Figure 1. A screenshot of the home page for Pact, a goal application aimed at teams of close friends that supports progress logging, commenting, Liking, and personalizing goals.

Pact: Leveraging Social Networks for Goal Achievement

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Abstract

Millions of individuals have goals but struggle to achieve them. Research shows that writing down goals, sharing them with friends, and receiving feedback can increase the likelihood that these goals are achieved. However, there is limited research on technologies that support groups of friends working together toward goals. We are designing Pact, a social application in which groups of friends can collaborate toward goal achievement. We have made novel design decisions involving persuasion and motivation due to our focus on previously established strong social ties. Pact allows individuals to set personally achievable goals, yet encourages both collaboration and competition by allowing friends to compare measurable progress and hold each other accountable.

Author Keywords

Goal Achievement; Social Feedback

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

Introduction

100 million people make New Year's resolutions every year, but two thirds fail to achieve them [7]. Goals are easy to come by, but hard to complete, leading to the

emergence of applications designed to support goal achievement. Many of these applications incorporate social features that leverage social support and accountability [1]. Lift and 43Things are two popular tools that embody typical social support features, allowing people to both comment on each other's goals and progress check-ins and to give "Props" or "cheers" (analogous to Facebook "Likes") to show support. stickK is another goals application that was designed based the work of economists at Yale University [5]. It holds users accountable through stakes (money risked if the goal is not achieved), referees (someone you know who can monitor your progress), and supporters (other stickK users who provide feedback).

All three of these applications treat their user base as a "community" of people who support and motivate each other. However, except for stickK referees who are often close ties, these communities are primarily composed of strangers who have shared goals. This approach does provide some sense of community, but relationships built online are often not as meaningful as their offline counterparts [3]. When relationships between people extend beyond "mere coaction" they can inspire higher performance [1].

We are developing Pact, a goal achievement application that leverages existing, strong social ties to provide support and accountability. In Pact, people form teams with their friends around common goals such as studying more or losing weight, with short-term deadlines that encourage concrete actions and progress [6]. Leveraging strong ties reduces the cost of finding and interacting with strangers, as well as the risk of disclosing personal information to less-trusted parties [2]. Because people vary in ability, motivation, and

measurement toward goals [4], Pact allows each team member to personalize their goal: some team members might choose to exercise 30 minutes three times a week, while others would target 60 minutes each day. When individuals check in, progress is shown relative to that person's goal, allowing teammates to collaborate and compete on a more equal footing despite these differences in ability—and providing explicit feedback that allows people to adjust course and increase their likelihood of achieving their goals [6]. And like other systems, Pact allows teammates to comment on or "like" each other's progress to provide social support, while a stickK-like wager system provides incentives to motivate goal completion [5].

Design Process
Pact was designed through an iterative process. We learned about users' needs through an online survey and in-person interviews before we began designing, and collected feedback from potential users throughout the design process. We started with rough sketches, moved through sets of screenshots with increasingly high fidelity, and are in the process of building the software. We currently have a functional technical prototype, running as a Node.JS web application.

Pact's main focus is team goals with personalized contributions, and logging and commenting on progress. Below, we discuss these key features in more detail, using screenshots and scenarios of use.

Team goals with personalized contributions
We first show the creation of a typical team and goal using Pact. Melissa, a 21-year-old college student, is interested in working with three of her close friends to spend more time studying. As shown in Figure 2, she

created the team name "Let's Study More" and proposed a deadline for the goal. Locke and Latham's Goal Setting theory indicates that such deadlines provide more clarity about when and what behaviors will be rewarded and in turn increase the performance toward the goal [6]. Melissa also creates a wager for the group, which is a reward (or punishment) that the friends agree to use to hold each other accountable toward their goals. In this case, the team will treat themselves to dinner at their favorite restaurant if they all reach their goals.

After entering the team information, Melissa needs to set up her personal goal and enter her friends' names
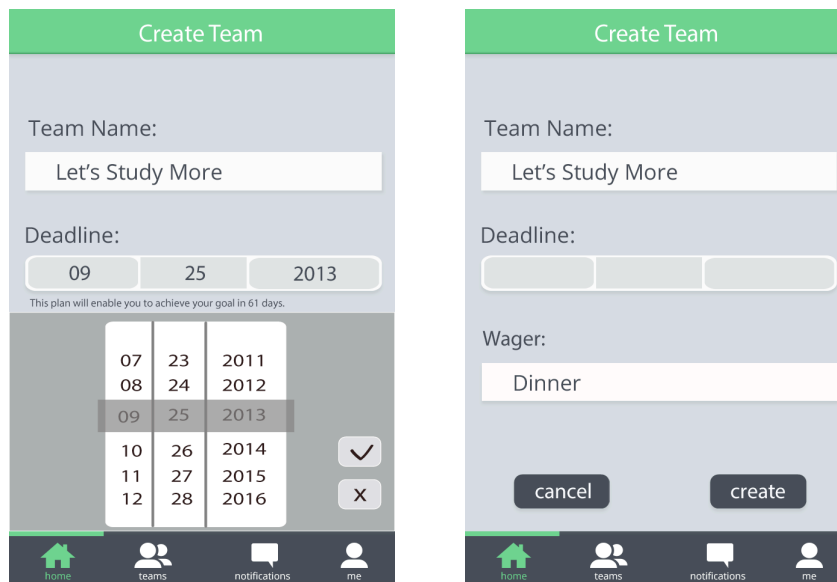
and emails to send out invitations. A personal goal is the individual goal that each teammate aims to achieve by this team's deadline. As shown in Figure 3, a personal goal is a sentence structured like "I will + verb + number + unit + frequency every day/week/by deadline." Melissa uses this form to create the goal "I will study 30 minutes every day." As with deadlines, more specific goals also lead to better performance toward goals [6]. Requiring users to give specific targets encourages them to set more concrete goals rather than vague goals like "I will study more". This format also allows the system to ask more specific questions when users check in ("How many minutes did you study today?" versus "Record your progress") and provide specific feedback ("You completed 80% of your goal") that also has been shown to support goal accomplishment [6].

We introduced the idea of personal goal customization in the context of a team goal because people may have different approaches to measuring progress toward their goal, as well as different levels of motivation or ability. For example, Melissa is concerned about her grades and wants to study for 30 minutes every day, but her friend Jane is preparing for the Medical College Admissions Test (MCAT) and wants to take 3 practice tests every week. By choosing a unit that made more sense to her (practice tests versus minutes) and choosing a commitment that meets her needs, Jane is still able to participate in the team that Melissa created. This format will also allow friends to compare amongst each other, even if they have different goals (e.g., "Melissa completed 80% of her goal and Bob completed 90% of his goal").

Figure 2. Creating a new goal team. Left, setting the team name and a specific deadline. Right, setting a team wager for completing the goal.

Making, seeing, and supporting progress
Once a user has joined one or more teams, she can use Pact to record progress toward goals and see teammates' progress. There are four main sections in the Pact application: home, teams, notifications, and me. Below we will focus on the home and team sections and the reasoning behind our decisions, because they are the two main pages that support goal accomplishment.
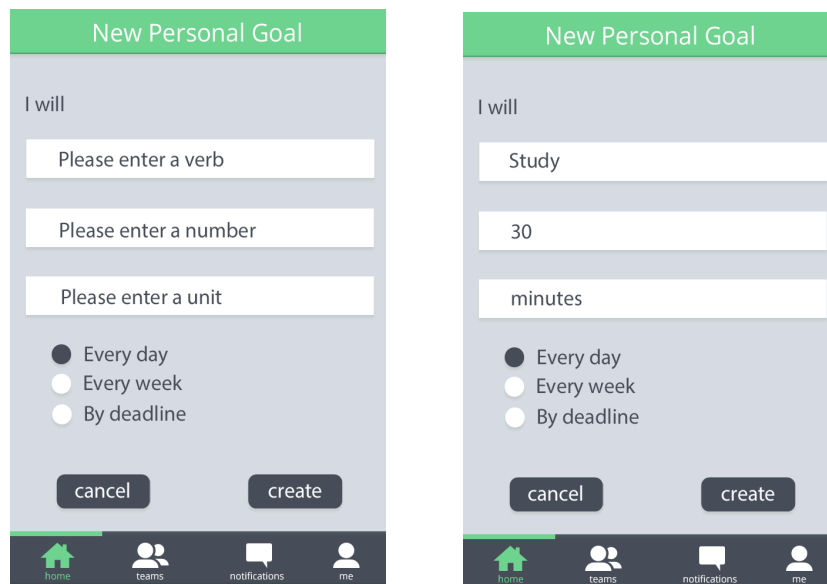
HOME
As shown in Figure 4-left, the home page consists of

Figure 3. Setting personalized goals. Left, the template, with a verb, number, unit, and frequency. Right, Melissa's personal goal, to study 30 minutes a day. Teammate Jane might have a different goal, to take three practice tests a week; personalized goals allow both to participate together.

two parts: a list of goals to check into and a news feed of progress on all of the goals.

Check-in: The top of the page contains check-in bars for each team the user is part of. They allow users to easily update the progress they have made for specific goals. In Figure 4, Melissa has already logged that she went for a run (so that bar is checked). She is in the process of logging that she spent 2 hours studying and has the option to enter some text about her progress toward her goal. She has not yet checked in for her "Eat healthy" goal. Having check-in boxes on the top of the home page makes the goals salient and reminds users to check in and share their daily progress.

News feed: Under the check-in boxes, the news feed merges recent check-ins from friends in all of the user's teams in reverse chronological order. The news feed emphasizes the social aspect of Pact, because it is not just a goal app, it is a team goal app. Users can like and comment on other people's check-ins to encourage or give advice. Melissa can like Jessica's check-in in Figure 4 by clicking on the heart; once she likes it, the heart becomes pink (as shown in the team page, Figure 4-right). The check-in already has a comment from one friend, and Melissa can scroll down to add a second comment. The likes and comments aim to encourage social interactions between team members and help motivate them to achieve their goals [1].

TEAMS
Figure 4-right shows the "Let's Study More" team page, which includes three subsections—activity, group progress, and visualization.

Activity: The activity section is similar to the news feed on the home page, but limited to the members of a specific team. Team members can like or comment on their teammates' progress to encourage each other.

Team progress: The team progress section is under development and will show each member's progress and the entire team's progress in percentages to give the team an idea of how far they are from achieving both their individual goals and team goal. Allowing teammates to see the progress made so far provides feedback that can help them adjust their behaviors [6].

Figure 4. The home and team pages. Left, the home page, with check-in bars for each team Melissa is part of and aggregated progress across the team; she is checking in for her Let's Study More team. Right, the team page, showing team-specific activity, including check-ins, comments, and likes.

Visualization: The visualizations of team activity are also under development and so not shown, but the goal is to show representations of activity over time to help the team reflect on when they did, and did not, make progress toward the goal.

Discussion

Pact tries to motivate people to accomplish their goals through a combination of mechanisms: the user's friend groups, group wagers, personally appropriate and specific goals, periodical reminders (both via email and within the application), and deadlines. In particular, we are interested in exploring whether our choice to focus on strong network ties will be effective compared to other goal achievement applications.

We believe that using a user's network of friends will put pressure on a user to finish his goal, but this is an open question that we will explore as we deploy Pact over the next six months. Likewise, we believe that supporting personally appropriate goals in a team context will increase participation, motivation, and performance by allowing people to set goals that match their own ability and motivation levels [4], and will explore how this us used during the deployment.

We are also interested in the general question of what kinds of information we can present to help people achieve their goals, and want to look at how friends, bots, and ads all might give useful advice.

Friends: Pact currently supports friends commenting on each other's goals and check-ins, both for social support and for advice. Sometimes people do not complete goals because they lack appropriate strategies [6]; comments that give specific advice
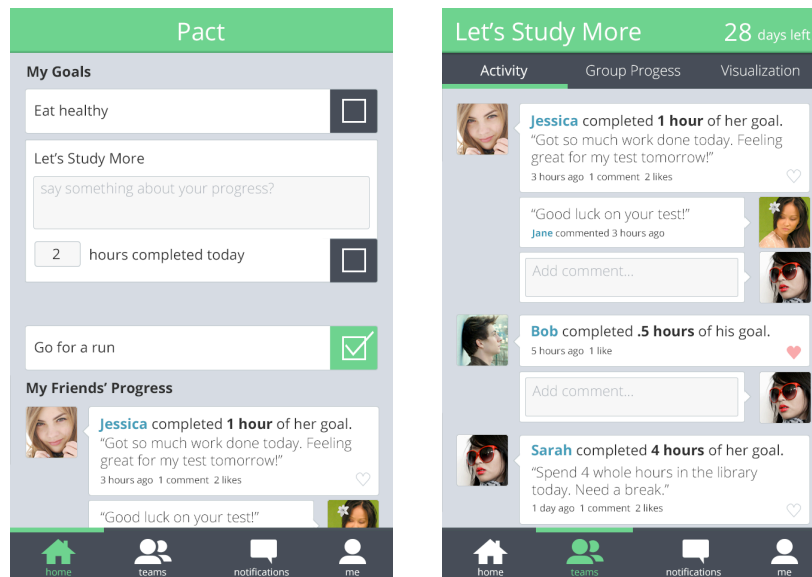
might support goal completion. Interface designs that show desirable examples of content can influence people to in turn contribute such content [8], and we could do that here by seeding the system with comments that provide such advice.

Bots: We also want to explore the use of a bot to give advice to users. For example, if a user has a goal to get an A in a class and he or she posts a check-in saying, "I just stayed up all night cramming for an exam," the bot could use a database of facts about common goal domains to respond by saying, "Studies show that sleeping at least 8 hours a night helps improve memory and academic performance." We would likely do Wizard-of-Oz style testing at first, but this is a fertile area for information retrieval and natural language processing techniques.

Ads: Finally, showing targeted advertisements might be helpful for some kinds of goals: for instance, ads for diets, gyms, and workouts might be useful sources of information for people trying to lose weight—as well as supporting Pact as an ongoing service.

Conclusion

Millions of people have goals, and many struggle to achieve them, partly because achieving a goal alone can be challenging. A plethora of goal applications exist to help people reach their goals individually, but there is limited research on technologies that support group goals. Pact treads new ground as it explores group goals and how working with existing offline relationships might support goal accomplishment. This,

along with personally appropriate goals in a team context, make Pact a unique tool with the potential to open new paths toward goal attainment. As we finalize our platform and continue with user testing, we hope to find quantitative measures to evaluate our research questions and the potential impact of Pact.

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