of ongoing social interactions and social engagement. Most social relations are built in initial social interactions and then maintained through further interactions. Different from those relationships or ties that are built in offline interactions, a large portion of social connections in social network websites are engineered and could be different from the offline social ties. Engineered networks supported by technology can reduce the cost of information sharing in a massive way: broadcasting one’s status, asynchronous information updating, information feeding based subscription, etc. This helps relieve tie maintenance to a degree, but the quality, richness and context of shared information are at stake.

Existing studies showed that young people are motivated to join social network sites to keep strong ties with friends, to maintain ties with new acquaintances, and to meet new people online [1]. Facebook provide affordances that enable users to create and maintain a network of heterogeneous and weak ties [6]. Such ties provide access to information and opportunities that might not be available within close-knit ties.

Some researchers [9] claimed that social network sites such as Facebook may not increase the number of "strong ties", but may increase the "weak ties", because the technology is suited to maintain them cheaply and easily. However, some other researchers reported that Facebook has a strong association to maintaining or solidifying existing offline relationships, as opposed to meeting new people [10]. Barkhuus and Tashiro [3] reported that Facebook helped maintain potential or weak ties. People would not think of telephoning some friends, but feel fine to communicate with them through Facebook. Facebook use is especially helpful for students with low satisfaction and low self-esteem to increase their bridging ties [10].

In social network websites, existing offline ties are usually made online while new ties are established there. These phenomena present how technologies are used to build connection, but they barely touched upon how social tie works in social contexts. The challenge to us is not so much about how those engineered ties are formed online, but how they work for people both online and offline.

RQ3: How are social ties engineered in social contexts with the affordance of Facebook?

These three perspectives, or more accurately three elements, are essential to social lives both in individual and collective level. They are distinguishable conceptually, but in actual world they work together, they are reinforcing and cultivating each other in social contexts. Social interactions take place in any form and in any place. Along with these emergent social intercourses happening, social norms and other representations are crystallized, externalized, and objectified. They become social culture, history and conventions, etc; and serve as the ground for new and further social interactions to act upon and refer to [4]. In this way, social engagement serves as the soil where social identities and social ties emerge and grow. Social identities are symbolized and objectified as projections of collective images, and are subjectively perceived and enacted by social actors. As part of the products of emergent social intercourses, when social identities are subjectively internalized, they guide our thoughts and behaviors consciously or unconsciously. Social network, too, is constantly enriched by social engagements. Social engagement forges and transforms social ties as well as the whole social networks.

RQ4: How are social identities, social engagements, and social ties mutually reinforcing and cultivating with the affordances of Facebook?
3. METHOD: SCENARIO BASED INTERVIEWS

This paper reports data from interviews of eighteen Facebook users. Facebook has been pervasively and heavily used to communicate with colleague, classmates and other friends in various communities. Researchers [10] found that most of the Facebook connections were from offline to online with few connections from online to offline. That is, people use Facebook primarily to maintain existing offline relationships or to solidify local acquaintanceship, which makes Facebook a good place to study the integration of online and offline social lives.

All participants were junior or senior college students in a large eastern university in the United States recruited from a large class. They participated in this study with a compensation of 5% extra credits. Five of them are females and thirteen males. Thirteen were white, two black, three Asian. They use Facebook daily, and the number of their friends ranges from 143 to 740, with the average of 461 (SD=203). Three students used Facebook for fewer than 30 minutes on a typical day, seven students used it for about 30-60 minutes, five students used it for 1-2 hours, and the other three for 2-3 hours.

Each interview lasted for about 40 minutes. In the interview, each participant was asked to open his or her Facebook page, and selected 5 recent activities as scenarios to discuss with us. To increase the diversity and diminish the bias of selection of scenarios, participants were encouraged to select scenarios with different Facebook features (e.g. wall posts, status updates, tagged photos, Facebook Groups, Events). However, it totally depended on participants on which scenarios were chosen.

We call the interview “scenario based” because most of discussions were focused on the selected scenarios. In each scenario, the participants were asked to describe the interaction context, people involved, Facebook features they used, and how the online interaction was related to their offline activities. In this way, we collected 90 interaction scenarios. Different numbers of people were involved in scenarios ranging from 2 (e.g. a dyadic wall discussion) to thousands (e.g. a large Facebook Group). 61 of the scenarios, however, involve less than 20 persons.

For each scenario, participants answered a 4-item questionnaire of group identification adapted from [19], which measures member identification with the selected social castigator. The items include 1) when I talk about these people, I usually say we rather than they, 2) if someone said something bad about these people, I would feel almost as if they had said it about me, 3) when someone praises these people, if feels like a personal compliment. 4) I am very interested in what others think about these people. Participants were asked to rate these items in a 7-point Likert scale from strongly disagree to strongly agree.

Participants also answered the questionnaire of role identity adapted from [18], which measures perceived confirmation from other members of the participant's belief about his or her role identities inside the category. The participants first answered "among these people, I think my role is ...". Then were asked to rate on a 7-point Likert scales from not very much to very much on the question "The others among these people understand this role of me.”

Social engagement in the groups was also measured with three questions. The first question "I participant in activities among these people a lot. (online)" measures online engagement in the group. The second same question measured offline engagement. Both questions were rated in a 7-point Likert scale. The third question "How long have you participated in activities among these people" measures the length of participation history.

Social tie was measured by 5 items in the same 7-point Likert scale, including 1) attachment: I feel attached to these people, 2) intimacy: I maintain very close social relationships with these people, 3) interaction intensity: I spent a lot of time interacting with these people, 4) trust: I trust these people a lot, and 5) reciprocity: I believe these people will help me if I need it. These items were adopted from [12].

Two of the authors collaborated to clean the collected 90 scenarios depending on whether they had salient purposes and coherent activities. Then we discussed the coding system including types of groups, roles, engagements, and social ties based on both literature and data. Finally we together matched the scenarios into the coding systems.

4. RESULTS

To know how many Facebook friends were from local, we asked participants to look at their friend list, and estimate the number of their local friends (i.e. currently in college) and previous local friends (i.e. high school and hometown friends but currently not local). We found that on average 88.9% of Facebook friends were local or previous local friends, with 41.1% current local and 47.8% previous local friends, which confirms that most of Facebook connections were moved from offline to online. It also implies the possibility that Facebook interactions would be related to offline activities.
After cleaning the collected 90 scenarios, we identified 72 of them with salient purpose and relatively coherent activities. Other activities with no interaction (e.g. a status update without reply) or irrelevant interactions (e.g. a reply of saying hi to a posted funny video) were excluded, based on participants’ explanations of these activities.

4.1. Social Identity

4.1.1. The multifacetedness of Identity

The diverse aspects of identity were evidenced and vividly embodied in Facebook activities. We could see a student being a drummer of a rock band, a fan of New York Yankees, a student who enrolled in a network security course, and a clan who hung out in bars every weekend. Facebook makes these implicit social identities explicit by providing a platform for people to demonstrate, communicate, and verify their identities, which are responsive to their immediate social contexts. This finding confirms that social identity is a dynamic conception of constructing self-presentations, which is multifaceted and adjustable in social contexts.

Besides being members of different groups (i.e. group identity), students also reported meaningful roles (i.e. role identity) in the scenarios. For example, participant 9 created a Facebook Group (with the role of online group administer) for a "classmate and close friend" (offline roles) hurt in a car accident for emotion support and updates to others. These roles help participants define their position, responsibilities, and appropriate activities in the groups.

4.1.2. Group identities

Based on participants’ Facebook activities and their explanations, we categorized the 72 social groups in scenarios into clubs, fans, crews, cliques, and ad hoc groups (table 1), depending on their purpose and shared activities.

Table 1. Participants’ group identity in different kinds of social groups. (group identity is the average score in a 1-7 Likert scale; the figures in parenthesis are standard deviations)

<table>
<thead>
<tr>
<th>Kinds of Groups</th>
<th>clubs</th>
<th>fans</th>
<th>crews</th>
<th>cliques</th>
<th>ad hoc group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of groups</td>
<td>10</td>
<td>15</td>
<td>8</td>
<td>14</td>
<td>25</td>
</tr>
<tr>
<td>Group identity</td>
<td>5.70</td>
<td>4.92</td>
<td>5.22</td>
<td>6.29</td>
<td>4.38</td>
</tr>
<tr>
<td>(1.45)</td>
<td>(1.23)</td>
<td>(1.55)</td>
<td>(0.89)</td>
<td>(1.68)</td>
<td></td>
</tr>
</tbody>
</table>

1) Clubs: playing in music bands or sport teams

10 clubs were identified, in which students were members of a sport team, a rock band, or an honor academic program with regular activities. Such groups had relatively high and explicit criteria to be a member or demanded certain quality of members. They tended to be exclusive. Students had pretty high group identity (mean=5.70) as shown in table 1.

Club identities were usually embodied in activities supported by Facebook Groups, events, status updates, and photos, etc. For example, participant 10 was in a Facebook Group of his high school Track & Field team. He was the former captain of the team and had record in Javelin. They use this group for keeping match records, sharing photos, buying T-shirts, scheduling group meetings and parties, and also congratulating to individuals who did well. He had high group identity of this group, with the score of 6.

Another club used Facebook Events to schedule their weekly Frisbee playing. They sent invitations to around 55 students, and each time they got about 8 to play. The student we interviewed (participant 17) had group identity of 5.25.

Participant 1 used Facebook status updates to advertise his upcoming rock band show. Although it was his own status updates with several comments, it triggered score of his group identity is 5.75. Participant 4 showed us a photo of her softball team, with the score of group identity of 4.75.

2) Fans: supporting and enjoying others’ play

15 groups were fans of certain band, performer, sport team or artist work. Students reported relatively low group identity (mean=4.92) in these fans groups, as one of many other fans in Facebook Groups, Events, and Facebook Page.

Participant 15 reported that she was in a Facebook Group of Harry Potter. Such kind of group can be purely online community of interest; however it is still a local group. The group had social gatherings "at least once a week". She had a score of 4.5 on the group identity.

People can "like" some Facebook Pages to become their fans. Participant 7 got to know that a hockey team is going to lose an excellent player in the beginning of the season, from the status update of this team's Page. He watched almost every game of it from TV as one of the fans of this hockey team, and had a score of 4.5 on group identity.

Two students reported that they were invited in a Facebook Event to support the university volleyball team in a game. This team had been winning for three years except in last week's game, so students called for a "Streak 2.0" to "win for another three years and more champions". Both students reported that they had accepted
the invitation, and had the scores of 6 (participant 8) and 4.25 (participant 14) on their group identity.

Participant 17 wrote on his friend's wall, saying that a reggae performer "is gonna be on the Hub lawn next Wednesday!", with his friend replied "awesome, we are going". Three other friends also commented such as "damn right", "god yes". So they four planned to go together. This student reported a group identity of 4 as this performer's fans.

3) Crews: working collaboratively as a group
In the 8 crews (or working groups), students got together to collaborate on accomplish shared goals. They have average group identity of 5.22, as usually supported in Facebook Groups and Events.

Two students reported that they were in Facebook Groups for course projects. In this course, each group had 4-5 members for a semester-long project, with hand-ins once a week. Some groups created Facebook Groups to divide work, share their parts, and discuss each assignment. They reported their group identity of 2.5 (participant 12) and 5 (participant 13), which were fairly different.

Participant 16 reported that he was invited to the pre-fundraising meeting for the annual THON, a big social gathering in which students dancing and playing for 48 hours without sitting and sleeping. As an organizer of the THON, he had a high group identity of 7.

4) Cliques: hanging out together
Students usually have a group of friends who frequently meet and hang out. Students have the highest group identities (mean=6.29) in such kind of "cliques". Participant 18 reported that he was in a Facebook Group named "Mike Smith's Fan Club" (pseudo name) with 13 members, Mike Smith (pseudo name) was actually one of them, who was "very interesting". Most of other members were his roommates or classmates. They hung out "almost every day". This student had a score of 6.5 of group identity.

A lot of Facebook photos recorded the hangouts of these cliques. For example, participant 11 showed us a photo of 5 friends visiting a famous amusement park in New Jersey in the summer. He reported a score of 6.5 of group identity.

5) Ad hoc groups: randomly sharing and discussing
Many other social groups are more informal with shared interests or topics without regular activities. In the 25 ad hoc groups, students had the lowest group identities (mean=4.38). Unlike the other four kinds of groups, this kind of group is usually not directly related to offline activities. Instead they were often triggered by certain information sharing, and then some interested persons commented and discussed around it.

Participant 4 showed her status update "looking forward to Netherlands vs. Brazil" when in the soccer World Cup. Five friends commented, discussing which team they prefer and who will win out. When rating the group identity with these 5 friends, she gave a score of 1.25 which was very low, because they were different people who were just interested in the World Cup in that period.

Similarly, participant 17 posted video of a car test drive in a friend's wall, because "because I know he likes Honda", with 2 comments. He had a score of 3.5 of group identity in these people.

4.1.3. Role identities
While students belong to various social groups with different group identities, they had role identities inside these groups. We identified 12 scenarios in which participants were initiator, organizer, or leader, 37 scenarios as active member, and 25 scenarios as follower, fan, or even lurker (table 2).

Table 2. Participants' role identity. (Role identity is the average score in a 1-7 Likert scale; the figures in the parenthesis are standard deviations)

<table>
<thead>
<tr>
<th>Role identity</th>
<th>Initiator, organizer, leader</th>
<th>Participant, active member</th>
<th>Lurker, follower, fan</th>
</tr>
</thead>
<tbody>
<tr>
<td>number</td>
<td>12</td>
<td>37</td>
<td>25</td>
</tr>
<tr>
<td>Role identity</td>
<td>6.67 (0.52)</td>
<td>5.14 (2.78)</td>
<td>3.72 (1.86)</td>
</tr>
</tbody>
</table>

1) Initiators, leaders, organizers
When students reported themselves as initiators, organizers, or leaders in the social groups, they usually had very high role identity (mean=6.63). For example, participant 10 initiating Facebook Event for a trip to Las Vegas with about 9 high school friends in winter break. They used it to plan old friends gathering, they discussed the house at beach for rent. They used it to plan old friends gathering, they discussed the house at beach for rent. The student reported himself as the initiator, with the score of role identity of 7. Participant 15 tried to organize a birthday party for a friend after noticing in Facebook his birthday was coming. So she just created a Facebook Event, inviting about 12 students, and planning to buy a cake, without letting him know. She reported her score of role identity of 6.

2) Participant or active member
Students have medium role identity (mean=5.14) when they reported that they were participants in social group without significant roles. For example, participant 6 showed us a photo in which five friends were on their way
to her classmate's birthday party. As "one of the classmates and friends", she reported her role identity of 5. Participant 15 in the Facebook Group of Harry Potter also rated her role identity in the group as 4, because "I am just a member and I sometimes join them if I am free".

3) Lurker, follower, or fan
In some other groups, students did not even participate in any activity, with low role identity (3.72). Participants with this role usually belong to the fans group or were inactive in some club or crews. For example, participant 7 knowing the hockey team is going to lose a player rated his role identity as 1, because "I am just one of the thousands of the followers". Participant 11 was a member of a Facebook Group of an urban dance troupe. Because his girlfriend was one of the dancers, so he usually goes to the Group to check their schedules of performances and sometimes go to watch. Since he is not part of the troupe, he rated the role identity of himself as 3.

4.2. Social Engagement

We found that Facebook provide affordances in different phases of social events, from spurring ideas and proposing, to scheduling and planning, to interacting in the event, and to post event sharing (figure 1).

4.2.1. Proposing
Interactions in Facebook can help generate ideas and spur social engagements. Participant 18 told us he found a coming performance of a comedian at Washington D.C. As he previously had talked about this comedian with some friends, he just wrote on one friend's wall, saying that this comedian would have a rally in D.C. The friend replied that "It's happening. We must go", and another commented "yes". Finally, 5 students figured out they would go to the event together.

Participant 13 went to China for a studying abroad program in the summer with about 100 students from different American universities. After they came back to U.S., one student initiated a Facebook Event calling for reunion in the beginning of next summer. However, they had not decided where to meet yet. So these students were discussing why they meet, where to meet, and what activities they could have.

4.2.2. Scheduling
Students use Facebook Event to plan social events a lot. Participant 4 showed us a Facebook Event, in which his high school classmates were planning reunion, with 44 students accepted the invitation, 40 maybe attending, 24 rejected, and 80 still pending. In such a big event, students can check how many people will be there, who will be there, and decide whether they will go together. It also helps the organizers to better organize the event, for example what the accommodation should be.

Small groups also use Facebook Event to plan their travels. Participant 18 was planning a 10-day trip to Europe with his classmates in the winter break. He created a Facebook Event, such that his friends could discuss the schedules, share maps and stories of different cities, and discuss the tickets and restaurants around the trip. Participant 13 reported that Facebook Event also provide reminders when a social event comes near. Users can easily notice it in the right side of Facebook.

4.2.3. Broadcasting
Even when people are in offline activities, they can easily have updates and discussions in Facebook with cellphone, which enhances their experience of social participation.

When participant 18 was in a Reggae concert, he updated his status, writing "Matisyahu is here!" with a photo he just took. Soon commented a friend who was also in this concert and another two who were not. In this way, they share what is going on immediately and vividly with instant feedbacks. Participant 14 showed us a friend' status update, announcing that the university decided to build a new hockey stadium. The participant said this friend had just been in the press conference. As soon as he got the news, he announced it to his friends on Facebook, so that all his friends became the firsts to know it.

![Figure 1. Facebook provides affordances in different phases of social events.](image-url)
4.2.4. Post-event sharing
Photos work as external representations and memory holders of previous social events, which also facilities further social engagements. Participant 16 reported that "A picture is more than 1000 words. Pictures help store our memories online, so we won't lose it." They give vivid updates to our friends on what we are doing. We can also see what others would think about these activities. Furthermore, being tagged in photos kind of make people in the photo connected.” Participant 14 reported that photos of group events helped illustrate how previous group events look like, so new members can easily make decision whether they want to join. Participant 17 showed us some photos playing in a guitar band. These photos were edited to look funny. This group of photos became popular and was commented by dozens of friends. The participant reported that these photos made a lot of fun for him and his friends.

4.3. Social Tie
Existing studies have reported that social media such as Facebook can help maintain weak ties as well as strong ties. In this study we investigated how Facebook provides affordance for facilitating these ties.

4.3.1. Strong tie
1) Facebook is more than an “alternative”
Existing studies (e.g. [29]) claimed that Facebook provides an alternative way to communicate for strong ties. Interestingly, we find that it is not just an “additional” way to communicate, some students prefer Facebook to email, instant messages, and other tools. For example, participant 17 received a coupon for a pets’ mart in his email. He knew that one of his friends went to this mart every week, so he decided to forward this coupon to him. However, he did not directly forward in email. He copied and pasted it, and sent it as a message in Facebook. He reported that it was his habit using Facebook messages and chats rather than emails and instant messages, because all his friends were in Facebook, and they are more frequently online in Facebook than in emails and instant message tools. Actually 4 of our participants mentioned similar issue, the critical mass of Facebook makes students prefer to use Facebook functions than to use their counterparts.

2) Strong ties are more multivalent
We see strong ties usually were involved in various social contexts even when each participant just reported 5 activities. For example, 4 activities of participant 10 involved overlapping friends. He was in the Facebook Group of his high school Track & Field team as former captain; he created another Facebook Group “Track Seniors” with just 10 close friends; he showed us a photo when 5 of these “high school brothers” visited him from other universities; and he created a Facebook event for trip to Vegas with 9 of these high school friends.

4.3.2. Weak tie
1) Facebook provides lower threshold to interact
As existing studies claimed, Facebook help maintain existing offline relationships what would otherwise be ephemeral, temporary acquaintanceship [10]. Facebook provide some interacting methods with very low threshold. Students can add anybody they have met (even without talk) into Facebook friends. For example, participant 1 added a new neighbor as his friend though the score of their tie strength was just 1.75. When friends updated their status, it is easy to just leave a couple of words for comments, or even you just need one click to "like" it. When talking about his Status updates, participants 5 could not remember who the person "liked" his status was.

Being in the same Facebook Group, Event, or Page makes people weakly connected. This is the case especially when people engage in large groups or events. Hundreds of people were "indirectly" connected by being in the same Facebook Group or Event. Though they are not directly connected as friends, Facebook leaves an opportunity for further connection. Participant 15 mentioned that sometimes she used Facebook Groups to find specific person who was not her Facebook friend.

2) Weak ties are more context-specific
Weak ties were usually more dependent on social contexts. For example, participant 15 sometimes participates in the activities of the Harry Potter fans club. Just 2 other members, however, were added as friends by her. So other members just have the relationship with her in the context of the club activities.

5. CONCLUSION AND DISCUSSION
We investigated social effects and affordances of communication media such as Facebook on people’s social lives with regard to social identity, social engagement, and social ties. Social interactions are pervasive and people’s social lives are carried out in complex fabrics of social context. Social relations can be strong or weak, social engagements can be intensive or mild, and social identities can be high or low. All these can be magnified in engineered social networks strongly mediated by information technology.

Through a qualitative study of 90 Facebook scenarios from 18 college students, we were able to look into how new communication media influence the integration of online and offline social interactions. From Facebook activities the participants demonstrated, we see 1) Facebook users’ identities are multifaceted and embodied in social interactions in different context; 2) Facebook provides supports for social engagements that are mutually cultivating with social ties and social identity; 3) while Facebook provide means to maintain existing ties and facilitate weak ties, Facebook appropriates different affordances for strong ties and weak ties in the context of social engagements.
5.1. Multifaceted Nature of Facebook Users' Identity

We found that Facebook made social identities more visible. It embodied multifacetedness of social identities in different contexts. We identified five types of group identities and three types of role identities that are manifested in Facebook.

Technology to a degree can be seen as technical representation of real world [15]. In this sense, Facebook does not create a virtual world or completely online communities. As our study shows, activities and identities of Facebook users have their real world origins. Take the field and track team, the Harry Potter group, and music band for example, these groups have their history and traditions, which are rooted in real world interaction. They are not created or enabled purely online by Facebook. When those Facebook users interact online, their feelings may largely be rested on and nurtured by their past experience.

Therefore, it is inevitable that identities reflected on Facebook are dynamic and multifaceted. This echoes our previous study [29]. More importantly, these identities are activated contextually. The same Facebook user, when he or she gets involved in different activities, he or she may bear a salient identity that different from one social interaction to another.

5.2. Social Engagement Cultivated by Social Identity

Facebook, as a communication media platform, provides various communication channels (Wall post, person-to-person chat, etc) and different metaphors in real world (Group, Event, etc). As we mentioned, one adaptations of Facebook use is that it can be used to support social events in different phase. Among the 90 scenarios we investigated, there were 16 events and 19 groups. In these Facebook Groups, users used to organize group related events too. So, one major adaptation of Facebook use is supporting social events.

However, although Facebook provides general tools that can be used to support social engagements. The actual events taken place over Facebook show qualitatively difference, which we believe has something to do with social ties and social identity.

From the study we see different social identities are related to different patterns of social engagements. Being members of clubs, students regularly and actively participate in club activities; they even advertise their games and shows as participant 1 did, calling for more participation. Being one of the fans, on contrast, would only participate when these social activities are available.

Their degrees of participation also differ. Members in clubs need to practice together a lot; while some fans just watch the games and following the news of the teams, just as participant 7 knowing the hockey team is going to lose a player.

The role identities in social groups also define their patterns of engagement. Event initiators (e.g. participant 15 organizing the birthday party) may participated in the event from the very beginning (proposing a birthday party and buying a cake), to scheduling the event (sending invitations to other friends), and to upload photos after the party. As a member, on contrast, students may accept the invitation, and just show up in the event, just as participant 15 said as a member of Harry Potter group she just "sometimes join them if I am free".

5.3. Different Affordances for Strong and Weak Ties

Strong ties help maintain close relationship that provides intimacy, trust, social supports, and easy and timely access to information. However, as Granovetter [12] claims, sustaining relationship requires energy. Limits on time, and emotional resources will reduce the strength of the bond between individuals. We found Facebook combined with mobility partly mitigates this limitation. Now it is much easier than Granovetter's time to interact with people faraway. For example, when participant 17 received a coupon for a pets’ mart and knew one of his friends went to this mart every week. It was just a click away for him to share this coupon with his friend.

Furthermore, as students can so easily reach their close friends in various Facebook features, that they use these features to interact for different purposes, just as participant 10 were interacting with the same high school track senior friends in different Facebook Groups, Events, and Photos. This affordance actually makes Facebook a more centralized platform of social interactions between strong ties than just an "additional" way to communicate.

Weak ties are important because they provide further reach for new information, viewpoints and approaches to problems. While in Granovetter's time the "weak ties" were more like a vague totality, social media such as Facebook helped capture and maintain them in a single repository so that weak ties would not extinguish over time. Simply noticing the status updates of weak ties can bring serendipity and new opportunities. For example, participant 14 noticed that one of his weak tie friends, who was in the press conference, announcing the decision of a new stadium. He would not otherwise get such timely news without Facebook.

Moreover, Facebook allows weak ties work together without having to form close bonds, so they do not need to develop a level of intimacy to operate successfully in work context. For example, participant 12 collaborated every week with his classmates for a course project. With Facebook group, they did not need to meet and discuss face-to-face every time. And he can just keep a low group identity (with score of 2.5).
Participant 15, for another example, was in the Harry Potter group with 210 members, with a salient group identity of 4.5. However, she was just directly connected with 2 of them as Facebook friends, which implies that most of her ties in the group were weak ties. However, these weak or even indirect ties were vital. Without these ties, she will lose a soil of her group identity and her engagement activities. She also mentioned sometimes she used such Facebook Groups to find specific person who was not her Facebook friend, which implies the potential of indirect weak ties to become salient and direct ties.

5.4. Limitations and future study

This exploratory study is informative in connecting online community life to the offline life with respect to social identities, social engagements, and social ties. Further investigations should be made on the detailed processes (e.g. the enactment, appropriation, and integration of the multiple identities) as well as how these three ingredients are mutually reinforcing. Another limitation of this study is that our participants were purely college students. Facebook users of other domains may use it differently.

ACKNOWLEDGEMENT

This research was supported in part by the Edward M. Frymoyer Chair Endowment.

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