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Using "Social Scriptures" as a Tool for Gospel Learning and Sharing

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USING THE SCRIPTURES AS A SOCIAL TOOL FOR GOSPEL

LEARNING AND SHARING

by

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Abstract

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This paper summarizes a design project entitled "Social Scriptures" completed for the AudioVisual Department of The Church of Jesus Christ of Latter-day Saints (The Church). The purpose of the design project was to prototype a web-based computer application that could be used by Church members to study the scriptures in an online social context. Originally, the project was designed to be a part of the Facebook Application Platform in order to leverage both the extensive existing social connections of Church members as well as deliver the application in a setting where many Church members already spend a good deal of their time. Through the cyclic design processes of feedback and evaluation, the project was later generalized to not necessarily depend on the Facebook Platform, but rather create a system from the existing member account information coupled with scriptural content that can function inside of a social network or on its own. The evolution of the design process towards using a rapid prototyping methodology allowed for quick revisions, lower stakes testing, and more overall flexibility in the design. The various stages of the design process, including revisions and prototypes, are shown and discussed in this paper.

Keywords: Facebook application, rapid prototyping, design project, social scriptures, social media

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For my wife, who has stood by me through countless hours of stress, frustration, disappointment, excitement, happiness and joy. Thank you.

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Background

Social platforms and social networking tools that enable and encourage sharing are one of the hallmarks of the so-called Web 2.0 era. Enormous social and collaborative websites like Wikipedia, MySpace, Facebook, and many others have become the de facto leaders of the social side of the eclectic Web 2.0 movement. Younger learners are rapidly assimilating into a new kind of culture created by sharing and socially engaging tools at younger and younger ages. Forty percent of students grades 6 through 8 and 67% of high school students "maintain a personal Web site" (Higgins, 2009, p. 60). Higher learning institutions are seeing students engaging with social media like never before. A staggering 85% of college students are estimated to use Facebook (Arrington, 2005).

Facebook is a fascinating example of the explosion of Web 2.0 and social media. Facebook is one of the largest and fastest growing of these social network sites ever created. Facebook's incredible popularity is undeniable. At the time of writing, there are 200 million active users in the site, with an average increase of between 600,000 and 700,000 users per day. Facebook currently estimates that more than 100 million users log on to their profiles at least once per day (Facebook, 2009). With the advent of Facebook and its exploding popularity as one of the premiere social destinations for students today, educators and educational content providers are also seeking to understand and ultimately utilize powerful tools like Facebook as a mechanism for delivering and facilitating learning experiences. One English teacher discovered a much greater level of participatory dialog and sharing with relation to reading assignments when she opened the opportunity for class discussion on Facebook (Kitsis, 2008). Another experimental study by Mazer, Murphy and Simonds (2007) showed "higher levels of motivation

and affective learning and a more positive classroom climate" (p. 6) reported from students who had teachers who made themselves available on Facebook.

Clearly, present and future learners are assimilating tools like Facebook and society is witnessing pivotal changes as a result. Yet educational technologists and educators continue struggling to synthesize utility and meaning from the wave that the paradigm shift of Web 2.0 and social media has created for education (Higgins, 2008). While some strongly advocate the use of social tools for educators (Hargadon, 2008), others proceed cautiously, and at times suspiciously, as they explore new contexts in these sharing environments (Piesing, 2007). Yet, the technology and affordances that Web 2.0 tools have given to society have offered increased opportunity in areas such as collaborative or social learning (Haugsjaa, 1996). Disciplines such as English education, for example, already familiar with the advantages of peer-reviews and collaborative learning (1984, Bruffee), can benefit greatly with the increased collaborative capabilities of Web 2.0 tools. Where there is social media, there are collaborative learning opportunities.

As a religious organization heavily invested in facilitating learning and sharing, The Church of Jesus Christ of Latter-day Saints (the Church) seeks ways to leverage social media to both perfect the saints as well as proclaim the gospel, two of the core missions of the Church. This multi-cultural religion with global reach has already explored other new media outlets and has seen success in utilizing sharing tools for spreading the message of the restored gospel. In May of 2009, the Church launched an online radio service (radio.lds.org) featuring 24 hours a day, seven days a week, Church-sponsored content ("Mormon Radio Launches," 2009). One of the most convincing recent cases has been the use of YouTube for a Church-sponsored channel called *Mormon Messages*, a weekly-updated subscription of videos comprised of testimonies of

apostles and prophets along with music and other visuals. Over the Easter weekend of 2009, the *Mormon Messages* video entitled "An Apostle's Easter Thoughts on Christ" brought nearly 500,000 visitors and was the most popular YouTube video for the Easter week of 2009 ("Mormon Apostle's Easter Message," 2009).

Problem

As a continuation of the Church's goals and missions, The Church seeks to explore the benefits of social mediums for both learning and sharing the gospel of Jesus Christ. Recently the Church has focused on one of the fundamental keystones to each member's testimony and the key to new conversions: the scriptures. But how can the scriptures, ancient texts of prophetic writings, be synthesized into the fast-paced twenty-first century technology of social media?

Evidence of Need

The fundamental challenge is one of translating a traditionally strict hard copy book-study experience to a digital format where further social learning and sharing can be achieved—most members of the Church exclusively study the scriptures in their hardback form. On lds.org, the Church's online portal for gospel and Church resources, digital copies of the standard works exist, but with no additional or increased benefit except for access from any Internet-enabled location. With the increased use of mobile devices, Church members can possibly benefit from conveniently embedded scriptures for use anytime, anywhere, but the experience remains an entirely solitary one. How can social media be used to enhance (or at least act as a supplement to) meaningful scripture study?

Given the vast number of members and non-members alike that use social media tools like Facebook on a regular basis, the Church seeks to provide a tool for the scriptures to be both explored and shared while allowing the learner to engage inspiring and uplifting material through

a common interface. This need has given rise to the LDS Church's commission of the Social

Scriptures Application, a web-based application that can be used by Church members as a

scriptural educational resource.

Circumstances/Constraints of Design

As with any design or development project, naturally occurring circumstances and client-

imposed requirements may place constraints on the scope and breadth of a project. These

constraints and circumstances are discussed in the following paragraphs.

Client-imposed constraints. Given the potentially limitless number of possibilities, time,

and cost that could go into a fully-featured social application, the Church has decided to

prototype a proof-of-concept that will serve as a basis for research into the usefulness as well as

the challenges of providing the scriptures through a social platform. Originally, the project

deadlines were stringent enough to only allow the tool to focus on integration with a single

gospel resource, the Doctrine and Covenants (D&C). After a few phases of evaluation, however,

the tool was prototyped for use with any of the Church's standard works (The Old Testament,

The New Testament, The Book of Mormon, The Pearl of Great Price, and The Doctrine and

Covenants).

Jointly with the goal of providing a social scriptures environment, the LDS Church also

will launch a scriptural Application Programming Interface (API) for easily connecting scriptural

text with third-party applications (planned for 2010 launch). The upcoming "Scriptures API" will

provide an XML REST (Representational State Transfer) API for accessing any range of

scriptural text. The Social Scriptures application will be designed to access this API upon

completion of the development phase. The completed design of this application prototype

assumes the successful completion and launch of the Scriptures API.

Environment-imposed constraints. Initially, the starting concept of the Social

Scriptures application was based in the Facebook Application Platform. Applications that are

built for the Facebook Platform must operate in a peculiar paradigm: while not residing on

Facebook's website, they are meant to be a seamless extension of the overall Facebook

experience. This creates a few potential challenges for Facebook application developers.

Facebook application limitations. Facebook applications rely on an extensive and well

documented system called the Facebook Platform. All Facebook applications must follow the

architectural model outlined by the Facebook Platform in order to be compatible with the main

Facebook website. This is by design. When using Facebook's Developer Program, creators of

Facebook applications can access APIs that integrate with Facebook features and functionality in

order to provide a rich, Facebook-centered experience ("Anatomy of an App," 2008). Facebook

developers and designers maintain that a "good" Facebook application is one that interfaces

smoothly with the Facebook interface, rather than feeling like a separate experience (Konrad,

2008).

One of the limitations of Facebook applications is that they do not reside on Facebook

servers. As such, the LDS Church was to provide server capacity as well as storage and database

connectivity for hosting and managing traffic to the application. This led to fundamental

questions as to the value of creating an entire system to support a new platform, when the

already-in-use LDS Accounts system would be able to support an environment with sufficient

capacity and storage. This discussion weighed in to the ultimate decision to move away from

Facebook as the delivery platform.

Post-Facebook constraints. Ultimately, the design evolved into an application

independent of a social platform. The newly envisioned application can be used by other tools

such as Facebook, but it will also be available standalone. This decision eliminates the need for

integration with the Facebook API, but also eliminates any automatic benefits received from

integrating into Facebook's social network. In this sense, the final application would be available

on Facebook as a separate, non-integrated "widget" of sorts. This design decision also essentially

removed any former Facebook-related constraints from the design process. In order to provide

the platform for user management in the application, the LDS Accounts system would be used.

This posed an entirely different set of constraints.

LDS Accounts constraints. Although now free from Facebook constraints, the move to

user management by the LDS Accounts system presented a few interesting challenges. One

lingering challenge is that Church members may very well not use their LDS Account on a

regular basis, so providing the LDS Accounts system as the only option for access to the

application could be a deterrent for some users. Even more challenging is that LDS Accounts has

yet to be used in any kind of social context. The only grouping of user accounts is done

automatically, behind the scenes, on varying Church unit levels when a member updates his or

her membership information in the Church's membership record management system. The

implications of allowing user-controlled grouping of LDS Accounts, essentially creating a social

platform from membership accounts, have not been explored.

<div align="center">**Analyses**</div>

The following paragraphs describe the supporting analyses that led to design decisions

for the Social Scriptures application.

Current Training and Resource Analysis

The most prevalent and extensive resources comparable to the Social Scriptures are the

resources found on the lds.org website. Church members have the ability to access lesson

materials and manuals, scripture passages, ward websites, museum and exhibit information, and a great deal more. The usage of the Church's website is largely focused on just-in-time preparation for Church-meetingrelated activities. This results in a pattern of usage for lds.org that spikes on Saturday night or Sunday morning, right before Church meetings for the vast majority of members.

Other resources for sharing gospel resources include the scriptures.lds.org portal (housed on the lds.org website), the radio.lds.org internet and HD radio station, the General Conference podcasts, and the *Mormon Messages* YouTube channel.

Existing product/competition review. In the arena of social media platforms, a similar tool to what the Social Scriptures application will accomplish is a Facebook application called "The LDS App." This application exists on the Facebook Platform and is made by The More Good Foundation and is not a Church-approved resource. Other third parties have developed basic scripture libraries on mobile devices such as the iPhone, the Blackberry, and others. The Social Scriptures application will provide the first authoritative, sponsored, social media-centered gospel resource.

Design Goals

The LDS Church's website's core experiences are centered on the principles of Receive, Seek, Interact, Study, and Serve. In council with the project stakeholders, design goals were discussed in the context of the end user experience for the Social Scriptures application:

- I would like more reminders of my divine nature in my everyday routine.
- I would like reminders of the reading for this week's Sunday School lesson.
- I would like to find ways to connect with my online friends on spiritual topics.

Table 1
Target population analysis

Findings	Source	Implications
Church members use gospel resources for preparing talks, lessons, etc.	LDS Website Analysts	Feature will include commonly-accessed preparation resources.
Facebook applications are most successful when closely integrated with Facebook experience.	Konrad (2008), Facebook Developer documentation	Tool could utilize multiple "integration points" with Facebook to provide a rich, learning and sharing-centric experience.
Social tools such as Facebook frequently direct users towards news items (i.e. the news feed) and status updates from friends.	Observation (Facebook redesign)	Sharing scriptural commentary/insights can utilize "feeds" of study groups to organize annotations.
Social media users are most often engaged in sharing-centric activities.	Facebook statistics	Including sharing capabilities and customization will enhance the social aspect of the application.
Church members are provided reading schedules for Sunday School classes.	Client/observation	Inclusion of reading schedules and updates would facilitate members' learning and reading of Sunday School readings.
Church members are oftentimes challenged to make scripture reading goals (e.g. President Hinckley's 2005 challenge to read the Book of Mormon by the end of the year).	Client/observation	Inclusion of reading goals would provide another resource for members to integrate gospel learning with their usage of social media.
Church members most frequently study the scriptures in hard copy format.	Client/observation	The application should provide a comfortable, easy-to-use "reader" that mimics or seeks to enhance the hard copy.
Church members may want the ability to import "archived" scripture journals of ancestors or others.	Client request	The application will be designed for viewing multiple kinds of annotation feeds, including archived feeds.

- I struggle to read my scriptures regularly; I want reminders in the places I frequent.

Design Criteria

Facebook criteria. Based on the initial internal and external constraints on the Facebook application, the initial version of the gospel Resource Facebook Feature was to consist of a prototype that would include the web architectural framework for adding future gospel resources and functionality. The basic criteria for the prototype were defined:

- The prototype would be a Web-architected Facebook application.

- The prototype would include the Doctrine and Covenants as an initial resource.

- The application would include the ability for users to "add" the application to their profile.

- The application would provide readings for Sunday School schedules for the Doctrine and Covenants as selected by the user.

- The application would provide an interface for setting and tracking reading goals for the Doctrine and Covenants.

- The prototype would include sharing settings that will allow a user to easily share and broadcast reading snippets as well as progress made on reading goals.

Post-Facebook criteria. As later the target environment was shifted from Facebook, the design criteria were reevaluated. These criteria were defined:

- The application would be platform-independent.

- The application could be installed on a member's computer or embedded in a Web resource or a mobile implementation.

- LDS Accounts would be used as login/user verification and credentials.

- The application would provide the ability to create and manage study groups focused on reading goals.

- The application would provide members with the ability to annotate scriptures in-line.

- The application would organize annotations to blocks of scripture using a "feeds" approach (each group's annotations will be represented in an XML feed that the user can hide or show).

<div align="center">**Design Solution**</div>

This section will review the aspects of the proposed design solution as well as the rationale, process, research, and circumstances that led to the final design solution.

Process and Rationale

The initial process and rationale behind the design solution included both Facebook-specific considerations as well as post-Facebook considerations. Both approaches are discussed below.

Facebook considerations. In order to provide a robust, dynamic, and easily updatable application, it was important that the application be constructed in such a way as to provide maximum compatibility with Church software and support, as well as provide a supportable cost model for scalability. To accomplish this, the initially proposed Facebook Feature was to be developed using the CakePHP framework on a LAMP-based server setup (Linux, Apache, MySQL, PHP). This would provide key benefits for the application that will ensure that the final prototype could be easily modified, added to, and integrated closer into the Church's web backbone in the future. This setup would have included several benefits:

- All software (Cake, LAMP) is open source

- All software is free

- All software is supported by Church engineers and network support

Given these benefits, the initial Facebook Feature would have been both easy and inexpensive to implement.

Post-Facebook considerations. After removing Facebook as the social media platform, most of the previous technical considerations were no longer relevant. At that point, the Social Scriptures application prototype did not necessarily need to be tied to any one or single technology—front- or back-end.

The resulting prototype was developed in a far simpler, more high-level environment. "Look and feel" or any considerations for color schemes, artwork, or graphic design were removed. Information architecture, consistent wireframing (Morville & Rosenfeld, 2006), and a basic, functional prototype were the main goals of the new revision of the Social Scriptures project.

Relevant Design Principles and Research

To successfully deploy a useful and functional prototype that provides a solid platform for scalability requires sound architectural and design principles. These principles are discussed in the following paragraphs.

Facebook considerations. The database structure of the application would rely on, as its data source, relationally linked MySQL database tables. This is a very common, efficient, and useful model of database architecture. It is also commonly used by Church developers who will support the final application.

The architecture of the Facebook application would be modular in nature—that is, the focus would be on architecting the core framework of browsing and accessing readings of gospel

resources that could be added, modified, or removed separate from the application itself. This would provide a stronger model of future support and sustainability.

An object-oriented programming (OOP) paradigm was to be used to also ensure scalability and organization, as well as future maintainability. Programming principles native to the OOP strategy such as modularity and abstraction allow for a clean organization, easier updates and additions, and overall better-performing application. CakePHP, an object-oriented PHP application framework, was planned to be utilized to minimize costs associated with background database retrieval logic, template management, authentication, security, and more. CakePHP was chosen because of its strong MVC (Model-View-Controller) design pattern influence, which is another common and supported programming method for Church developers ("Features," 2009).

For the front-end user interface developed for Facebook, HTML, and CSS layouts (integrated with the CakePHP View framework) were to be used to provide the most consistent and compatible experience possible for the application's users. This was to provide another usable standards-based benefit for Church developers as well as seeking to provide the best browser-compatible model possible.

Post-Facebook considerations. Shifting dramatically from low-level technical requirements to higher-level designs and brainstorming was a fundamental shift in the nature of the Social Scriptures project. Instead of determining which web programming language to use, for example, broader design principles regarding usability and wireframing were relied upon. Transitioning from programmer to the role of information architect and experience designer was a drastic change.

Although it was not consciously planned for in the initial analysis, the overall design process that led from revision to revision and guided major design decisions greatly resembled the rapid prototyping design methodology. In rapid prototyping, the important visual and semi-functional characteristics of a design are developed while at the same time leaving much of the core programming logic untouched (Jones, Zhongmin, & Merrill, 1992). This design process seemed to, in the end, give a good amount of support for the value of rapid prototyping and iterative development, where revisions can quickly be modified, tested, analyzed, and improved upon without wasting a great amount of resources (Larman & Basili, 2003). These iterations were much quicker and less costly than fully developing each revision of the design with the needed feedback and changes. This yielded a design environment that was very responsive and flexible, where changes and modifications could be incorporated easily and quickly to produce a new prototype for testing. Each new prototype could be more quickly improved upon, allowing the overall design process to be very cyclical and productive.

A rapid prototype based from Balsamiq Studio's *Balsamiq Mockups* product allowed for ease and flexibility in layout design, with few or no constraints with visual assets (all components are static and are largely meant as placeholders), and a presentation mode that allowed for demoing and creating a semi-functional prototype.

Principles in usability were mostly focused on common-sense approaches, including only essential copy, obvious layout design, and web user-centric design (Krug, 2005). Basic information architecture principles were applied to the wireframe design as found in Morville and Rosenfeld's recommendations (2006). Organization of content was based on a variety of drill-downs, wizards, and pop-ups (Tidwell, 2005).

Initial Solution

Although it was ultimately discarded, the initial designs solution will be discussed and reviewed below, in part to show the evolution of the design process.

Design architecture. The initial design solution was embodied in the LDS Facebook Feature Prototype, shown in Appendix A. For the Facebook solution, the design architecture focused around three main user experience goals:

1. Browse gospel resources.

2. Set goals individually or with groups.

3. Share updates, scriptures, or accomplished goals with network.

Other areas, including the home screen and the settings area, were created either to direct the user to the main goals of the application, or in the case of the settings page, were meant simply to provide needed application controls for sharing, broadcasting, viewing others' notices, and (if necessary), removing the application altogether.

Surface design. The initial goal with regards to surface design was to design an experience that would complement the Facebook interface. This is considered a "best practice" when designing Facebook applications. As Facebook users are exposed to different kinds of applications within the Facebook site, radical departures from expected look and feel (e.g. color scheme, font family or font size, etc.) can clash with the flow of the Facebook experience. Emulating closely the surface design of Facebook allows the application to be a more seamless part of the Facebook user experience; on the other hand, users may find themselves confused or disoriented when presented with a radically different design inside of a Facebook application (Konrad, 2008). In order to accomplish this goal of consistency, the initial Facebook prototype used the same font family and many of the same colors as the main Facebook interface.

Navigation components such as the familiar Facebook tabs were emulated as well to reinforce the connection in the two designs.

While maintaining a surface closely tied to that of Facebook, it was also important to include the Church "brand" throughout the prototype. This surface design goal was almost as important as maintaining consistency between Facebook and the prototype, especially when related to lds.org. The Church project stakeholders wanted to reinforce and complement the resources already found on lds.org, not compete or clash with them. Luckily, this was not especially difficult, especially due to the fact that the two main hues of blue for both lds.org and Facebook were very similar, and actually complemented each other quite well.

Strategy design. As mentioned earlier, the main focuses of the application were to browse gospel resources, set and track goals, and share with others. These focuses led to the wireframe shown in Appendix B "Facebook Meta Wireframe." This wireframe outlined the central focuses of the application and how they would be implemented in the application.

Also, the initial goal of close integration with Facebook highlighted the importance of multiple integration points with other native parts of Facebook (e.g., the News Feed, User Profile, and others). This was summarized in the document found as Appendix C, "Facebook Integration Points."

The results of these observations and analyses evolved into several key strategic decisions:

1. A Home Page would provide a landing area where members accessing the application would get a high-level view of important areas of the application. It would show upcoming goals, current readings to complete, and other users' updates.

2. The three key areas (browse, goals, and sharing) would be featured on the main

   navigation bar for ease of access.

3. Connection between the three areas was to be reinforced so as to enhance the experience.

   For example, users would be able to set goals while within the "Browse" section, and

   would be able to share notifications while in the "Goals" section.

4. Integration points would be important for sharing notifications with a user's network.

   a. News Feed Page: The News Feed is a central part of the Facebook experience,

      where users can see snippets of the latest information from their friends, including

      things like status updates, application updates, and posted media. Publishing

      completed goals or read scriptures on the user's News Feed Page provides a great

      way to share gospel resources.

   b. Profile Page: As users browse each other's pages on Facebook, the Profile Page is

      the "home page" for each user. This page shows a user's biographical

      information, as well as latest updates, likes/dislikes, and more. Many applications

      post a small amount of information on the user's Profile Page, both to increase

      exposure for the application as well as provide interesting and fun information

      about the user. The strategic decision was made to include information about a

      user's reading goals in order to provide another sharing opportunity as well as

      exposure for other potential users of the application.

   c. Alerts: Based on a user's Facebook Alerts settings, he or she can receive email

      "alerts" when an event occurs. Examples of alert events can include when friends

      have posted on a user's wall, when a friend writes a message, when a friend

      comments on a shared discussion, and others. Continuing to look for gospel

sharing opportunities, the Social Scriptures Facebook application was designed

also to allow for emailed alerts for when a friend completes a shared goal or

completes a reading. These alert preferences would be managed by the user.

Logic/software design. For the Facebook prototype, many of the logic and software

design decisions were discussed previously. The server setup included a very common LAMP

setup (Linux OS, Apache, MySQL, and PHP). For back-end business logic, the PHP MVC

framework CakePHP was decided upon as a robust, very scalable environment. To continue

maintaining consistency between Facebook and the application, HTML/CSS would serve as the

front-end markup. Other front-end platforms like Flash or Silverlight could have proved to be a

distraction from the core Facebook experience. CakePHP view rendering is also by default meant

to be output as HTML, so HTML/CSS was a simpler route than using a non-standard alternative.

Evolution of the Design

The following sections review the revisions of the design project, as well as how testing

and further analysis led to larger changes in the final design.

Design versions. Initially, the prototype was completely mocked up in an HTML/CSS

prototype that emulated the Facebook environment. This rapid prototype served as a source for

feedback, initial testing, and further evaluation of the goals of the project.

After initial design revisions, including changes to navigation, section headings, and

some surface design elements, the initial prototype was considered a high fidelity start for the

next phase of development. Further evaluation, both by the designer and by client reviews, led to

the design decision to prototype a social platform–independent tool that could be leveraged

without Facebook (or any other social media platform) constraints.

User testing plan and results. The initial user testing was done only with project stakeholders. This testing scenario was somewhat less than ideal as gathering real end-user feedback would have proved far more valuable. However, stakeholders felt that the cost (of both time and resources) of testing the early versions of the prototype on end users was too great. The initial prototype was to be tested only internally, with a more polished version later to be tested with end users.

Design modifications. The results of testing with project stakeholders led to some fundamental challenges that ultimately paved the way for abandoning the Facebook Platform.

Theoretical issues. The most basic challenge apparent after completing and evaluating the Facebook prototype was the fundamental question of where the Church wants to endorse its resources. Providing a social context for studying and sharing the scriptures inside of Facebook had great implications, but the end result was that users would rely more and more on Facebook for gospel resources and less and less on lds.org. Even more disconcerting was the realization that any Church member wishing to benefit from what the Social Scriptures application has to offer would have to first register as a Facebook user. Furthermore, Facebook is still competing for a domination in the global social media market share similar to what it enjoys in the United States (Kennedy, 2008). Because of this ongoing competition, Church members in other countries that use differing social media platforms would not benefit from the application. This overall challenge can be summarized thus: "Do we want to create a resource in Facebook that drives members to Facebook, or do we want to create a Church resource that drives members to Church resources?"

Practical issues. Beyond the basic, fundamental questions as to the purpose and outcome of the application inside of Facebook, there were a few technical challenges that also hindered

the experience of the Social Scriptures Facebook application. The most pressing was the need for dynamic creation of groups in Facebook. Facebook has the ability to create groups from invited friends, have discussion boards inside of group pages, and aggregate group news items, but these groups cannot be created or managed without manual user interaction. So, for example, if a Church member wanted to create a Sunday School study group for the New Testament, he or she would have to manually create that group in Facebook, and as a result, the group settings in the Social Scriptures application could not be managed automatically. Groups cannot be a native part of the application, which proved to be too great a challenge to overcome by other means. This dilemma was a large factor in determining to move away from Facebook as the social media platform for the Social Scriptures application.

Feasibility Projections

A few central factors for feasibility are discussed below, as well as each factor's potential impact for the final implementation of the design.

Cost. The initial Facebook project was meant to function as a working, high-fidelity prototype to be used for pilot testing and user feedback. This development as described was estimated to require approximately 150 hours of design (including analysis) and development.

The final Social Scriptures application prototype will have a significantly higher cost of development than the Facebook application. The costs rose because the final project will be unable to rely on the Facebook API and Application Platform for engineering complex associations and groups. These associations, groups, and networks will need to be implemented inside the Church's LDS Accounts system.

Maintainability. In the initial Facebook prototype, the software logic and architecture design decisions were in large part finalized. This would have ensured a good deal of

maintainability, as approaches such as using an open source, Church-supported LAMP setup, CakePHP with a very extensible MVC model, and standard HTML/CSS would all be easily maintainable and updatable.

With the shift to higher-level design without regards to platform or technology, the question of maintainability is yet to be determined. Most likely, as the design is refined and the logic and architecture decisions are made after the new design is finalized, maintainability projections will become more apparent.

Sustainability. The sustainability of the Social Scriptures application will greatly depend on scale—which will depend on the final placement of the back-end architecture. Even in the initial Facebook design, scalability of the prototype application that was to be used for potentially millions of members was a large concern. Eventually, the databases and back-end scripts would have to be migrated to the central Church servers so as to be supported adequately and allow for massive scaling. This will hold true for the platform-independent Social Scriptures application as well.

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Production

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The following paragraphs review various stages of the production process, including schedules, outcomes (deliverables), changes, and details of the final production.

Production Plan

Project start: February 20, 2009

Analysis completion: March 10, 2009

Design completion: March 23, 2009

Development completion: April 10, 2009

Implementation/evaluation completion: May 4, 2009

Elements Produced

- High fidelity HTML/CSS Facebook application prototype

- Back-end architecture in place

- Doctrine and Covenants fully integrated

- Initial surface design complete

Design Changes during Production

As reinforced throughout this document, the largest change in design and production was the radical shift to a high-level prototype that sought to address more fundamental theoretical and practical concerns for the Social Scriptures application.

The result of this change was that most of the initial work with the Facebook prototype, including all of the surface design, HTML/CSS development, etc. was discarded.

Actual Production

This section examines the individual elements of the finished design prototype and what was actually produced, differing in some areas from what was initially planned for. Costs, schedule, and key insights will be reviewed.

Costs. The entire cost of the initial Facebook phase of design and development totaled close to 70 hours. This included all analysis, design, and initial development of the prototype. After the interim evaluation phase, and on into the completion of the second platform-independent prototype, the cost approached 40 hours, totaling the cost for the project at nearly 110 hours.

Actual schedule.

Project start: February 26, 2009

First analysis completion: June 15, 2009

Design completion: July 20, 2009

Second analysis completion: November 25, 2009

Implementation/evaluation completion: Ongoing

Key insights. Communication and constant feedback are very important in the production process. This was especially true for this project, where expectations and assumptions were challenged and eventually the project itself changed course. Being on the same page with project stakeholders saved potentially dozens of hours of wasted design and development.

Current Prototype

The final product is still being refined, evaluated, and analyzed. In its current state, the prototype exists as a group of mockups shown in Appendix E, "Rapid Prototype Mockup."

Implementation/Management Requirements

After the Social Scriptures prototype has been refined and finalized, project stakeholders can rely on the below management plan for the next steps towards implementation and development of the final, working application. As the final project begins, development parties (whether as Church-employed developers or outside contractors) will need to be involved in the planning stages to assess costs, feasibility, and implementation strategies for development of the needed back-end and front-end systems. Upon receipt of cost estimates and implementation schedules, final deployment schedules can be finalized.

Evaluation Plan

End user feedback will have a great impact on the direction of the final Social Scriptures product. This can be accomplished through a variety of means:

- Usability lab testing: Set up a simple lab scenario with a high-fidelity prototype of the application, invite potential users of the application that have no knowledge or investment in the project, then observe and record how users use the application. What frustrations do users see? Can they accomplish simple tasks? What are their observations about what works and what doesn't work? Observations can be recorded and logged in systems such as a database, bug tracking system or even a wiki.

- In-home visits: Visits to member's homes would be even more accurate than usability lab visits in accomplishing the same observation and gathering of user data as above.

- Pilot testing: As an initial version of the application is completed, pilot tests can be used with small groups of Church members in order to detect problems, get feedback on the effectiveness of the interface, and run simulations on scalability to further refine implementation plans. Observations can again be recorded in the same system as before.

Implementation and Evaluation Issues/Knowledge Gained from Testing

"Test early, test often" seemed to be a mantra for this project. As design and strategic decisions were made, they were tested in a prototype environment that allowed for a relatively low-cost, low-risk feedback loop. This feedback loop drove innovation tempered by practical testing.

The greatest single concern in the implementation and evaluation process was a lack of the voice for the end user. Without much concrete data to drive design decisions, the initial design process became very organization-centric, rather than user- or customer-centric. We are left to wonder at this stage of the product what decisions would have been made differently, if any, had the user been involved early on in the design process.

Results

At the twilight stage of analysis and design (for the second time), the results of the process and approach to solving this design problem drove the product evolution to areas that surely no one expected at the onset of the project. Some of the insights achieved from these results are discussed below.

Theoretical Insights

Unfortunately, much of the theories surrounding the proposed value of translating the scriptures into a social environment are yet to be tested. Questions involved in the initial problem presentation still remain, such as those regarding how effective social media tools will be in helping members to learn and share the gospel. We've only begun to implement a possible design solution to this problem. As the project nears real pilot testing, the answer to this question and others will undoubtedly become more apparent.

Product Insights

The initial vision of a Facebook application that brings the experience of browsing scriptural resources to a social media context was a great start. It's very possible that if certain limitations didn't exist in the Facebook Platform, the project stakeholders still might have determined the Facebook application to be the best route for an impactful product. Thankfully, though, the flaws that proved to change the course of the product were discovered in the relatively early stages of design and development. Had the product continued its course until final implementation, it may have become apparent all too late that the product was destined to undermine the original goals of its commission. A great deal of resources would have been wasted if that proved to be the case.

During the process of initial evaluation and feedback, having a functional prototype brought to light many of the problems that may have gone unnoticed in a medium less faithful to the final environment. These quick revisions and rapid prototypes allowed for changes in design and functionality to be tested on a very basic level and some initial insights and understandings were achieved without going too far down the path of coding a final product. The initial prototypes served their purposes well even though they were ultimately abandoned.

In the final (most recent) version of the platform-independent Social Scriptures application, an even more basic tool was used that allowed for high-level interaction design and information architecture. In this way, the principle of "test early, test often" could be continued to gain further insights earlier in the process of refining the product.

Process Insights

One of the central lessons of designing this solution was the cyclic nature of design. In a true design process, each individual element of a problem is analyzed, put forward in design, developed, implemented, and evaluated. The quicker a design process can follow these steps and the more the process can cycle back with changes, the more successful the process will be in arriving at the right design solution in an efficient, timely way. With the design methodology evolving into a model resembling rapid prototyping, our process was flexible enough to handle many revisions and drastically change without bankrupting the project. Each element was critical to the process of finding the next revision to the design process. Without a quick model for producing revisions that could be tested and analyzed, further and more expensive means would have been required to find out and correct needed problems (assuming the problems would eventually be detected).

Conclusions

The stakeholders involved in this project, from designer to product manager, have watched the Social Scriptures product evolve from an initial vision of a Facebook application to a universal web-based application that can meet the needs of far more members and, as well, foster a learning environment where the value of collaboration while studying spiritual texts can be explored.

Appendix A

Facebook Wireframe

1.1

Canvas Page

This is the basic landing page for the application. It will contain basic information about what the Feature is, and how it works.

Here users can, if they are not already subscribed, begin the process of subscription to the LDS Gospel Resource Facebook Feature by adding the application to their profile. This is a Facebook-managed process.

If the user is already subscribed, then it will give them an entry to the user Home page.

facebook   Home   Profile   Friends   Inbox   Cahlan Sharp   Settings   Logout   Search

LDS Gospel Resource Feature

Lorem ipsum dolor sit amet. Consectetur adipiscing elit. Donec dui. Vivamus id leo. Nam scelerisque sollicitudin lectus. Aliquam erat volutpat.

(Add to Profile)

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Donec dui. Vivamus id leo. Nam scelerisque sollicitudin lectus. Aliquam erat volutpat. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Donec dui. Vivamus id leo. Nam scelerisque sollicitudin lectus. Aliquam erat volutpat.

- Gospel Resources
- Goals & Schedules
- Share your updates

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Donec dui. Vivamus id leo. Nam scelerisque sollicitudin lectus. Aliquam erat volutpat.

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OF LATTER-DAY SAINTS

1.2

Profile Page

Any user that has added the Feature to his or her profile will have access to a small, condensed view of relevant goals, alerts, readings, or other information relating to their account with the Facebook Feature.

This view will display in the user's profile page, where they can have the option to reposition or remove it if they wish.

If the user clicks "Read more," they will be taken to the My Readings section of the Feature.

If the user clicks "Mark as read," they will be taken to the feature and see the confirmation dialog found in 1.4.1.

LDS Gospel Resource

My goals
December 31, 2009: read the Book of Mormon
Mark as completed | Edit goal

This week's readings:
- D&C 42,43 (Sunday School) |
  *Hearken, O ye elders of my
  church, who have assembled
  yourselves together in my name*
  ... Read more | Mark as read

1.3

About Page

This page will be another entry point for the LDS Gospel Resource Facebook Feature.

The About Page is standard for any Facebook feature. It contains a small amount of information about the feature, as well as options to add the feature, learn more, or see ratings or discussion related to this feature.

If the user selects "Go to Application," they are taken to the Feature home page. If they select "Add to Page," they are taken to a Facebook-controlled process of customizing where the Feature appears in their account.

1.4

Home Page

This is a user-specific Home Page for the Facebook Feature.

On this page, users will get a condensed view of reading schedules, goal progression, news, and navigational options for viewing sections of the Feature.

Clicking on "Mark as completed" will pop up a dialog box similar to that found in 1.4.1 to confirm that the user will mark that goal as completed. If the user chooses to edit the goal, he/she will be taken to the Goals and Schedules page.

Clicking on "Read More" will direct the user to the My Readings section, where current readings are posted. Clicking on "Mark as read" will popup the dialog box found in 1.4.1

---

facebook   Home   Profile   Friends   Inbox   Cahlani Sharp   Settings   Logout   Search

LDS Gospel Resource Feature

| Home | Resource Center | My Readings | Settings | Goals & Schedules |

Home Page

Upcoming goal: read the Book of Mormon (by April 1, 2009) Mark as completed | Edit goal

This week's readings: D&C 42,43 (Sunday School)

" *Hearken, O ye elders of my church, who have assembled yourselves together in my name* ... Read more | Mark as read

Feature news: *(3/29/2009)* Lorem ipsum dolor sit amet, consectetur adipiscing elit. Donec dui. Vivamus id leo. Nam scelerisque sollicitudin lectus. Aliquam erat volutpat.

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OF LATTER-DAY SAINTS

1.4.1

Confirm Reading Popup

This simple popup confirms whether or not the user wishes to mark the current scripture as "read."

The look and feel of the dialog box will be uniform through the Feature for any other similar dialog boxes.

facebook   Home   Profile   Friends   Inbox   Cahlan Sharp   Settings   Logout   Search

LDS Gospel Resource Feature

Home   Resource Center   My Readings   Settings   Goals & Schedules

Home Page

Upcoming goal: read the Book of Mo

This week's readings: D&C 42,43 (Su

Hearken, O ye elders of my church,

Confirm

Mark scripture as read?

OK   No, Thanks

Feature news: (3/29/2009) Lorem ipsum dolor sit amet, consectetur adipiscing elit. Donec dui. Vivamus id leo. Nam scelerisque sollicitudin lectus. Aliquam erat volutpat.

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JESUS CHRIST
OF LATTER-DAY SAINTS

1.5

Resource Center

This page allows users to view current Gospel resources, as well as drill down into those resources in order to set goals or track reading schedules.

If the user selects the "Browse Readings" link, he/she will be directed to 1.5.1, where they can browse the resource directly.

If the user selects to begin a reading schedule or to create a reading goal, they will be redirected to the Goals and Schedules page, where the customization and creation of these items will take place.

facebook   Home   Profile   Friends   Inbox   Cahlan Sharp   Settings   Logout   Search

LDS Gospel Resource Feature

Home   Resource Center   My Readings   Settings   Goals & Schedules

Resource Center

Doctrine and Covenants

- Browse readings
- Set a reading schedule
- Set a reading goal

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1.5.1

Browse Resource

This page contains an interface for browsing the currently selected Gospel Resource.

1.6

My Readings Page

This page will contain the various readings stored for a specific user's reading schedule.

After reading, the user can "Mark as Read" (see 1.4.1 popup).

The readings are added automatically based on reading schedules set up in the Goals & Schedules page.

1.7

Settings Page

This page contains the basic settings for the application, including alert preferences and Facebook-specific abilities (such as removing the application).

The Sharing Settings will determine the process for publishing news feed items for read passages. If the user selects the "Always share" option, then each passage marked as read will be automatically published to the users news feed. If the user selects the "Ask me" option (this is the default), then each passage will require a confirmation popup (similar to 1.4.1) before the passage will be published and shared in the feed. A "Do not share" selected will result in no publishes to the news feed. The news feed view can be found on 1.9.
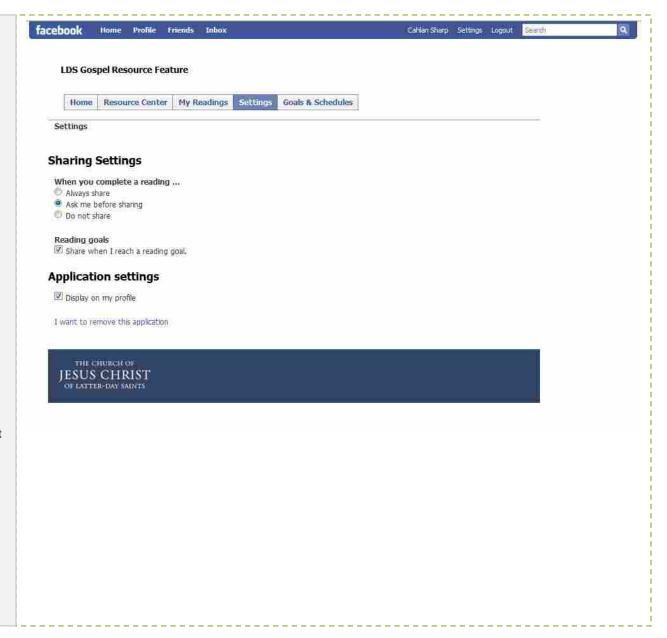
If the user checks the "Share when I reach a reading goal" box, then another news feed item will be published (similar to 1.9) showing that the user completed his/her reading goal.

The "Display on my profile" will allow the user to see the Profile Page addition found on 1.2

---

facebook   Home   Profile   Friends   Inbox   Cahlan Sharp   Settings   Logout   Search

LDS Gospel Resource Feature

Home | Resource Center | My Readings | Settings | Goals & Schedules

Settings

Sharing Settings

When you complete a reading ...
- ○ Always share
- ● Ask me before sharing
- ○ Do not share

Reading goals
- ☑ Share when I reach a reading goal.

Application settings

- ☑ Display on my profile

I want to remove this application

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1.8

Goals & Schedules Page

This section will give users the ability to set and modify reading schedules for a specific resource as well as set, modify and track goals for that resource's readings.
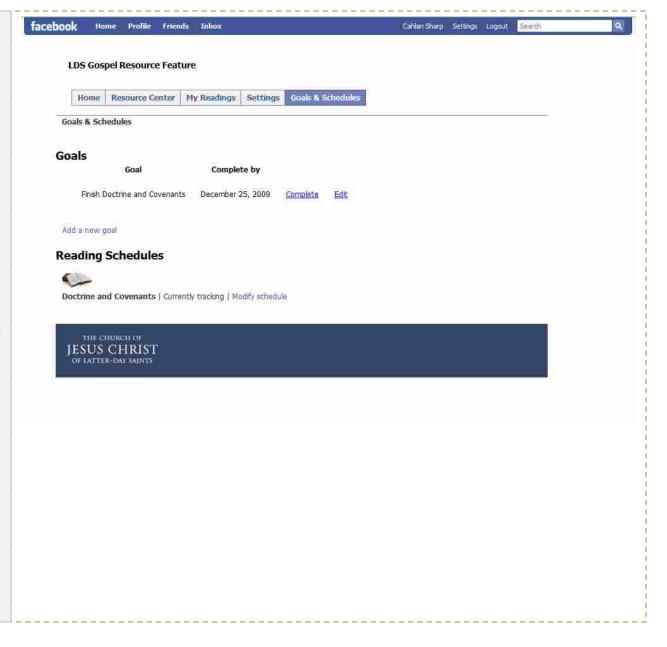
Goals can be marked as "Complete," by the user. After a dialog confirmation (see 1.4.1), this action will publish a News Feed item (per user preference) notifying friends of the user's reading.

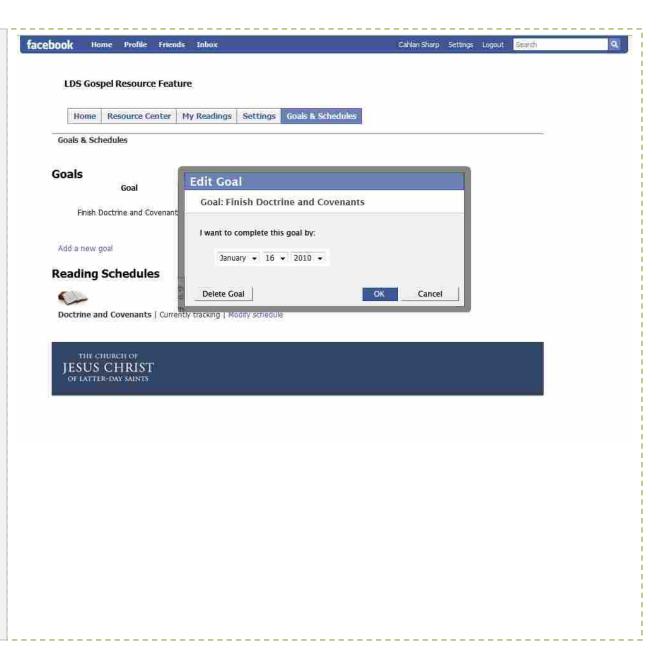If the user selects "Edit" under Goals, they are taken to the Edit Goal popup as seen in 1.8.1.

Users can elect to set up a reading schedule of the Doctrine and Covenants based on assigned Sunday School readings. Activating a schedule will allow the feature to notify the user of a week's readings by sending an alert to the user's account (alerts are tracked and managed by Facebook).

Besides sending an alert, the schedule will also add the reading passages to the "My Readings" page for the user to view and mark later.

If the user selects to "Modify schedule," they will be taken to the Modify Reading Schedule popup as seen on 1.8.2.

---

facebook   Home   Profile   Friends   Inbox   Cahlan Sharp   Settings   Logout   Search

LDS Gospel Resource Feature

| Home | Resource Center | My Readings | Settings | Goals & Schedules |

Goals & Schedules

Goals

Goal	Complete by		
Finish Doctrine and Covenants	December 25, 2009	Complete	Edit

Add a new goal

Reading Schedules

Doctrine and Covenants | Currently tracking | Modify schedule

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1.8.1

Edit Goal

This dialog allows users to edit reading goals by modifying the date by which the goal is to be met.
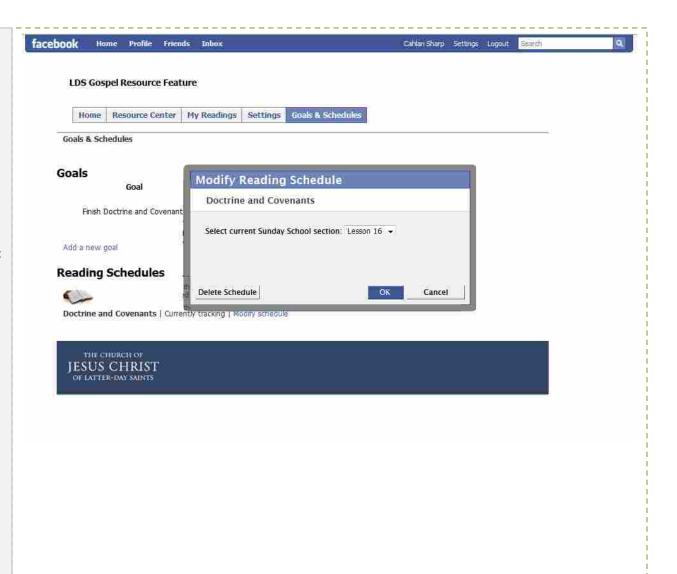
The user can also delete the goal.

1.8.2

Modify Reading Schedule

This dialog allows users to modify reading schedules based on the current Sunday School lesson.

Once the user selects the current lesson, the Feature will then automatically assign readings for the rest of the calendar year based on upcoming lessons as well as church-wide scheduled changes in the schedule such as General Conferences. Since there is no current way to sync with the specific ward or stake Sunday School schedule, the user may have to modify the schedule based on ward or stake conferences or other changes to the reading schedule.

The user can also delete the schedule.

facebook | Home Profile Friends Inbox | Cahlan Sharp Settings Logout | Search

LDS Gospel Resource Feature

Home | Resource Center | My Readings | Settings | Goals & Schedules

Goals & Schedules

Goals

Goal

Finish Doctrine and Covenant

Add a new goal

Reading Schedules

Doctrine and Covenants | Currently tracking | Modify schedule

Modify Reading Schedule

Doctrine and Covenants

Select current Sunday School section: Lesson 16 ▾

Delete Schedule   OK   Cancel

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1.9

News Feed

This is the view that will be published to the users News Feed, which is viewable to all the user's contacts.

It will contain the scripture passage that was read, as well as a link to scriptures.lds.org for the viewer to access the full reading if they choose.

Cahlan Sharp
Just finished reading Doctrine and Covenants section 42: *"Hearken O ye elders of my church, who have assembled ... Read more*
2 seconds ago · Comment · Like

Appendix B

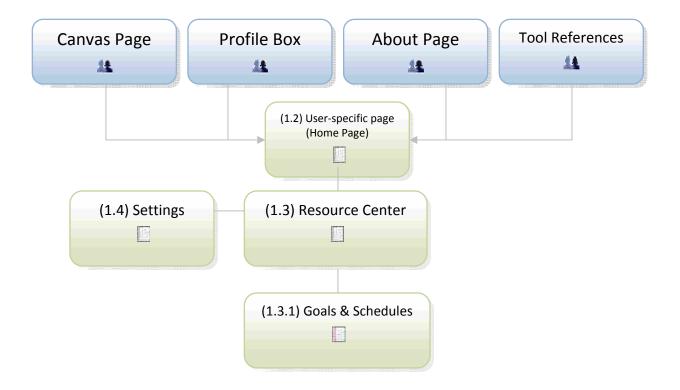## Facebook MetaWireframe

DIAGRAM REFERENCE

1.1   Canvas Page

This is the basic landing page for the application. It will contain basic information about what the Facebook Feature is, and how it works.
Here users can, if they are not already subscribed, begin the process of subscription to the LDS gospel Resource Facebook Feature. If the user is already subscribed, then it will give them an entry to the user Home page.

1.2   Home Page

This is a user-specific Home Page for the Facebook Feature. On this page, users will get a quick view of reading schedules, goal progression, alerts, and navigational options for visiting the Resource Center or the Settings page.

1.3   Resource Center

This page allows users to view current gospel resources, as well as drill down into those resources in order to set goals or track reading schedules.

1.3.1   Goals and Schedules

This section will give users the ability to set and modify reading schedules for a specific resource as well as set, modify and track goals for that resource's readings.

1.4   Settings

This page contains the basic settings for the application, including alert preferences and Facebook-specific abilities (such as removing the application)

Appendix C

Facebook Integration Points

About Page	Canvas Page	Profile Box

Feed Forms	Alerts (email)	References to Tool

References to Tool
- Applications menu
- Bookmarks
- Application info
- Privacy settings

Appendix D

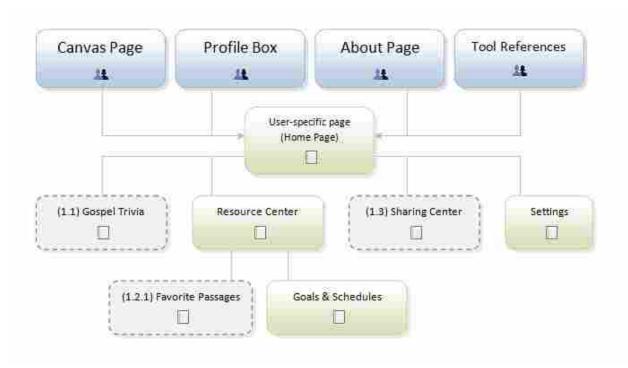Facebook Possible Future Roadmap

DIAGRAM REFERENCE

1.1 Gospel Trivia

This page will feature fun and interesting ways that users can learn more about gospel Resources. Using trivia questions, users will be able to learn fun facts about Church history, the Scriptures, and more.

1.2

1.2.1   Favorite Passages

Here users will have the ability to save favorite passages of scripture, including comments about why they were impressed by those particular passages. These will be broadcastable and shareable.

1.3 Sharing Center

The Sharing Center will bring all social activities in the LDS Gospel Resource Facebook Tool together; it will allow users to view and modify sharing settings (e.g. 'Broadcast scripture schedule,' 'Allow automatic updates of goals on news feed,' etc.)

Appendix E
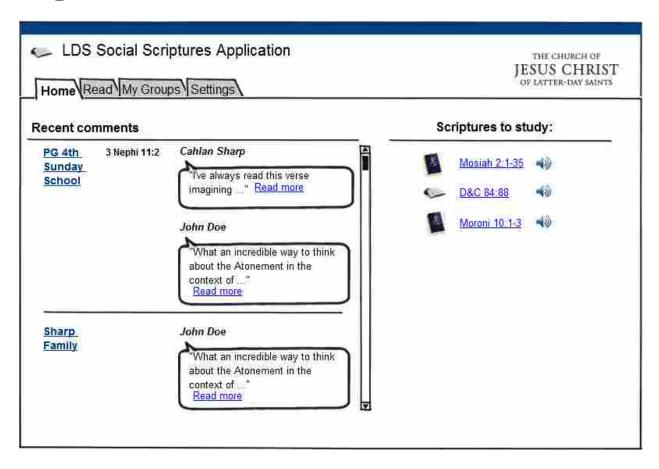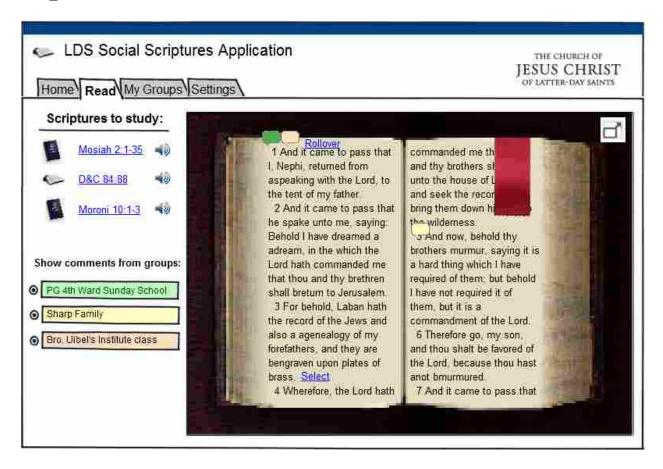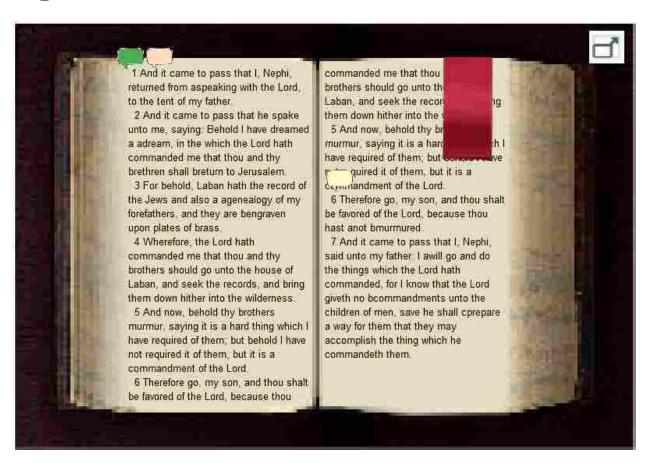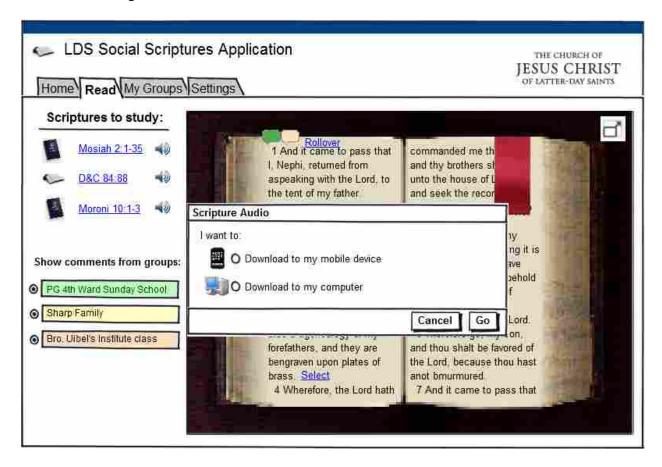
Rapid Prototype Mockup

start_normal

LDS Social Scriptures Application

THE CHURCH OF
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OF LATTER-DAY SAINTS

Sign In

LDS Account User Name:

cahlan

Password:

****

Sign In   Can't Sign In? »

home_normal

read_normal

read_fullscreen

1 And it came to pass that I, Nephi, returned from aspeaking with the Lord, to the tent of my father.

2 And it came to pass that he spake unto me, saying: Behold I have dreamed a adream, in the which the Lord hath commanded me that thou and thy brethren shall breturn to Jerusalem.

3 For behold, Laban hath the record of the Jews and also a agenealogy of my forefathers, and they are bengraven upon plates of brass.

4 Wherefore, the Lord hath commanded me that thou and thy brothers should go unto the house of Laban, and seek the records, and bring them down hither into the wilderness.

5 And now, behold thy brothers murmur, saying it is a hard thing which I have required of them; but behold I have not required it of them, but it is a commandment of the Lord.

6 Therefore go, my son, and thou shalt be favored of the Lord, because thou hast anot bmurmured.

7 And it came to pass that I, Nephi, said unto my father: I awill go and do the things which the Lord hath commanded, for I know that the Lord giveth no bcommandments unto the children of men, save he shall cprepare a way for them that they may accomplish the thing which he commandeth them.
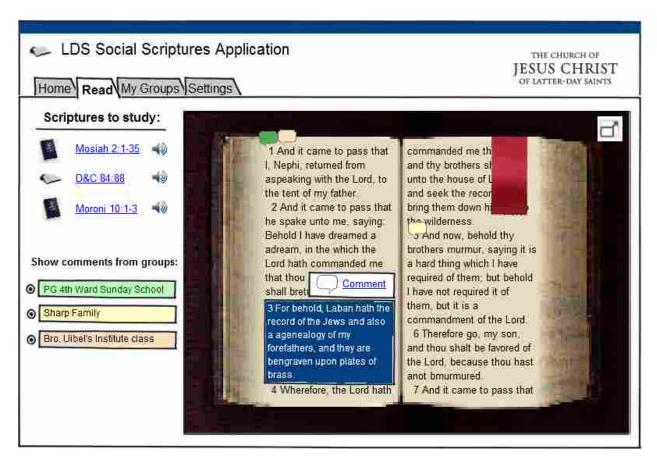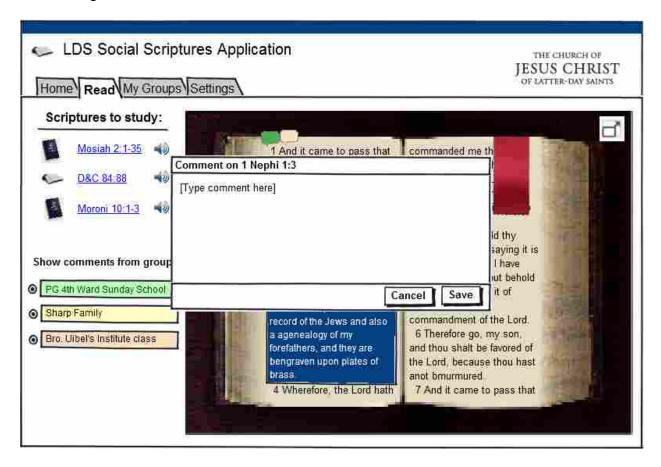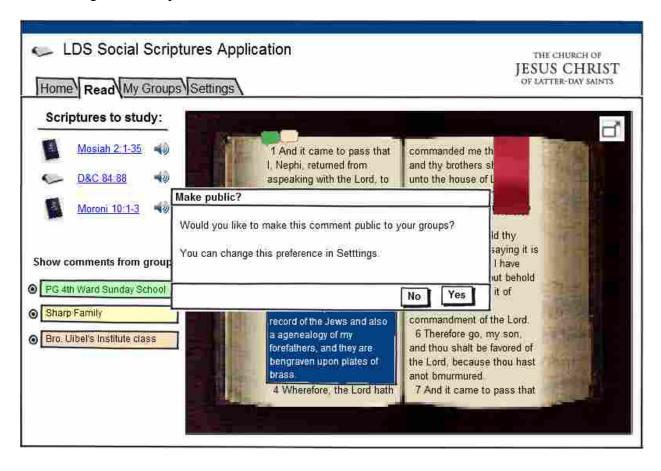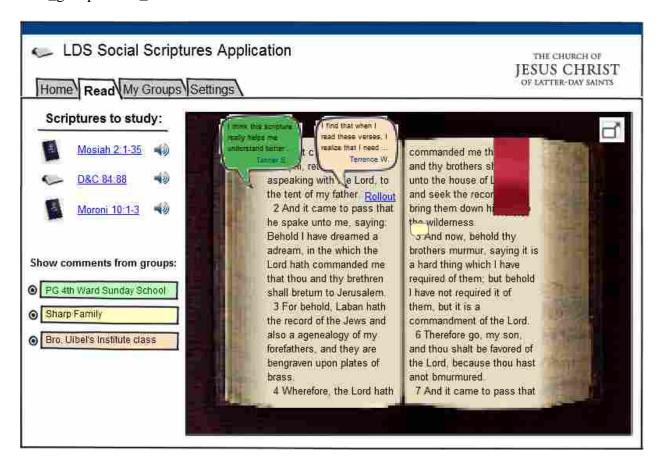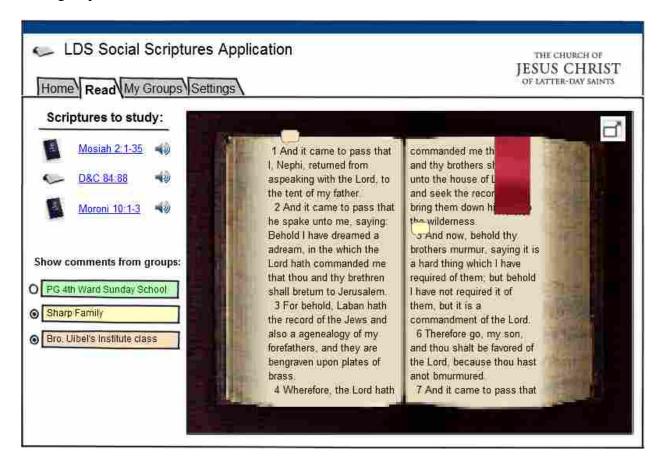
read_audiodialog

read_selecthud

read_dialogcomment

read_dialogcomment_public

read_groupannote_rollover

read_groupannote_deselect
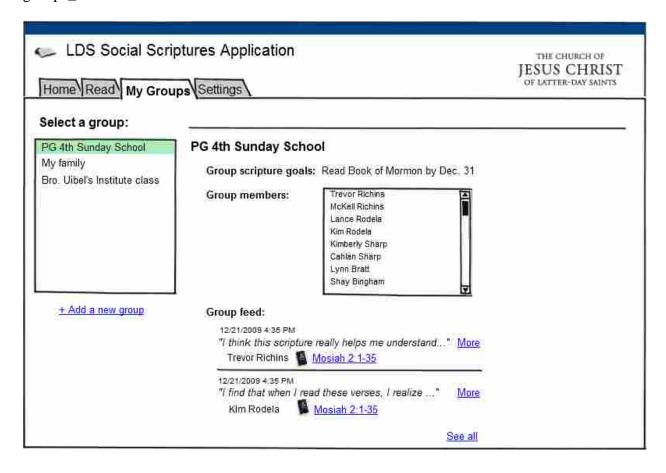
LDS Social Scriptures Application

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OF LATTER-DAY SAINTS

Home | **Read** | My Groups | Settings

Scriptures to study:

Mosiah 2:1-35

D&C 84:88

Moroni 10:1-3

Show comments from groups:

○ PG 4th Ward Sunday School

◉ Sharp Family

◉ Bro. Uibel's Institute class

1 And it came to pass that I, Nephi, returned from aspeaking with the Lord, to the tent of my father.

2 And it came to pass that he spake unto me, saying: Behold I have dreamed a adream, in the which the Lord hath commanded me that thou and thy brethren shall breturn to Jerusalem.

3 For behold, Laban hath the record of the Jews and also a agenealogy of my forefathers, and they are bengraven upon plates of brass.

4 Wherefore, the Lord hath

commanded me th and thy brothers sh unto the house of L and seek the recor bring them down h the wilderness.

5 And now, behold thy brothers murmur, saying it is a hard thing which I have required of them; but behold I have not required it of them, but it is a commandment of the Lord.

6 Therefore go, my son, and thou shalt be favored of the Lord, because thou hast anot bmurmured.

7 And it came to pass that

groups_normal

LDS Social Scriptures Application

THE CHURCH OF
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OF LATTER-DAY SAINTS

Home Read **My Groups** Settings

Select a group:

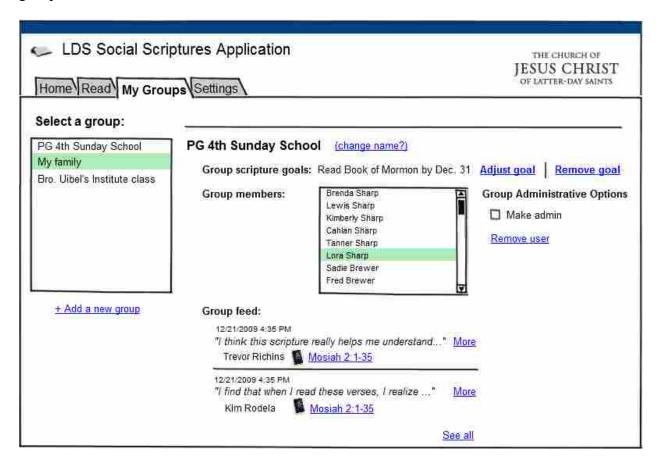PG 4th Sunday School
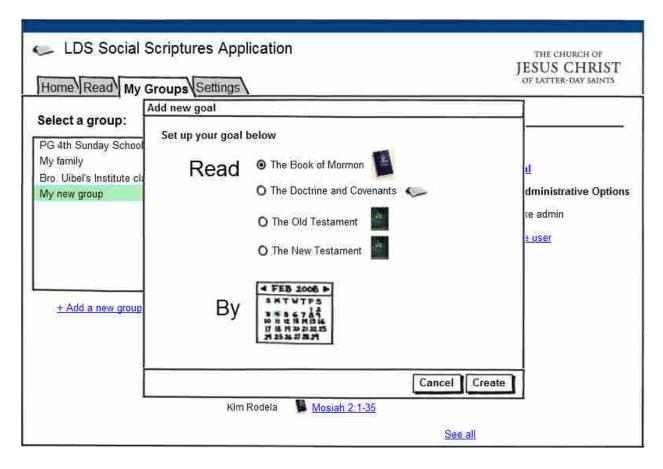My family
Bro. Uibel's Institute class
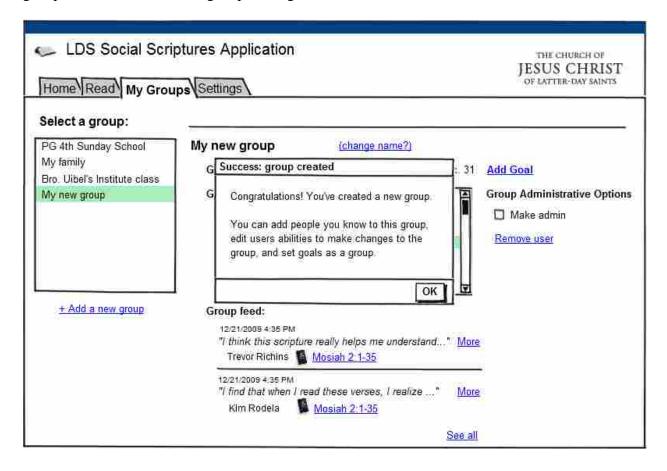
+ Add a new group
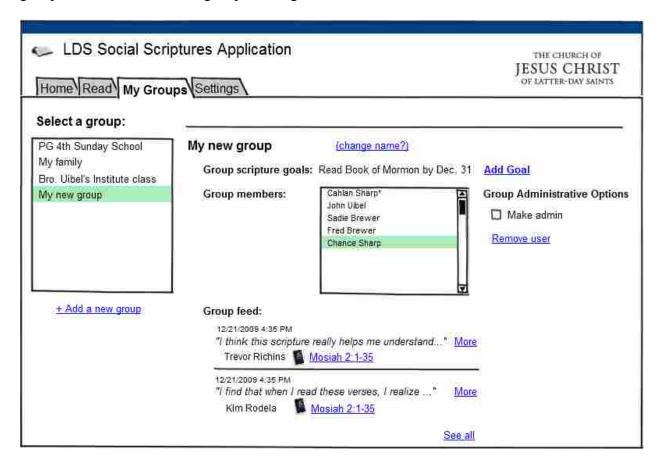
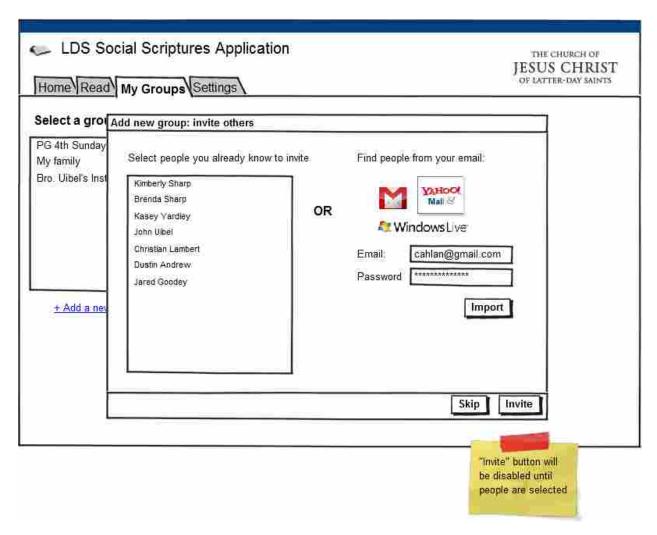groups_selectednonadmin

groups_selectedadmin

groups_selectedadmin_addgoaldialog
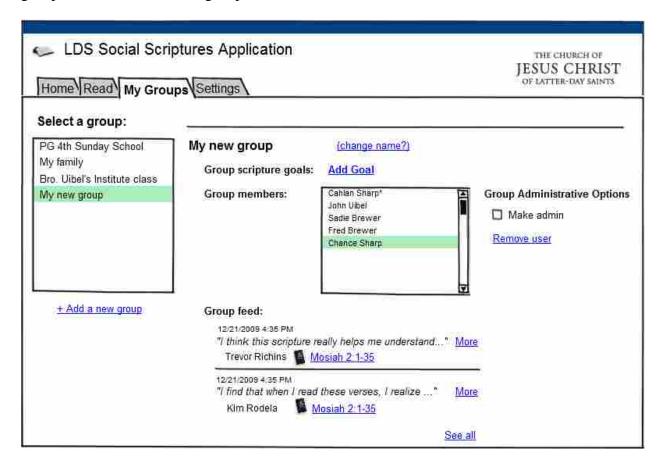
groups_selectedadmin_newgroup_dialogsuccess
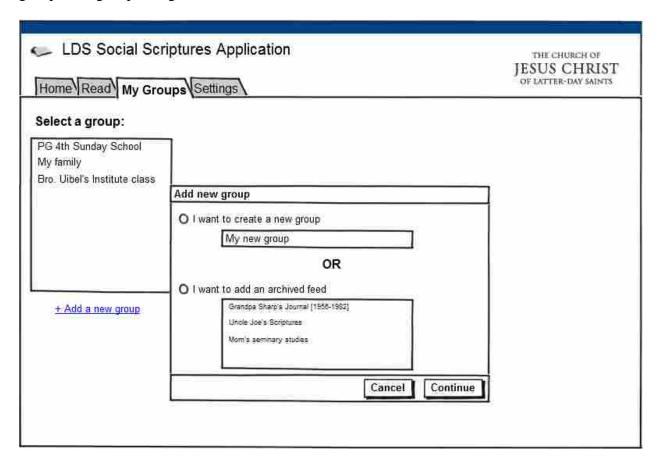
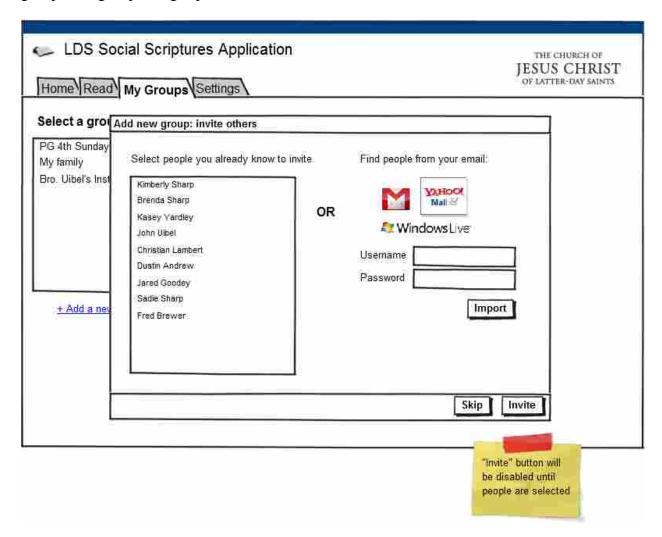groups_selectedadmin_newgroup_addedgoal

groups_addgroupdialog2

LDS Social Scriptures Application

THE CHURCH OF
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OF LATTER-DAY SAINTS

Home | Read | **My Groups** | Settings

Select a grou | Add new group: invite others

PG 4th Sunday
My family
Bro. Uibel's Inst

Select people you already know to invite

Kimberly Sharp
Brenda Sharp
Kasey Yardley
John Uibel
Christian Lambert
Dustin Andrew
Jared Goodey

+ Add a new

Find people from your email:

YAHOO!
Mail

OR

Windows Live

Email: cahlan@gmail.com

Password   **************

Import

Skip   Invite

"Invite" button will
be disabled until
people are selected

groups_selectedadmin_newgroup

groups_addgroupdialog

LDS Social Scriptures Application

THE CHURCH OF
JESUS CHRIST
OF LATTER-DAY SAINTS

Home Read **My Groups** Settings

Select a group:

PG 4th Sunday School
My family
Bro. Uibel's Institute class

+ Add a new group

Add new group

○ I want to create a new group

My new group

OR

○ I want to add an archived feed

Grandpa Sharp's Journal [1956-1982]
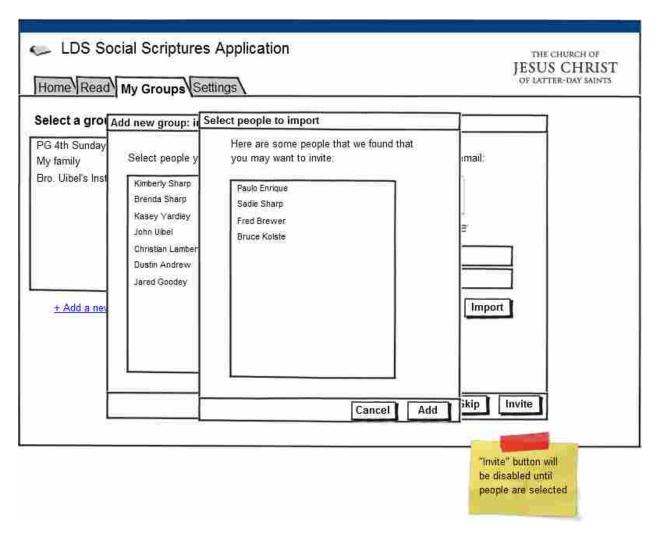
Uncle Joe's Scriptures
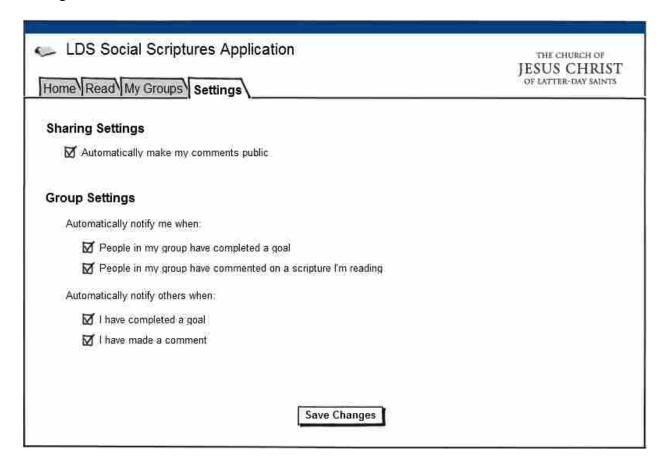
Mom's seminary studies

[Cancel] [Continue]

groups_addgroupdialogimporteddone

groups_addgroupdialogimportedsubdialog

settings_normal

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    http://developers.facebook.com/get_started.php?tab=anatomy.

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    Retrieved June 23, 2009, from http://www.techcrunch.com/2005/09/07/85-of-college-

    students-use-facebook/.

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