Executive Summary

A user-centered design approach was taken to create an application to help Soka Gakkai members track chanting “Nam-myoho-renge-kyo”. Originally it was assumed that the project would focus on helping users complete a million daimoku campaign, but through interviews it was determined that a more context oriented approach was needed. Paper prototypes and mid-fidelity functional prototypes were created based on user research and tested to validate the new approach. Refinements were made and a long-term study was initiated to test integration with user needs. Based on these results recommendations for completion were made.

Objective

The objective of this project was to create an application to help Soka Gakkai members track their daily chanting of “Nam-myoho-renge-kyo” (known as daimoku) from their mobile devices. Currently, only physical products and home made methods exist for users to keep track of their daimoku.

Three phases were planned for the project, employing user-centered design techniques to create a functional application. First, a research phase would define the requirements based on surveys and interviews. The second phase would consist of user testing and an iterative design process. The third phase was a long-term usability study to gauge how well the application fit into the daily practice of the target audience.

Methodology

This project featured several techniques that involved users. In accordance with standard procedure in studies that involve human subjects, each participant was asked to read and sign a consent form. There were a few different consent forms and each is available in Appendix A.

Phase 1

The goal for this phase was to complete six interviews. However, only four interviews we conducted following a loose outline (Appendix B). Interviews were conducted face to face and focused on the daily chanting of the participant and his/her use of existing daimoku charts to track their daimoku over a set period of time.

In addition, a survey was administered via the web to determine the technical capabilities of the target audience. This was necessary to determine which kind of application to develop, a single mobile device application (iOS, Android, etc) or a web-based application which would cover many mobile devices as standard computer browsers.

The deliverables for this phase were functional and technical requirements, personas, and scenarios to guide the development of the application.

Phase 2
The purpose of phase 2 was to rapidly improve prototypes developed from the requirements by testing them with users. The first usability study had participants testing a paper prototype. They were given 5 tasks. Each task also featured a few follow-up questions. There were a few short demographic questions before each test and the test concluded with more questions to gather information on the participant's overall thoughts on the application. Four users participated in the study.

The second usability study used a similar script with modified tasks and one additional task. However, this study featured a functional prototype developed in Ruby on Rails. The test was administered on a laptop and the tests were recorded using Silverback. Once again pre-test, post-task, and post-test questions were administered. Five users participated in the study.

Originally Phase 2 was to focus on user research pertaining to the interface of the application. However, due to the results of Phase 1, the timeline and methods were altered. The original plan called for a focus group for users to develop their own interface and for the requirements to be updated accordingly. This was removed in favor of a long-term usability study to take place after the second round of usability tests. Additionally, 2 more users were interviewed before the usability tests, as more research was necessary to complete the functional requirements.

The deliverables for Phase 2 consisted of the final requirements documents, a low-fidelity, paper prototype, a mid-fidelity, functional prototype, and interaction design documents.

Phase 3
The previous phases focused on developing the interface of the application. To truly validate the functionality, it was determined that a long-term usability study would be necessary to determine how well the features fit within the daily practice of the intended users. After incorporating the feedback and lessons learned from the previous usability tests, the functional prototype was updated and a high-fidelity design was implemented.

16 participants were recruited and given 5 days to use the application (http://daimokuapp.com) using any device they preferred. Users were asked to keep a daily diary of their interactions with the application and any thoughts they had about the functionality and their use of the application (full instructions can be found in Appendix D). At the end of the five days, participants filled out a survey to gather their overall impressions of the application.

Google Analytics was also used to track participants most used actions. The research team also had access to a list of all the timers created and the number of goals created per user (but not what those goals were).

Deliverables for this phase include a high fidelity prototype and recommendations for changes to the application.

Results

Phase 1
The technical survey showed a wide variety of devices, even among the 11 participants. In order to serve the largest possible section of users, it was determined that the application should be web-based. There are several other technical requirements that can be found in Appendix B.

Only 1 of the 4 participants had completed a 1 million daimoku campaign. Here are two of the major lessons learned from the interviews:

- **User's value context**
    - "I can't picture how long it would take to chant 1 million daimoku."
    - "I have only completed 1 million daimoku campaign, but I have started several… usually I don't finish because I don't sync up my goals with the campaign."
- **Reaching goal is a reward**
    - "Nothing feels better than reaching my daily chanting goal."

Originally the purpose of this application was to build a digital million daimoku campaign tracker. However, participants also expressed a need for a more context oriented approach to their daily practice. Therefore, the original goal will be altered to create an application that is better suited towards tracking a user's daily chanting habits in a goal based system. It was also determined that more were needed to generate a complete list of functional requirements.

Phase 2
The paper prototypes were validated as a step in the right direction as the low-fidelity prototypes. Participants proved to be quite adept at completing the tasks, and tasks tended to be completed faster as participants became more familiar with the interface.

Below is a list of the main observations and potential fixes:

- Buttons need to be bigger
- The play button is easy to miss and confusing
- The add time button on the main timer is confusing
- Add time screen is confusing, it must be more human readable
- The checkbox next to the goal is not clear as the best way to mark a goal as complete
- Participants requested the ability to create sub-goals to their main goals
- Participants requested more emphasis on the Daily Daimoku goal

The functional prototypes validated many of the changes implemented from the paper prototype. However further refinement must be added to the Daily Daimoku goal, as users still struggled with this functionality.

Participants struggled with the language used in the prototype. To save room, plus signs were used instead of the word “Add” this was confusing. There were also several instances of poorly named buttons. Within the application, the daily entries are referred to as “timers” and several of the buttons mentioned “Update timers.” Some participants ignored this and just clicked on the buttons, but others were confused. Extra attention to language will be used in the next iteration.

Here is a list of major areas of improvement (full list can be found in Milestone 2 report in Appendix C):

- Update language to appear more natural and match context within the application
- Make buttons bigger
- Improve feedback for completed actions

Phase 3
Of the sixteen users recruited, only ten completed the survey. Only 6 users turned in their diaries. However, through a combination of analytics, the diaries turned in, and other administrative access to the site, enough data was collected to make recommendations for improving the site.

Overall users were satisfied. However, there were a great deal of functional problems. Initially users reported issues signing up. This was due to an error in the sign up form that would not record one’s daily goal if they only entered into one space. These participants had to have their accounts manually set up. Additionally, iPhone users could not properly add time to daily entries because there is a behavior in Mobile Safari that does not allow Javascript to change form inputs. These are issues that might have been caught if Usability Test 2 had been tested on a mobile device rather than on a desktop.

Here is a list of major feedback that participants requested:

- **Timer would pause when phones go to sleep**
  - “I also noticed that the if my phone goes to sleep the timer pauses.”
- **Some users reported problems adding goals**
- **Some users were confused as to why they should add notes and didn’t use that functionality**
  - “I didn't use the add note. I didn't find a use for it.”
- **Participants had difficulty changing the time using the “Add Time” function**
  - “Trying to say I have chanted 1 hour and 30 min but it keeps saying 30 minutes.”
  - “Is there a way to remove time?”
- **Users want to translate from time chanted to amount of daimoku (number of chanting “Nam-myoho-renge-kyo”)**
  - “I would love to see one's progress over time, like getting a report when you've chanted 10,000 daimoku or even 1,000,000 daimoku.”
- **Tie goals progress more directly to daimoku**
  - “Have goals visible when updating daimoku times.”

- “I thought the goals function was great. Maybe the ability to date stamp the day you accomplished the goal.”

Each of these requests can be translated directly into new features for the application. Some of them, such as problems creating goals, will require additional research to determine the exact issue. Other issues, such as removing time from a daily total were confusing because the form for adding time was created specifically for adding time, not subtracting it. This use case was not planned for and might not have been found in a standard usability test.

Final Recommendations

Goals proved to be the function that requires the most attention. They were initially created to be created, marked as completed, or edited. Most participants did not add any goals at all. Those that did added less than 5 goals. Over a short time period like this, it is most likely that users were creating large goals that would take long periods of time to complete and the application provides no methods for tracking long term progress. However, participants asked specifically for a way to track daimoku, as translated roughly from time (1 min ~= 60 daimoku), towards that goal. This would be fairly simple, as all the necessary data is already included in the application.

Participants would also like to see their daily totals as both time based and daimoku chanted. This data would not be terribly difficult to provide as all the necessary data is already in place.

As for display, it may be best to find an alternate way to allow for editing time and adding a note. Both of these options could be placed within a hidden menu. Few participants added notes for their daily chanting, and those that did used it as an entry point for their diary as part of the study. It may be worth de-emphasizing these functions to provide more room for displaying the daily time chanted and the total daimoku chanted.

It also appears as though the “Add Time” dialogue should be changed to allow both the addition and subtraction of time. The approach taken attempted to use language to convey and give feedback for the time changed, however, it focused only on adding time to the already existing time (negative time could be “added” to decrease the total time). Perhaps allowing the user to directly manipulate the total time would be the best option. This option could be tester further once a new solution is found.

Appendices

Appendix A - Consent form
This general consent form was used for interviews and Phase 2 Usability Studies. Phase 3 featured a separate, web-based consent form (see Appendix D)
http://goo.gl/JdR76

Appendix B - Phase 1

Interview Questions
http://goo.gl/42V5y

Personas
http://goo.gl/zc9JM

Scenarios
http://goo.gl/GXt1C

Technical Requirements
http://goo.gl/vl28B

Appendix C - Phase 2

Requirements docs
http://goo.gl/ZFNqv

Interaction design
http://goo.gl/HucAK

Sketched interface
http://goo.gl/CRnI8

Functional prototype
http://daimoku.tnels.com

Script for Paper Prototype Test
http://goo.gl/LYPNe

Script for Functional Prototype Test
http://goo.gl/lW82N

Complete Milestone 2 Report
http://goo.gl/U4NpP

Appendix D - Phase 3

High-Fidelity Prototype
http://daimokuapp.com
Login info
email: user1@test.com
password: tester

Consent Form
http://goo.gl/uKoVC

Post-Test Survey
http://goo.gl/3Rcke

Post-Test Survey Results
http://goo.gl/8OBwb

Phase 3 Instructions
http://goo.gl/ugwcm

User Diaries
http://goo.gl/HnJ8L