TEAM 7

QUILTING MANAGEMENT SYSTEM
PROJECT PORTFOLIO

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1.0 Business Proposal

This section covers the business side of the online quilting management system we are developing.

1.1 Problem to be solved

There has been a do-it-yourself crafting resurgence in America fueled by a quickly growing online presence. This has been prominently in the fiber arts community of knitting, crochet, spinning, and weaving through blogs, pattern websites, and the fiber art management system Ravelry. Despite a growing interest in quilting during this craft resurgence, there currently isn't a tool for quilters to manage their inventory and interact with other quilters online in the same way as fiber arts.

Quilting is a multi-person process generally done over many months that requires documentation and social interaction to successfully complete, a process that would greatly benefit by an online quilting management system yet is currently primarily done in personal notebooks and shared through in-person quilting groups. Quilters also generally do multiple crafts and are already technologically connected and familiar with other craft management services. In response to this need, we have set out to develop a tool to allow these quilters to connect with others, catalog projects, manage inventory, and market their products.

1.1.1 Project Management

Quilters document their projects so that they may track their progress, keep accurate notes, share finished projects, and use as a continued resource. Project documentation is divided into the categories of contributors, dates, materials, and notes. The quilting management system would have a project page for each quilt project enabling quilters to easily enter details of these categories, have all quilts in one place for easy organization, share inspiration with fellow quilters, and be accessed as a resource for quilters.

Category	Includes
Contributors	Pattern name Who Pieced project Who Appliqued project Who Quilted project
Dates	Date Started Date Finished Current Status
Materials	Fabric Used Applique thread color

	Quilting pattern Applique pattern
Notes	Level of Difficulty Picture Any other pertinent information about quilt including history, size, problems, solutions, and other general notes

1.1.2 Inventory Management

Quilters divide their inventory into three categories: fabrics by manufacturer and category; tools like sewing machines, fabric cutters, and cutting dies; and resources such as books, magazines, and individual patterns. The quilting management system allows quilters to keep track of these items, link them to projects, and share with other quilters by entering them into their stash.

Category	Includes
Fabric	Manufacturer and fabric name Category Where Purchased Yardage Price Picture Date Purchased Projects it's linked to
Tools	Tool Type Manufacturer Item Name/Model Where purchased Price Picture Date Purchased
Resources	Type of Resource (book, magazine, pdf, single pattern, booklets) Type of Pattern (throw, bedspread, table runner, etc.) Title Author Date Published

1.1.3 Quilter Interaction and Inspiration

Quilters create innovative ideas through interacting with other quilters. The social connection to other quilters is an important source for quilt making inspiration, education, and create cooperation. The quilting management system allows quilters to interact with each other through private messages and forums, sharing their work through projects details, favorite other quilters' projects, finding materials through connections with retailers, and gaining new inspiration through the social media part of this solution.

1.2 Stakeholders

This section documents the stakeholders identified in this project.

1.2.1 Customer Stakeholders

- **Quilters** - are defined as any user of the quilting website. More specifically, anyone who uses our quilting management system to solve the problem of needing to manage quilt projects, manage quilting inventory, interact with fellow quilters, and find inspiration through the social media part of our solution. These are the primary stakeholders of the system and supply the majority of its content through user and project information and forum posts.
- **Suppliers** - are a generalization of the different type of suppliers our system involves.
  - *Material Suppliers* - supply materials and goods for quilting through ads to their websites, promotions, and patterns available for purchase through system
  - *Information Suppliers* - supply information, education, and resources on aspects of quilting through forums, fabric inventories by manufacturer, and project details
  - *Service Suppliers* - supply services to fix machinery, quilts, or supply quilting expertise through ads to their websites or services
- **Local Quilting Stores** - primarily brick and mortar stores offering quilting materials or services in a localized area. System allows stores to grow their local quilting community and sell their product by having their own user pages and forums, searching for users in area, and targeted advertising to local users when quilters search for materials or goods through system.
- **Quilt Shows** - large meetings of quilters that allow quilters to showcase and sell their quilts, enter competitions, and connect with other quilters, visit exhibitors, and gain expertise. Quilt shows are an extension of the quilt management system by moving some of the quilter interaction aspects from the system to in person. Shows are able to advertise through system and quilters are able to plan and bond over attendance to show.
- **Executive sponsor** - We work closely with our sponsor in strategizing the design of our product. The executive sponsor is a quilting group leader that works closely with groups that produce quality quilts in a social environment. Sponsor has expertise in problems arising in quilting management and access to community knowledge on the needs of quilters, their technical abilities and access, and variations in quilting management techniques.

1.2.2 Development Stakeholders

- **Product Manager** - This role is great at looking at the "big picture" to ensure that the project is on the right track. They excel in thinking up multiple solutions to problems that we encounter.
- **Project Manager** - This role keeps the group focused, contacts the group to organize meetings and development times.
- **Software Architect** - As one of our senior developers, this role is an expert in artifact creation. They are knowledgeable on designs and concepts with regards to software development.

- **Process Manager** - This role looks into the detail of project artifacts. They focuses on appearance, fluency, and functionality of all project artifacts.
- **Developers** - This role develops the programmatic software solution.
- **Regulatory Bodies** - help to regulate the online market (using PayPal, Amazon, etc.) for buying, selling, and trading goods

1.3 Technical Solution

Our service offers quilters an easy way to manage and share their quilting materials. While there is an expected learning curve that the quilters must overcome with the move to a digital material management tool, we believe the ultimate benefit will be worth it.

1.3.1 Current Processes

A quilter catalogs a project's pattern, dates, details on how it was pieced, appliqued, and quilted by, fabrics used, and general comments on process. Quilters can document their projects into this solution. Further, by using our service, the quilting community will have an opportunity to buy, sell, and trade their materials, designs, and products with other quilters.

1.3.2 Changes to Current Processes

The quilters will have an opportunity to document and organize the wide varieties of fabrics, materials, patterns, needles, and textures that they have. By using our online service, the quilters will be able to access and organize their items from anywhere with an internet connection.

1.3.3 Implementation Recommendation

Our system has been designed so that when implemented, it is able to be extensible. The overall architecture is based upon implementation across multiple avenues of hardware and software.

1.3.3.1 Recommendations

We recommend that the implementation team use C++ for the developing the functionality and HTML, Python, and SQL for website development. Cloud storage solutions supplied by Amazon would be a recommended avenue to look into during the final stages of this development when the implementation in under stage.

1.4 Economic Analysis

The economic analysis of the proposed quilting service is detailed in the following sections. The formal financial analysis is valuable to all stakeholders involved with the quilting service. This section aims to cover the purpose and justification for the project as well as a detailed look at the risks involved and what methods of risk control will be taken.

1.4.1 Project Justification

The following graphs and charts help to convey the budget constraints along with risk assessment constraints of this project's implementation. The sections following this one dive deeper into the actual risk assessment and associated costs as well as the financial analysis. The Financial Analysis breaks down costs of member roles as well as marketing and other expenses.

1.4.1.1 Revenue Expectations

Based upon market research and the data we gathered from similar sites like Ravelry.com, we expect a service like ours to perform very well. Ravelry.com was founded in 2007 and in just under a year, was reaching over 2 million monthly views. At 2 million views a month, and an estimated $3.6 million a month in pure revenue, it is fair to say that the social knitting networking site Ravelry is successful. A site like our quilting service will offer a similar service except to quilters.

We expect to experience an exponential growth as per the nature of social networking sites. More specifically, a 35% monthly growth will yield a monthly profit starting at $16,501 and in just a year, reaching over $300,000 a month.

Marketing Revenue		
Months	Total Visitors (35% growth)	Revenue
1	5,000	$ -
2	9,113	$ 16,501
3	12,302	$ 22,111
4	16,608	$ 29,629
5	22,420	$ 39,703
6	30,267	$ 53,202
7	40,861	$ 71,291
8	55,162	$ 95,530
9	74,469	$ 128,010
10	100,533	$ 171,533
11	135,719	$ 229,855
12	183,221	$ 308,005
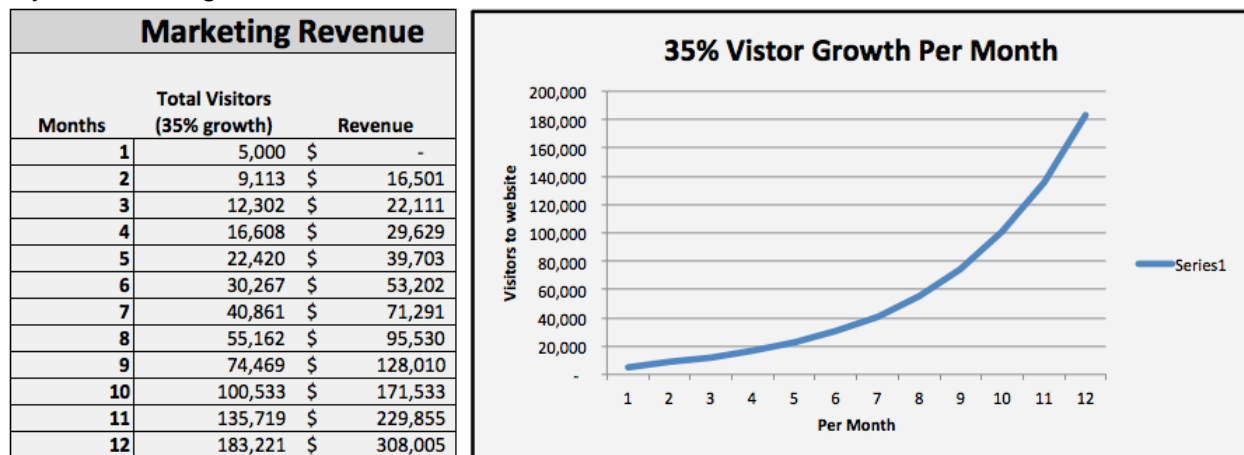
Figure 1.1: Market Revenue Growth

Figure 1.2 Estimated Development Costs depicts when the organization's cumulative costs are offset by the cumulative benefits over a monthly time scale over the course of one year of implementation. The main source of revenue will come from advertisements and donations. You can find an analysis of the revenue this non-profit service is projected to generate in section *1.4.1.1 Revenue Expectations.* The green highlighted section indicates the breakeven point at 9 months.

Payback Analysis Breakdown

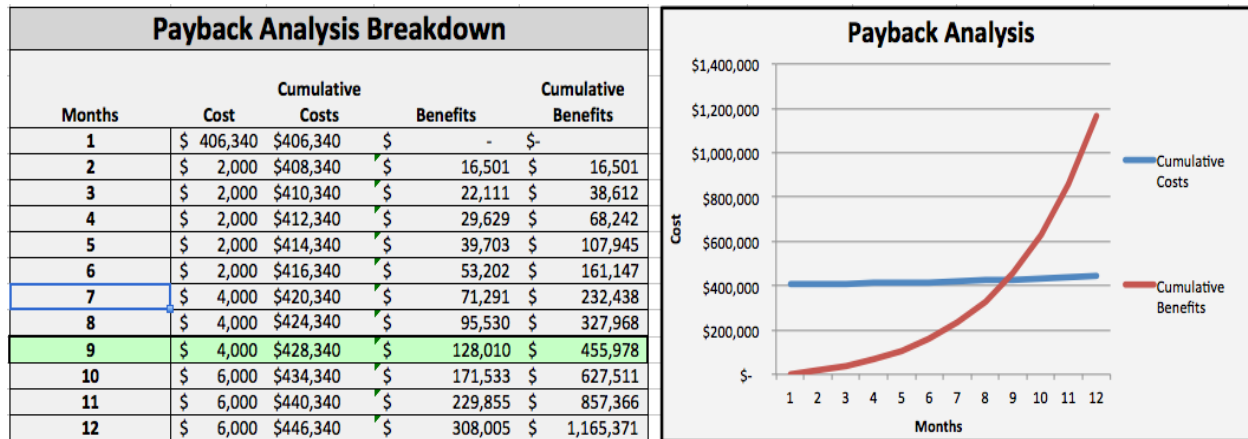| Months	Cost	Cumulative Costs	Benefits	Cumulative Benefits
1	$ 406,340	$406,340	$ -	$-
2	$ 2,000	$408,340	$ 16,501	$ 16,501
3	$ 2,000	$410,340	$ 22,111	$ 38,612
4	$ 2,000	$412,340	$ 29,629	$ 68,242
5	$ 2,000	$414,340	$ 39,703	$ 107,945
6	$ 2,000	$416,340	$ 53,202	$ 161,147
7	$ 4,000	$420,340	$ 71,291	$ 232,438
8	$ 4,000	$424,340	$ 95,530	$ 327,968
9	$ 4,000	$428,340	$ 128,010	$ 455,978
10	$ 6,000	$434,340	$ 171,533	$ 627,511
11	$ 6,000	$440,340	$ 229,855	$ 857,366
12	$ 6,000	$446,340	$ 308,005	$ 1,165,371

Figure 1.2 Estimated Development Cost

1.4.3 Risk Assessment

As with any project, there are risks that must be recognized and planned for. During the course of development, we plan on encountering the following risks.

- **Remote communication** - Colleen (our executive sponsor) is located in Austin, Texas. We plan to communicate with her via email and conference calls.
- **Limited knowledge** - None of the developers quite fully understand the quilting process. This will be an extra challenge to become familiar with the processes involved in quilting.
- **Cost** - Development of the service will need to be funded via donations and volunteer effort.

1.4.3.1 Analysis Risks

Risk taxonomy extrapolated out to potential cost based on impact and probability

Risk Class	Probability	Impact	Cost
Product Engineering	Frequent	Critical	Monthly Compensation ($63,470) x Additional Months (3) = $190,410
Development Environment	Probable	Serious	Monthly Compensation ($63,470) x Additional Months (2) = $126,940
Program Constraints	Unknown	n/a	n/a

Specific risks for projects, their exposure, and ways to mitigate.

Probability	Description	Mitigation	Impact	Exposure
Probable	If users are not adequately able to list components of projects, they will not find value in website interface	Regular user polling. Have ability to track popular requested features	Serious	High
Probable	If manufacturer pages are not complete, retailers will not be able to correctly populate	Connect with major fabric retailers and populate from their fabric lists	Serious	High
Frequent	If manufacturer pages are not complete, users will not be able to use website as resource and adequately populate their stash	Allow users to enter product information or connect with major manufacturers before building software	Critical	Intolerable
Probable	If design is not easily navigable, users will not use full capabilities of site	Regular usability testing and user polling. Run regular releases	Minor	Medium
Occasional	If website interfaces are not easily accessible on mobile devices, users will not be able to access outside desktop or laptop	Develop website with default mobile version	Minor	Low

1.4.3.3 Security Threats

As with any software service, security is a large concern. With thousands of potential quilters, it is important that industry grade security measures are taken.

Areas of Importance
- Passwords
- DDoS attacks
- Physical data breach

Virtual data breach

1.4.3 Financial Analysis

The overall cost of planning is not being taken into account because the four designers are donating their time and effort. However, when the project is "thrown over the wall" to the development team, it's important to be able to have an estimate of what it will cost to produce a site/service such as this Quilting website.

In the chart below, the costs of employing a team of developers for a 6 month web service development project are broken down. **In summary, to employ nine developers for a six month project, it would cost $406,340.**

All estimates below are the result of searching the specified job title at the following IT related salary compensation website:
http://www.salary.com/category/salary/

Estimated Development Cost
Human Resources / Compensation Expense

Title	Hourly Pay		Hours/Mo		Monthly Pay	Bi-yearly Salary
Project Manager II	$	38	$	160	$ 6,080	$ 36,480
Process Manager I	$	55	$	160	$ 8,800	$ 52,800
Software Architect I	$	62	$	160	$ 9,920	$ 59,520
Graphic Designer I	$	26	$	160	$ 6,190	$ 37,140
Software Engineer I	$	31	$	160	$ 4,960	$ 29,760
Software Engineer I	$	31	$	160	$ 4,960	$ 29,760
Software Engineer I	$	31	$	160	$ 4,960	$ 29,760
Technical Writer I	$	25	$	160	$ 4,000	$ 24,000
Business Analyst I	$	28	$	160	$ 4,480	$ 26,880
Compensation Total					$	326,100

Other Costs

Category		Total
Web Hosting	$	100
Building space, utilities, and tech	$	58,450
Overhead	$	11,690
Marketing	$	10,000
Misc. Total	$	80,240
Grand Total	$	406,340

Figure 1.3: Estimated Development Cost

From the data gathered above, the proposed system is expected to cost $461,060 to completely develop, market, and host. In addition, risk control and the costs of maintaining these risks is calculated into the following budget estimation: $406,340 + $317,350 = **$723,690**

1.4.3.3 Project Timeframe

As mentioned in *1.4.3 Financial Analysis,* we expect the actual development of this quilting service to take a total of 6 months once inception is reached. A suggested software development method for this website is to implement using the SCRUM Method. We believe using SCRUM to accomplish this site is beneficial to the Quilters.

1.5 Feasibility & Business Needs

The quilting service offered is set out to accomplish some key objectives. If accomplished, the success criteria will have been met.

1.5.1 Key Objectives

- **Document** entire quilting process so that the quilting process is clear and understandable to all.
- **Organize** quilting materials in a digital manner so that quilters can keep track of their materials throughout the quilting process.
- **Connect** quilters in a social sense so that more clubs can form.
- **Provide** networking between quilters, allowing quilters to learn from each other and discuss strategies and designs.
- **Commerce** options for quilters to buy, sell, and trade with other quilters across the globe.

1.5.2 Feasibility

Developing a web service to run and manage a large database and user base requires a lot of work and knowledge from experienced developers. Based upon our research and meetings, we have determined the project to be feasible based upon a few different points.

- **Technical** - The tools available to developers today makes creating and managing a website a simple task. Thus, the majority of development effort will go towards developing and managing the user and database systems.
- **Organizational** - As long as the team that implements this project has a good set of developers, managers, and leaders, the project should be able to be developed and implemented with ease.
- **Operational** - Based upon similar products in the market, the website is low maintenance by the nature of web servers. Once up and running, the web service will require few managers and updates.
- **Economic** - The low overall cost of web hosting, maintenance, and by nature of a non-profit, the web site stands in an economically feasible stance.
- **Support / Maintainability** - If the buyer of the project chooses so, the website has potential to be update and customer-catered to the buyer's needs. The buyer will decide whether or not to update the service or leave it as a standalone for the public.

- **Marketability** - Once the brand name has been established, the web service can be used in marketing through various avenues. Having one of the only large online community of crafters, the buyer will have market presence in crafter meet-ups and sales conventions.
- **Schedule** - Many website (including this one) can and are developed within a 6 month period, leaving the project timeline to be completed within a year of development.

1.6 Planning and Scheduling

There are a few different deadlines for this project. With a development team of four college students and one executive sponsor, we expect the proposal to be completed by the first deadline of **March 17, 2014**.

1.6.1 Project Timeline

It's difficult to give an exact timeline estimate because that ultimately depends on the whether or not the owner decides to budget according to our analysis. However, the proposal is expected to be complete by March 17. Once the proposal is approved, we expect the project to take six months to develop, according to the budget in *Figure 1.2 Estimated Development Costs.*

1.6.1.1 Project Schedule

This section provides an overview of the schedule that the project will take place using. The first section is a high level view. The second provides a more in depth look at the project's stages.

1.6.1.1.1 High Level View

- **January 5 - March 17:** This time will be used for planning the design of our web service. Documentation, artifact creation, and communication with our sponsor will be the focus of this timeframe.
- **April - September**: Upon approval from the project owner, this will be the development time of the actual service.

1.6.1.1.2 In-Depth View

Figure 1.6.1 Project Schedule is a depiction of the suggested development schedule is laid out over the course of the suggested six month development cycle. After that, each of the stages are broken down and discussed more in depth.

April	May	June	July	August	September
Webpages	Backend Development		Testing	Integration	Training
Index	US_QU_01	US_QU_04	Functionality	Introduction	Maintenance
Stash	US_QU_02	US_QU_05	Accuracy	Overview	Downtime
Marketplace	US_QU_03	US_QU_06	Cohesion	Approval	
Communication	US_QU_08	US_QU_07			
Profile	US_QU_11	US_QU_09			
Project	US_QU_13	US_QU_14			
	US_QU_15	US_QU_18			
	US_QU_16	US_SU_01			
	US_QU_17	US_SU_02			**Priority:**
	US_SU_04	US_SU_03			High
	US_AP_01	US_SU_05			Medium
	US_AP_02	US_QU_10			Low

Figure 1.6.1 Project Schedule

1.6.1.1.2.1 Webpage Development

The first stage in development is reserved for the creation of the web pages that the service will contain. This is scheduled to be done during the month of April. These web pages are not expected to have actual functionality but are to serve as a guide when the next stage in development continues: Backend Development.

1.6.1.1.2.2 Backend Development

During this stage, the primary and most important parts of this project will be done. The functionality and cohesion behind the site will begin to take form. In *Figure 1.6.1 Project Schedule*, various user stories' identifiers have been listen in terms of expected development per month. When the developers are implementing the code, they should develop the user stories from the top down, beginning in May and ending in June. A color-coded priority has been assigned to each user story; high priority, medium priority, and low priority.

1.6.1.1.2.3 Testing

During the testing stages of development, the entire system will be stressed to find breaking points and areas of issue. This is schedule to take place during the month of July. The system will be tested for functionality of the user stories as well as accuracy in reporting and database

management. Once these have been passed, the system will be tested for cohesion across the site to ensure that the quilter experiences consistent jargon and experience.

1.6.1.1.2.4 Integration

The next stage of development will take place in August. This will be the phase of development that deals with integrating the system into the quilting club's current scenario. Developers can expect there to be slight issues that arise from different quilter's opinions on the site's service. This step may not take a whole month to complete but planning for this ensures that if something comes up, there's time to fix it before the next stage: Training.

1.6.1.1.2.5 Training

This stage deals with the training of the people that own the system. It primarily includes training a core set of managers of the system so that they can deal with maintenance of the system and how to handle downtime, if it occurs.

1.6.2 Current Workforce

We currently have 4 people developing the analysis side of the project. We are in weekly communication with our sponsor, Colleen to ensure that we are designing the project to fit the needs of the quilting community.

2.0 Software Specification

The following documentation is helpful in the actual implementation part of the development cycle.
This section includes the following:
1. Software Requirements Specification (SRS)
2. Website Mockups
3. Diagrams and Models

2.1 Software Requirements Specification (SRS)

Details about requirements of the system are listed below. Each requirement contains a unique Identification number (ID), a brief description of each requirement, and assumed priority of each requirement. Priority is established by our team members, and is based on pre-deployment knowledge, importance to the system, and "wow" factor.

2.1.1 Project Details

The requirements for this are listed in order of priority.

ID	Requirement	Priority
PD-2	Quilters will be able to set up a user name associated with their email	High
PD-3	Quilters will have a profile page associated with their user name	High
PD-4	Suppliers will have a profile page for their company	High
PD-1	App should provide a mailbox function to send and reply to users	Med

PD-6	App should have database of fabrics on the market by brand	Med
PD-8	Quilters should be able to search for other user's projects based on search criteria	Med
PD-9	Supplier profiles should be able to post patterns	Med
PD-10	Suppliers should be able to sell patterns on their individual pattern pages	Med
PD-5	Quilters may be able to create a "stash" database of their personal collection of fabrics	Low
PD-7	Quilters may be able to directly link their stash of fabrics to the fabric database	Low

2.1.2 Project Page

Project page is a web page that features the user's quilt project. The requirements for this are listed in order of priority.

ID	Requirement	Priority
PP-1	Quilters will be able to document their projects including: ● pattern ● fabrics used ● photo of finished product ● who the quilt is for ● percentage of progress completed ● who it was pieced by ● who it was appliqued by ● who it was quilted by ● quilt notes	High
PP-2	App will provide project page where all projects can be viewed by photo	High
PP-3	App will provide individual page for each project	High
PP-7	Quilters should be able to connect the used fabrics on their project page to the fabric database	Med
PP-8	Quilters should be able to upload photos to their projects	Med
PP-4	Quilters can comment on other user's projects	Low
PP-5	Quilters should be able to connect users to their project page for pieced, appliqued, and quilted by sections	Low
PP-6	Quilters may be able to connect the used fabrics on their project page to their fabric collection	Low

2.1.4 User Stories

The following user stories are useful in understanding the perspective of the user of a certain component of the entire system.

2.1.4.1 User Role: Quilters

These are the user stories created for the user role. Their unique ID convention is designed so that the ID can be sorted by "US_" for User Story, "QU_" for Quilters, and "x" as a numbering scheme. In order to avoid repetitive text, if a double-quote (") is read, infer the text that was last seen in that column of the table. The requirements for this are listed in order of priority.

ID	As a [...]	who is [...]	I want [...]	so that [...]	Story Points	Priority
US_QU_01	Quilter		to be able to tag projects	I can organize them.	5	High
US_QU_02	Quilter		to be able to document my quilting progress	I have documentation for my records.	9	High
US_QU_03	Quilter	interested in other quilts	to identify elements in quilts like colors, shapes, patterns, and symbols	I can purchase quilts or patterns	10	High
US_QU_08	Quilter		to keep a database of my fabric collection	I may keep track of what I have	8	High
US_QU_11	Quilter		to create and post on forums	communicate with fellow quilters on specific topics	4	High
US_QU_13	Quilter		to share pictures of my quilts		4	High
US_QU_15	Quilter		to share my projects.		5	High
US_QU_16	Quilter		to see other people's projects	I can get inspiration.	7	High
US_QU_17	Quilter		search your website for exact phrases, keywords, and information	I can find what I need quickly	9	High
US_QU_18	Quilter	quilting myself	to rate patterns based on difficulty	I can prepare other users for patterns	3	Medium
US_QU_04	Quilter		find and buy patterns		9	Medium
US_QU_05	Quilter		have access to a fabric database by brand and fabric name		7	Medium
US_QU_06	Quilter		get retailer recommendations	I can buy fabric I'm looking for.	6	Medium

US_QU_07	Quilter		find nearby quilting retailers by zip code		5	Medium
US_QU_09	Quilter		to be able to search other users' fabric collection	I can purchase from other users	6	Medium
US_QU_10	Quilter		to be able to message other users on the site		6	Medium
US_QU_14	Quilter		to connect with friends	I can keep up to date on their projects.	12	Medium
US_QU_12	Quilter		to learn how to do more sophisticated quilting patterns	I can become a better quilter	6	Low

2.1.4.2 User Role: Suppliers

These are the user stories created for the supplier role. Their unique ID convention is designed so that the ID can be sorted by "US_" for User Story, "SU_" for Suppliers, and "x" as a numbering scheme. In order to avoid repetitive text, if a double-quote (") is read, infer the text that was last seen in that column of the table. The requirements for this are listed in order of priority.

ID	As a [...]	who is [...]	I want [...]	so that [...]	Story Points	Priority
US_SU_04	Supplier		to have user accounts specifically for my company	I can showcase my product designs.	4	High
US_SU_01	Supplier		to share product information based on location	users know my full line of products.	4	Medium
US_SU_02	Supplier		to connect users to retailers	users can buy my product.	6	Medium
US_SU_03	Supplier		to offer ways for users to buy my product through the app	I can remove the middle man.	6	Medium
US_SU_05	Supplier		to have groups and forums for fans of my product	I can market directly to followers of my product.	6	Medium

2.1.4.3 User Role: Application

These are the user stories created for the application role. Their unique ID convention is designed so that the ID can be sorted by "US_" for User Story, "AP_" for Application, and "x" as a numbering scheme. In order to avoid repetitive text, if a double-quote (") is read, infer the text that was last seen in that column of the table.

ID	As an [...]	who is [...]	I want [...]	so that [...]	Story Points	Priority
US_AP_01	app	maintaining current user information	to update informational changes from user to database	I can hold any current changes to prevent loss of data	6	High
US_AP_02	app		to have an established disk space	I don't run out of memory and can track how many users the database can handle	4	High

2.1.5 Use Cases

The following pages contain use cases that were developed to aid the development of the system (ordered by priority).

Use Case ID:	UC1	Priority:	High
Name:	Create Project	Actors:	Quilters
Created By:	Team 7	Last Updated By:	Team 7
Date Created:	02/08/2014	Date Last Updated:	02/08/2014

Description:	Basic flow for project Creation
Trigger:	Flow does not begin until user clicks "Create New Project" button
Preconditions:	User Logged in; User navigates to projects page.
Post conditions:	Project is added to recent project history on projects page. Project information is stored in database and on site (for other users to view)

Stimulus	Response
	System Directs User to Project Description page. Text fields for Project Name, description, and Type are displayed in the center of the page. Button Labeled "Continue" displayed under description Field
User fills in Project Name and description and clicks "Continue".	System directs user to Project creation page. Drop Down menu describing different project types, list with previous chest items, add to chest button, and "+Link other Users" link display in center of page. Button Labeled "Continue" displayed under link users section.
User selects type of project necessary, adds chest items, and links users. They then click "Continue".	System Directs user to Project Overview Page. Photo upload is located on top left of page; project name, occasion for project, size, link, contributors, chest items used, and description text fields are located in this order in the middle of the page; status of project, progress, difficulty, date started, date completed, and similar projects text fields are located on the right side of the page. "Save Changes" button located at the bottom of the page.
User adds photo, contributors, status of project, difficulty, start date, and occasion for project and clicks the "Save Changes" button.	System sends data to database table 'project'. Preview project page is displayed, showing Photos of project, project name, description, difficulty, progress, chest items, occasion, date started, and date completed.

Alternate Scenario:	User creates multiple projects with the same project name, User exits mid creation
Exception:	User links themselves within a project

Use Case ID:	UC2	Priority:	High
Name:	Delete Project	Actors:	User; Administrator;
Created By:	Team 7	Last Updated By:	Team 7
Date Created:	02/08/2014	Date Last Updated:	02/15/2014

Description:	Deletes a previously created project from a user's profile
Trigger:	Delete project button
Preconditions:	User logged in; User Navigates to projects page; Project to delete has already been created
Post conditions:	Project to delete is no longer in user's profile

Stimulus	Response
User selects / clicks the project they want to delete.	System places focus on the project selected.
User clicks the delete project button.	A Modal pops up. It has the project name, description and type displayed. Buttons labeled "Delete" and "Cancel" are displayed under the project information.
User clicks the delete project button.	System deletes the project from the database. The Modal screen is closed. The project screen is refreshed, Control is returned to the project page, and it no longer shows the deleted project.

Alternate Scenario:	User selects multiple projects to delete
Exception:	User exits without selecting "Delete" or "Cancel"

Use Case ID:	UC5	Priority:	High
Name:	Document Materials	Actors:	Users
Created By:	Team 7	Last Updated By:	Team 7
Date Created:	02/08/2014	Date Last Updated:	02/15/2014

Description:	Keep track of all materials, patterns, textures, and tools used to quilt
Trigger:	Add to Chest Button; manage chest link
Preconditions:	User logged in; User Navigates to manage chest page;
Post conditions:	Items / materials have been added to chest and user information.

Stimulus	Response
User selects / clicks on an item they have purchased / obtained and wants to it to their chest	System places focus on the item selected.
User clicks "Add to Chest" button	System sends data to database table 'chest'. Preview chest page is displayed, showing items in the user's chest.

Exception:	User does not click or exits before clicking "Add to Chest" button

Use Case ID:	UC7	Priority:	High
Name:	Modify Project	Actors:	User; Administrator;
Created By:	Team 7	Last Updated By:	Team 7
Date Created:	02/16/2014	Date Last Updated:	02/16/2014

Description:	Modify a previously created project
Trigger:	Modify project button
Preconditions:	User logged in; User Navigates to Project Overview Page; Project to Modify has already been created
Post conditions:	Project to modify has been updated

Stimulus	Response
User selects / clicks the project they want to Modify.	System places focus on the project selected.
User clicks the modify project button.	Photo, project name, occasion for project, size, link, contributors, chest items used, and description are displayed on the project detail screen; status of project, progress, difficulty, date started, date completed, and similar projects text fields are displayed on the right side of the page. "Save Changes" button located at the bottom of the page.
User makes changes and clicks the "Save Changes" button.	System updates the project in the database. The project overview screen is refreshed, and focus is returned to the project overview page.

Exception:	User does not click or navigates away before clicking "Save Changes"

Use Case ID:	UC11	Priority:	High
Name:	Buy Item from Marketplace	Actors:	User; Administrator; Seller
Created By:	Team 7	Last Updated By:	Team 7
Date Created:	03/09/2014	Date Last Updated:	03/09/2014

Description:	User purchases Item from marketplace from another user on the site. This user includes retailers participating in our service
Trigger:	Buy button located on marketplace.html
Preconditions:	User navigates to Marketplace; User found an item they wish to purchase;
Post conditions:	User receives Confirmation Email regarding their purchase

Stimulus	Response
User clicks Buy button	User is transferred to purchase page, item information is transferred there. Item information is displayed as non-editable text at top of screen, below is purchase information: Credit Card type drop down, Card Number Text field, Name on Card Text field, CVS number text field, Address text Field, Zip text Field, State drop down, and Country Drop Down.
User enters in Billing information and Clicks Purchase	Billing information entered is sent to the PayPal API, Confirmation of purchase is determined on their side and sent back to us. Billing information is stored in our database along with confirmation status. User is transferred to Confirmation/Denial of purchase page. Information regarding Purchase is displayed, along with option to print invoice with the print invoice button.

Alternate Scenario:	User's credit card is denied; all credit card information is not entered correctly; store out of stock;
Exception:	User is purchasing from themselves.

Use Case ID:	UC3	**Priority:**	Medium
Name:	Create Forum	**Actors:**	User; Distributors
Created By:	Team 7	**Last Updated By:**	Team 7
Date Created:	02/08/2014	**Date Last Updated:**	02/15/2014

Description:	Forums are created based on topics of interest to quilters.
Trigger:	Create Forum Tab/Button
Preconditions:	User logged in; User navigates to forum page
Post conditions:	A new forum is added to recent forum history on forums page. Forum information is stored in database and on site (for others to view)

Stimulus	Response
User clicks Create New Forum Button	System Directs User to Forum Description page. Text fields for Forum Name, description, and Type are displayed in the center of the page. Button Labeled "Continue" is displayed under description Field
User fills in Forum Name and description and clicks "Continue".	System directs user to Forum creation page. Drop Down menu describing different forum types, list with previous forum items, "+Link other Users" link display in center of page. Button Labeled "Continue" displayed under link users section.
User selects type of forum necessary, and links users. They then click "Continue".	System Directs user to Forum Overview Page. Forum name, and description text fields are located in the middle of the page; "Save Changes" button located at the bottom of the page.
User can add photos, instructions and other additional text, and clicks the "Save Changes" button.	System sends data to database table 'forum'. Preview forum page is displayed, showing Photos on forum, forum name, description, and text.

Alternate Scenario:	User creates multiple forums with the same forum name, User exits mid creation

Use Case ID:	UC4	Priority:	Medium
Name:	Delete Forum	Actors:	Users; Distributors
Created By:	Team 7	Last Updated By:	Team 7
Date Created:	02/08/2014	Date Last Updated:	02/15/2014

Description:	Removes Forums from feed
Trigger:	Remove Forum button
Preconditions:	User logged in; User Navigates to forums page; Forum to delete has already been created
Post conditions:	Forum to delete is no longer in database or in user's profile

Stimulus	Response
User selects / clicks the forum they want to delete.	System places focus on the forum selected.
User clicks the delete forum button.	A Modal pops up. It has the forum name, description and type displayed. Buttons labeled "Delete" and "Cancel" are displayed under the forum information.
User clicks the delete forum button.	System deletes the forum from the database. The Modal screen is closed. The forum screen is refreshed, Control is returned to the forum page, and it no longer shows the deleted forum.

Alternate Scenario:	User selects multiple projects to delete
Exception:	User exits without selecting "Delete" or "Cancel"

Use Case ID:	UC6	**Priority:**	Medium
Name:	Search Entire Site	**Actors:**	Users
Created By:	Team 7	**Last Updated By:**	Team 7
Date Created:	02/08/2014	**Date Last Updated:**	02/15/2014

Description:	Search within the site for forums, users, patterns, textures, tools, and groups
Trigger:	Clicking go/search link after entering search information on Search Site
Preconditions:	User logged in; User Navigates to Search Site page;
Post conditions:	Items that match the search criteria are displayed in a list.

Stimulus	Response
User enters data they to search the site to find and clicks button Search.	System displays a list of items found that match the search criteria.
User selects (double mouse click) the item in the list they want to see.	System displays detail about the selected item by invoking the objects display feature.

Alternate Scenario:	User searches within the Search Site page
Exception:	User does not click Search button

Use Case ID:	UC8	Priority:	Medium
Name:	Modify Forum	Actors:	User; Distributors;
Created By:	Team 7	Last Updated By:	Team 7
Date Created:	02/16/2014	Date Last Updated:	02/16/2014

Description:	Modify a previously created forum based on topics of interest to quilters.
Trigger:	Modify forum tab/button
Preconditions:	User logged in; User Navigates to forum page; Forum to Modify has already been created
Post conditions:	An updated forum is added to recent forum history on forums page. Forum information is stored in database and on site (for others to view)

Stimulus	Response
User selects / clicks the forum they want to Modify.	System places focus on the forum selected.
User clicks the modify forum button.	Forum information is displayed on the forum detail screen; "Save Changes" button located at the bottom of the page.
User makes changes and clicks the "Save Changes" button.	System sends data to database table 'forum'. The forum overview screen is refreshed, and focus is returned to the forum overview page.

Alternate Scenario:	User is not an admin of Forum
Exception:	User fails to click "Save Changes"

Use Case ID:	UC9	Priority:	Medium
Name:	Tag Project	Actors:	User; Quilters;
Created By:	Team 7	Last Updated By:	Team 7
Date Created:	02/19/2014	Date Last Updated:	03/02/2014

Description:	Tag a created project
Trigger:	Tag project button
Preconditions:	User logged in; Project to Tag has already been created; User Navigates to Modify Project page
Post conditions:	Project to tag has been updated

Stimulus	Response
User clicks Tag button on Modify Project page	A modal window pops up. It has a text box labeled "Enter Tags" and button labeled "Use Tags" under the text box.
User enters text they want to be created into tags and clicks button "Use Tags."	Each word in text box becomes tag. Commas, semicolons, and spaces are treated as delimiters. All other punctuation is ignored.
User makes changes and clicks the "Save Changes" button.	System updates the project in the database. The project overview screen is refreshed, and focus is returned to the project overview page.

Exception:	User does not click "Use Tags" or "Save Changes"

Use Case ID:	UC10	Priority:	Medium
Name:	Add a pattern	Actors:	User; Quilter; Distributors;
Created By:	Team 7	Last Updated By:	Team 7
Date Created:	02/08/2014	Date Last Updated:	02/08/2014

Actors:	Users of the system
Description:	Basic flow for project Creation
Trigger:	Flow does not begin until user clicks "Create New Project" button
Preconditions:	User Logged in; User navigates to projects page.
Post conditions:	Project is added to recent project history on projects page. Project information is stored in database and on site (for other users to view)

Stimulus	Response
User Clicks the Create New Project Button	System Directs User to Project Description page. Text fields for Project Name, description, and Type are displayed in the center of the page. Button Labeled "Continue" displayed under description Field
User fills in Project Name and description and clicks "Continue".	System verifies information entered in project name field. If null, system throws error message modal and directs user to enter a project name. System directs user to Project creation page. Drop Down menu describing different project types, list with previous chest items, add to chest button, and "+Link other Users" link display in center of page. Button Labeled "Continue" displayed under link users section.
User selects type of project necessary, adds chest items, and links users. They then click "Continue".	System Directs user to Project Overview Page. Photo upload is located on top left of page; project name, occasion for project, size, link, contributors, chest items used, and description text fields are located in this order in the middle of the page; status of project, progress, difficulty, date started, date completed, and similar projects text fields are located on the right side of the page. "Save Changes" button located at the bottom of the page.
User adds photo, contributors, status of project, difficulty, start date, and occasion for project and clicks the "Save Changes" button.	System sends data to database table 'project'. Preview project page is displayed, showing Photos of project, project name, description, difficulty, progress, chest items, occasion, date started, and date completed.

| Alternate Scenario:	User creates multiple projects with the same project name, User exits mid creation
Exception:	user links themselves within a project

2.2 Website Mockups

Designing this service from the ground up required creating mockup to elicit further requirements. In the following sections you will find examples of hand drawn mockups ("lo fi") and more detailed mockups which would look more like the final product ("hi fi").

The main web pages are:
1. index.html
2. stash.html
3. marketplace.html
4. communication.html
5. profile.html

2.2.1 Hand Drawn Mockups - "lo fi"

Figure 2.2.1: "Lo fi" Mockup of the stash.html depicts where quilters would go to manage their projects, materials, and account. The term "stash" is used as a placeholder to simulate a container that holds their information.
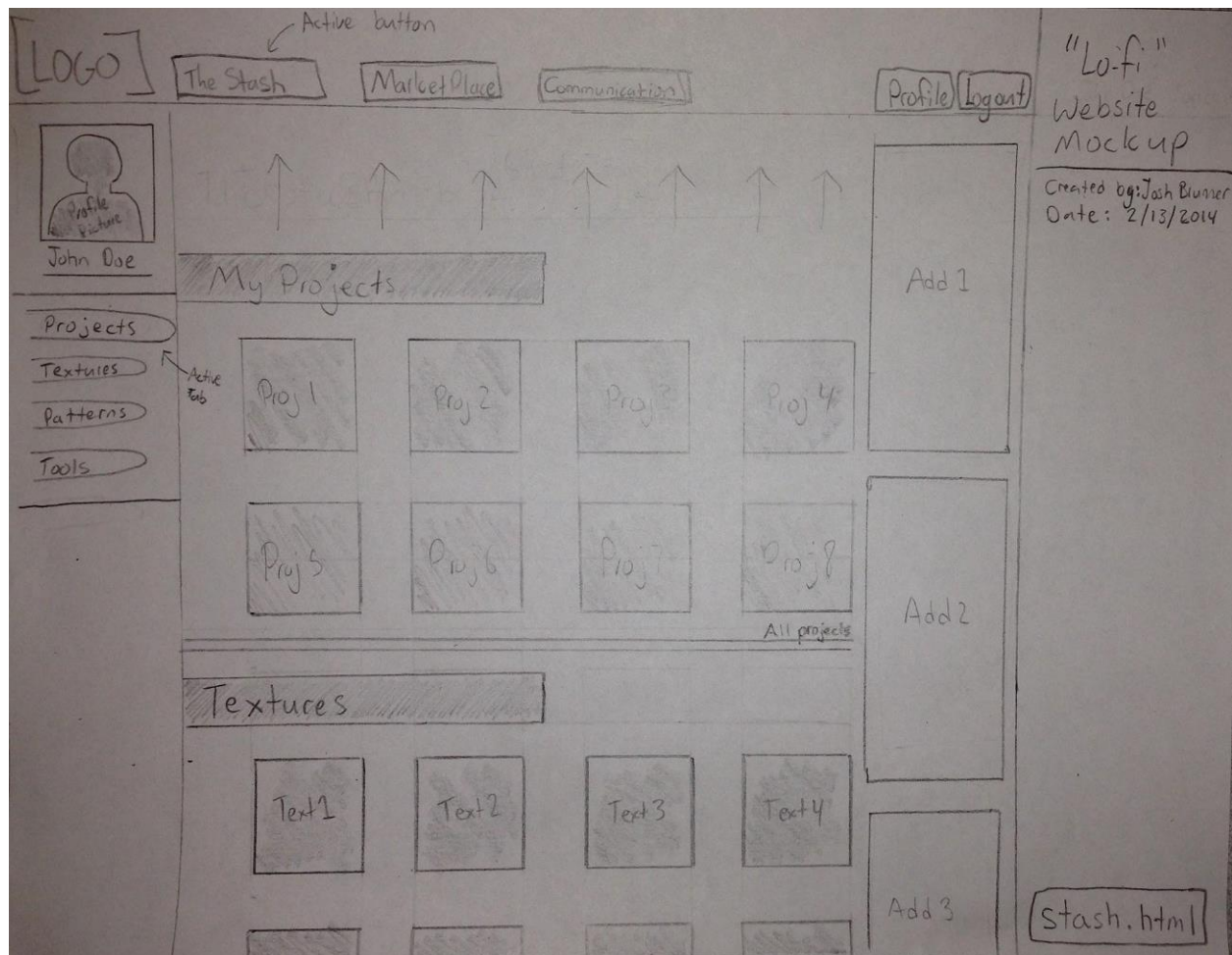
Figure 2.2.1: "Lo fi" Mockup of the stash.html

2.2.2 Wireframe Diagrams

These diagrams show functions of interaction within the deliverable product. Labeling is described in the notes section of each wireframe. All wireframes are based on desired functionality from main stakeholder.

Figure 2.2.2: "Hi fi" Mockup of the stash.html depicts a more detailed overview of what the stash page will look like.
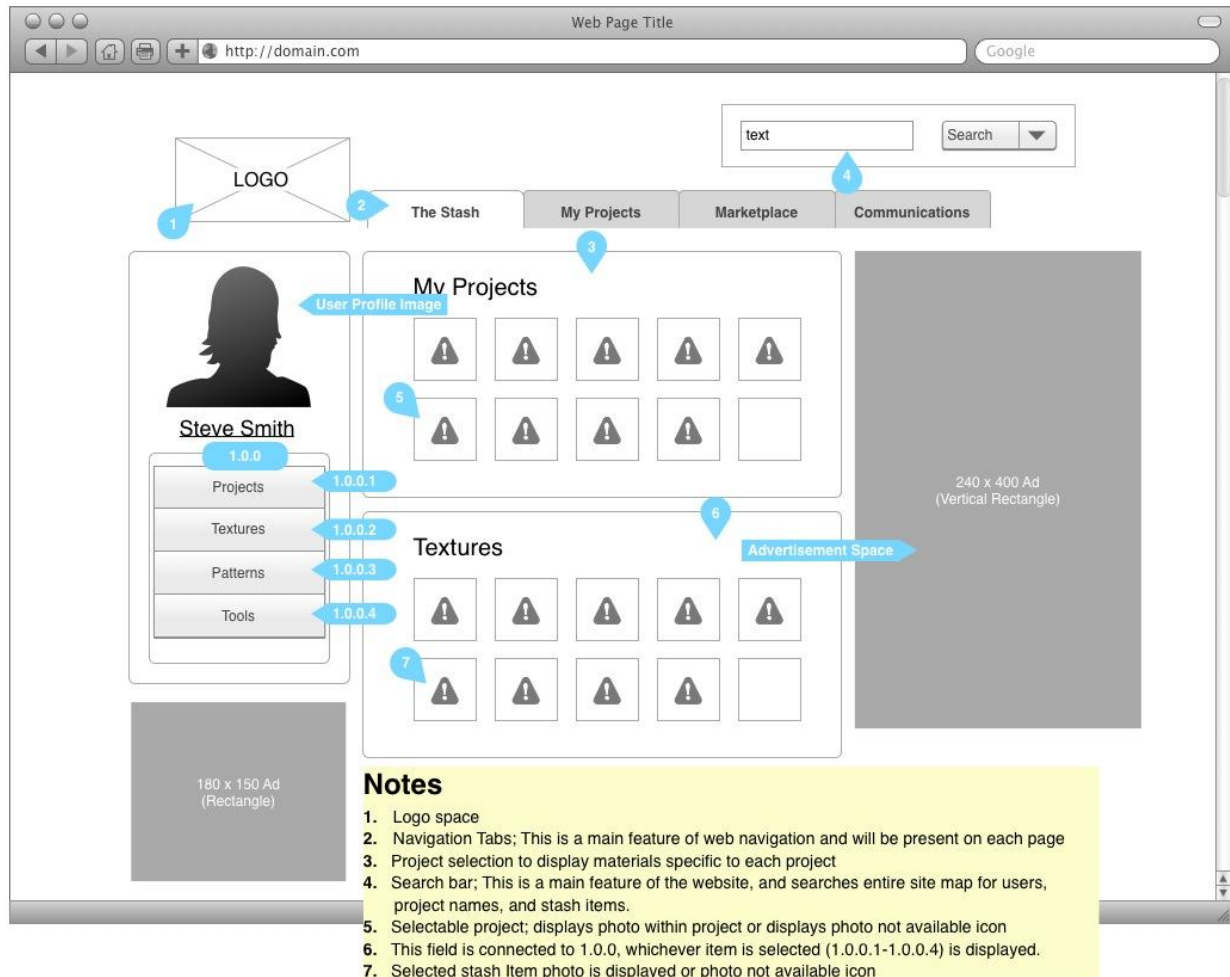
Figure 2.2.2: "Hi fi" Mockup of the stash.html

Figure 2.2.3 "Hi fi" Mockup of the project management depicts a more detailed overview of what it looks like to manage projects that the quilter is working on.
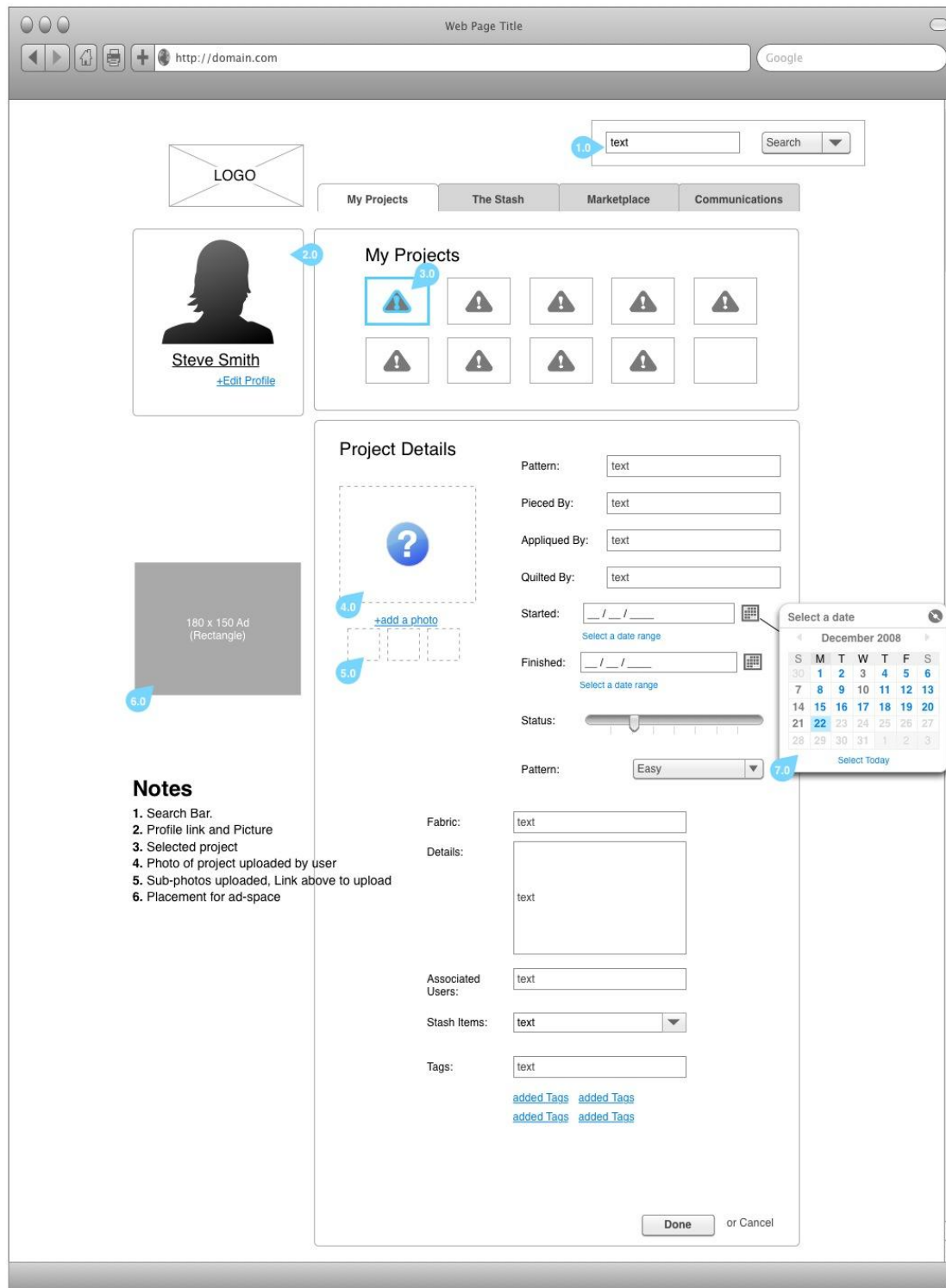
Figure 2.2.3: "Hi fi" Mockup of the project management

Figure 2.2.4 "Hi-Fi" Mockup of the marketplace, with focus on the fabric portion.

Figure 2.2.4: "Hi-Fi Mockup of the marketplace.html

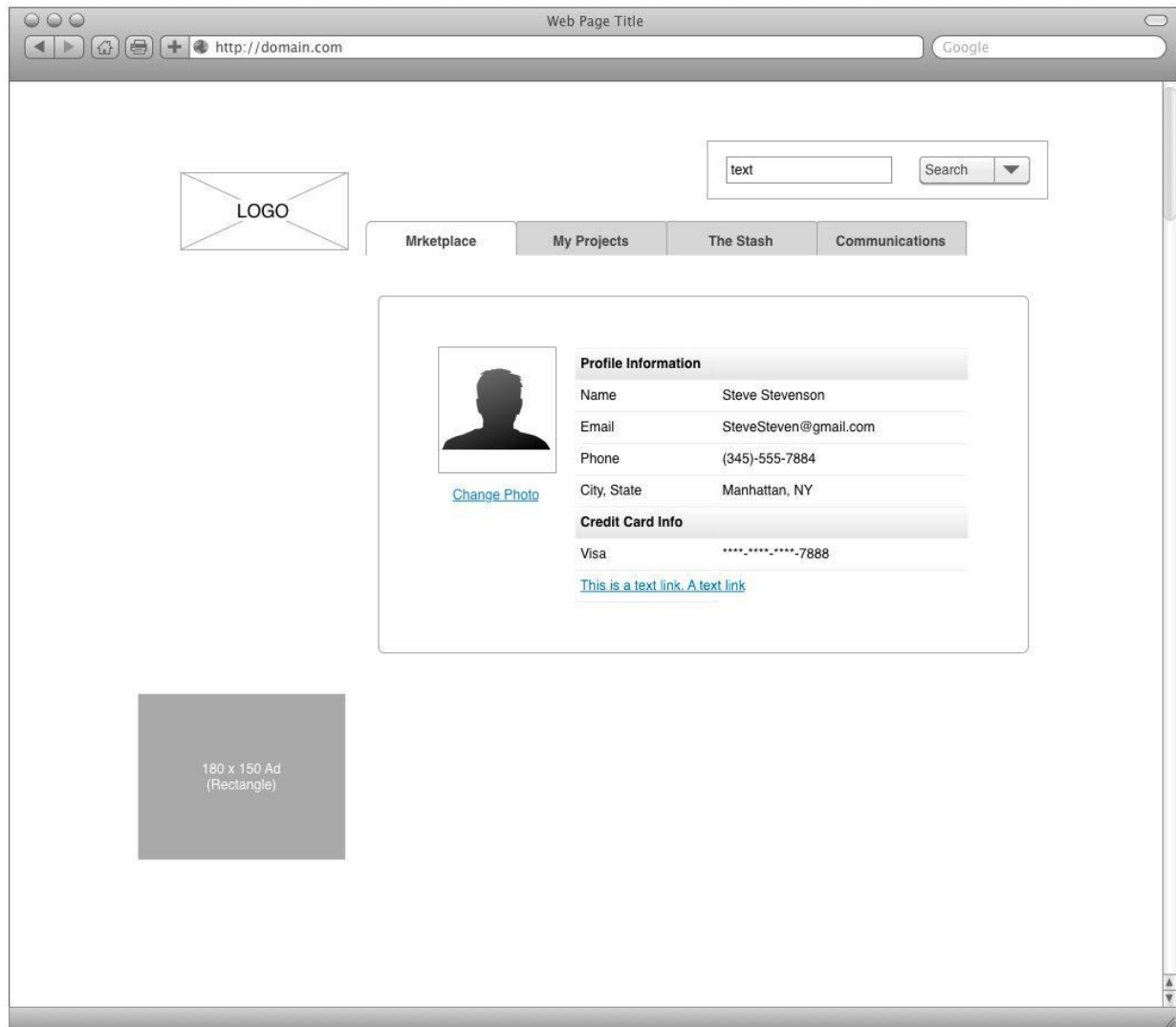Figure 2.2.5 "Hi-Fi" mockup of the profile.html screen where you edit information about your user as well as billing information

Figure 2.2.5: "Hi-fi" mockup of profile.html

2.3 Diagrams and Models

The following sections contain diagrams and models to help visualize the system and all of its components.

2.3.1 Data Flow Diagram (DFD)

Figure 2.3.1: Data Flow Diagram shows working relationships between external objects and internal object communications. It shows transmittance of data through processes, with input from and/or output to external/internal objects. The purpose of this artifact is to show process/data interactions.

0. Overall Data Flow
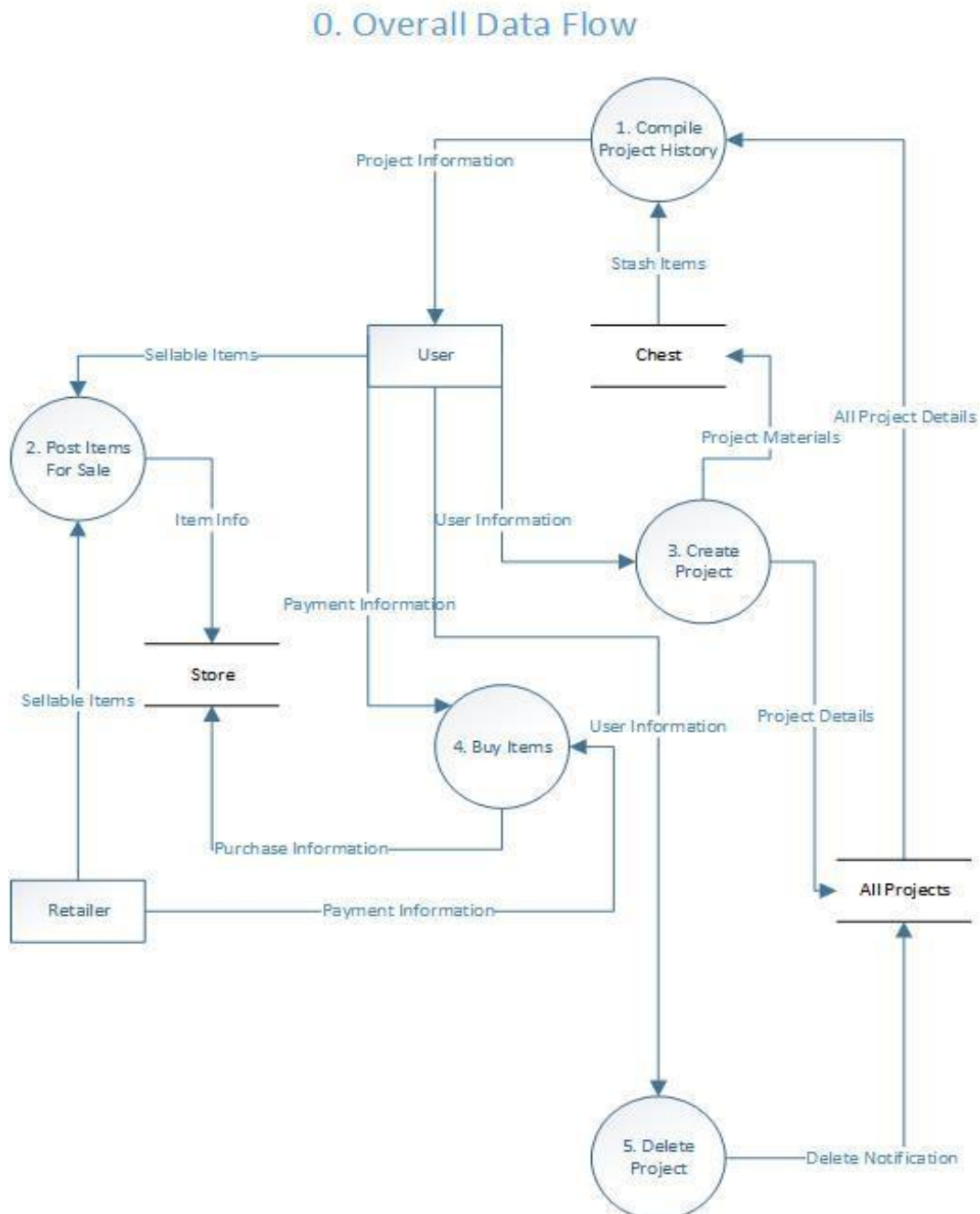
Figure 2.3.1: Data Flow Diagram

2.3.2 Domain Model

Figure 2.3.2: Domain Model Diagram visually describes the various things involved in this quilting service. Each box defines the vocabulary to be used when implementing the service.
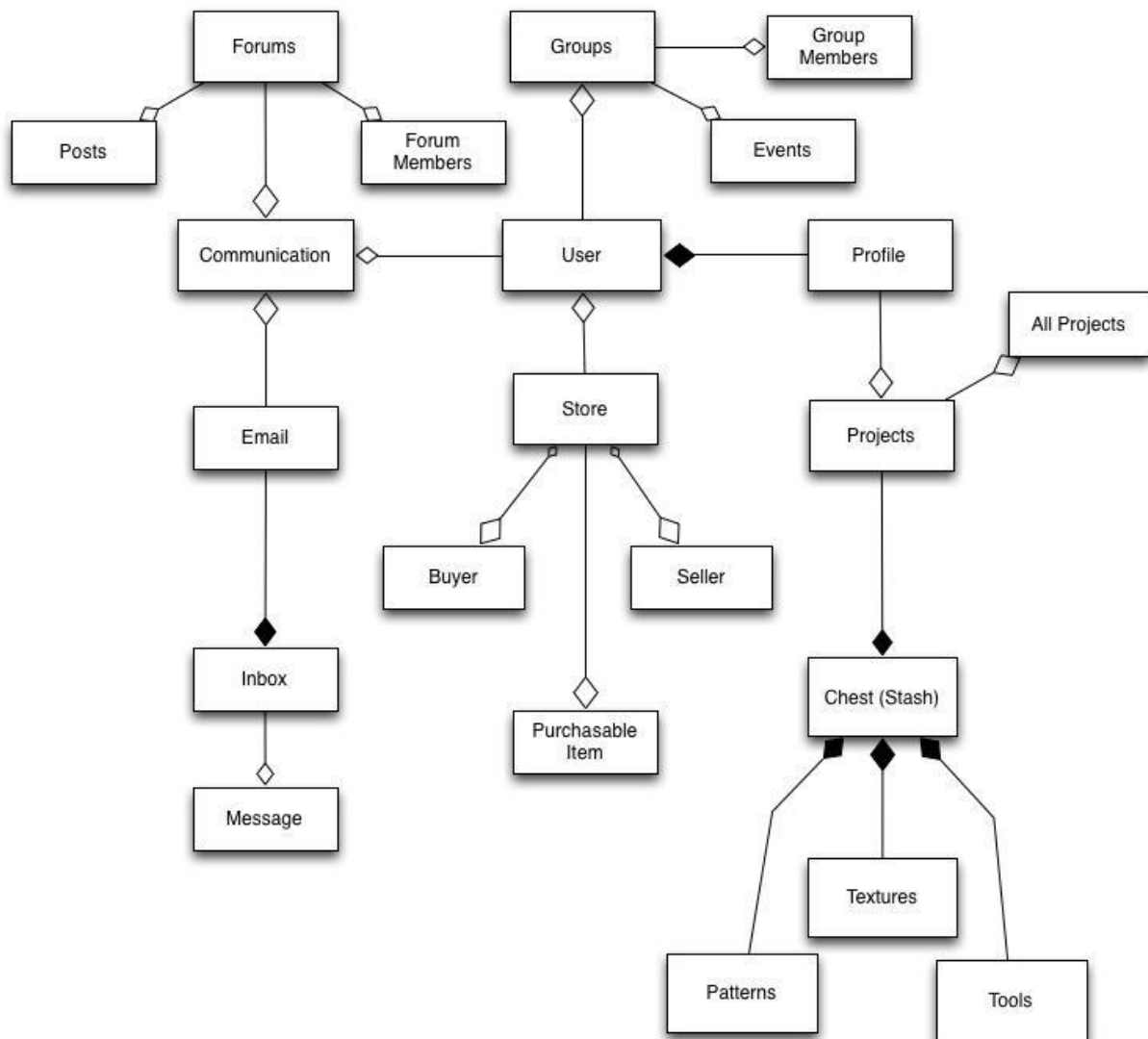

Figure 2.3.2: Domain Model Diagram

2.3.3 Use Case Diagram

The diagram *Figure 2.3.3 Use Case Diagram* depicts the interactions between our stakeholders and the system to be developed. Each circled item will has an appropriate Use Case in the section listed as *2.1.3 Use Cases.*
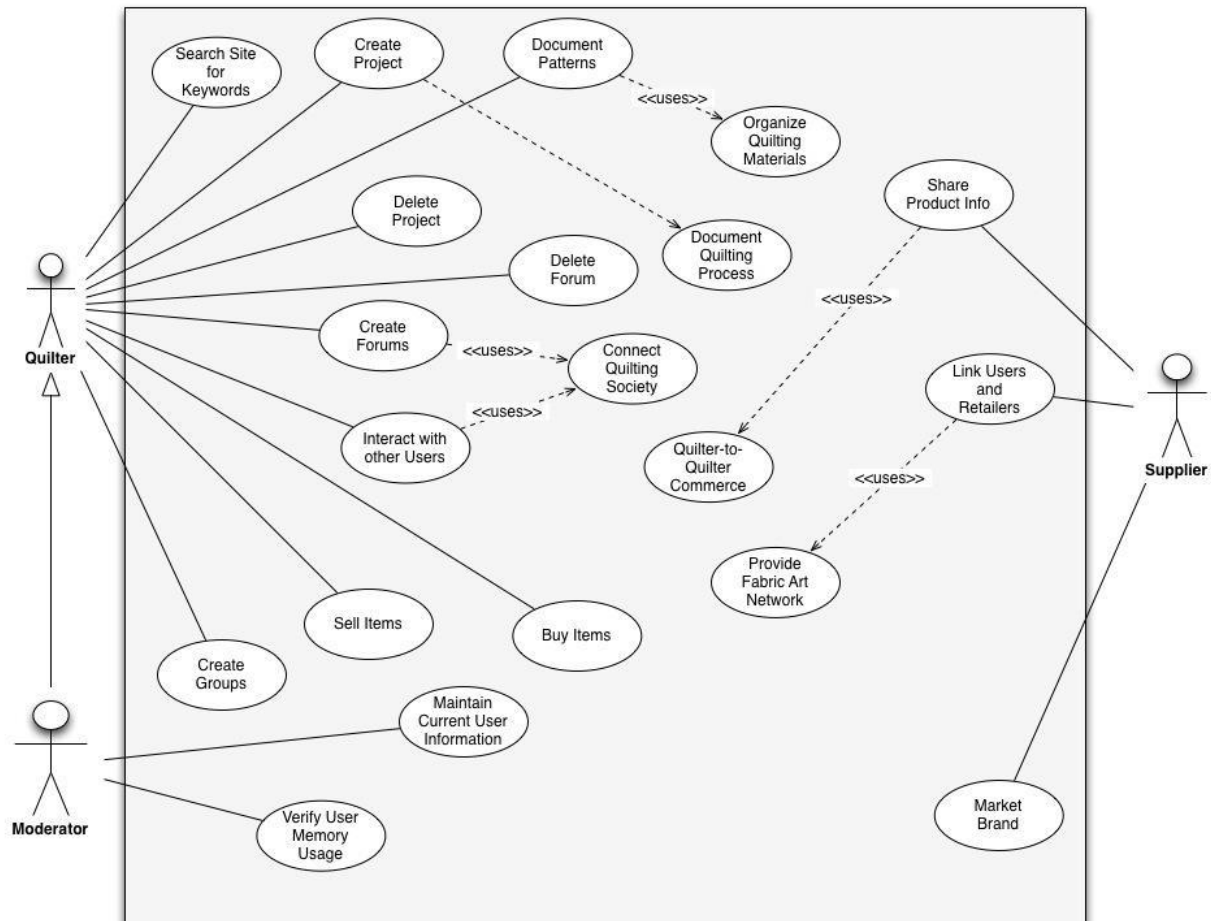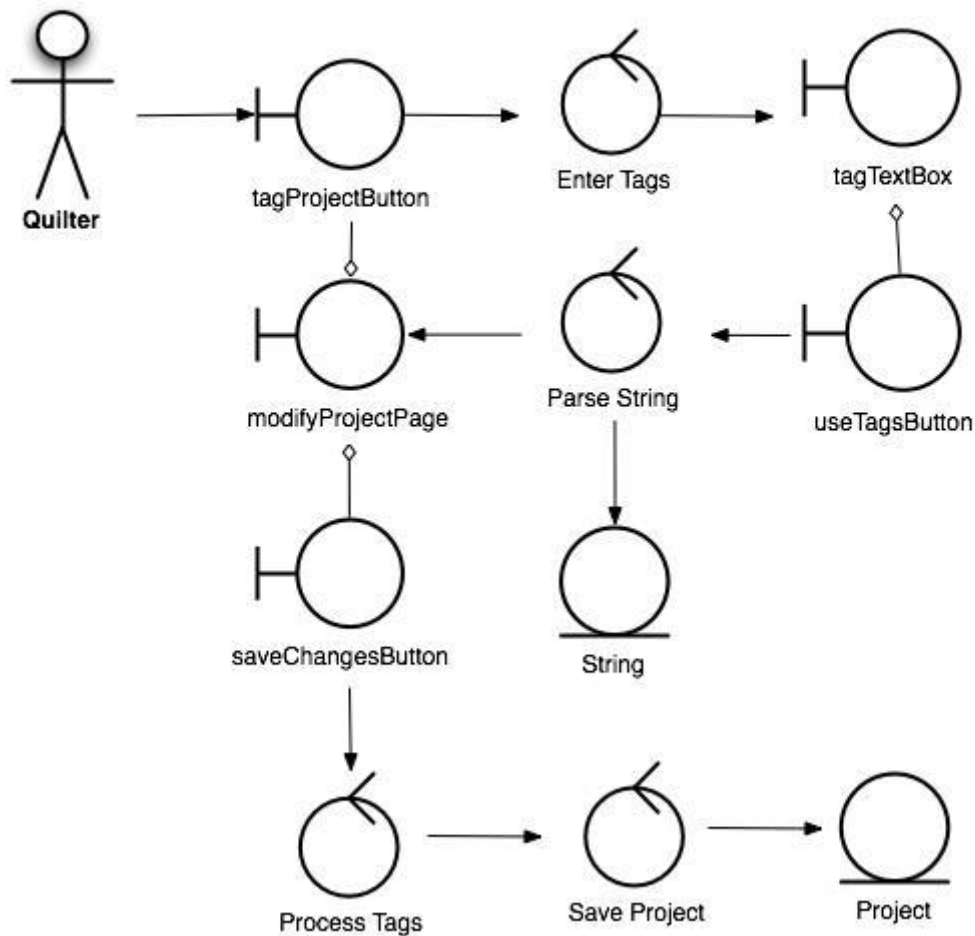

Figure 2.3.3: Use Case Diagram

2.3.4 Robustness Diagram

Robustness diagrams provide an initial design view to worded use cases. Each of these diagrams is linked to one of our use cases by ID number located in the top left corner of the diagram. These diagrams map to code objects, methods, and interfaces directly within the system.

UC9: Tag a Project

Written by: Diane Kerstein
Created on: 3/8/2014

Quilter

tagProjectButton

Enter Tags

tagTextBox

modifyProjectPage

Parse String

useTagsButton

saveChangesButton

String

Process Tags

Save Project

Project

2.3.4.1: Robustness Diagram (UC9)

Figure 2.3.4.1: Use Case Diagram depicts the robustness of Use Case 10 (UC10). In the next section, *2.3.5 Sequence Diagram*, this diagram is fleshed out as a function over time.

UC10: Add a Pattern

Written by: Josh Brunner
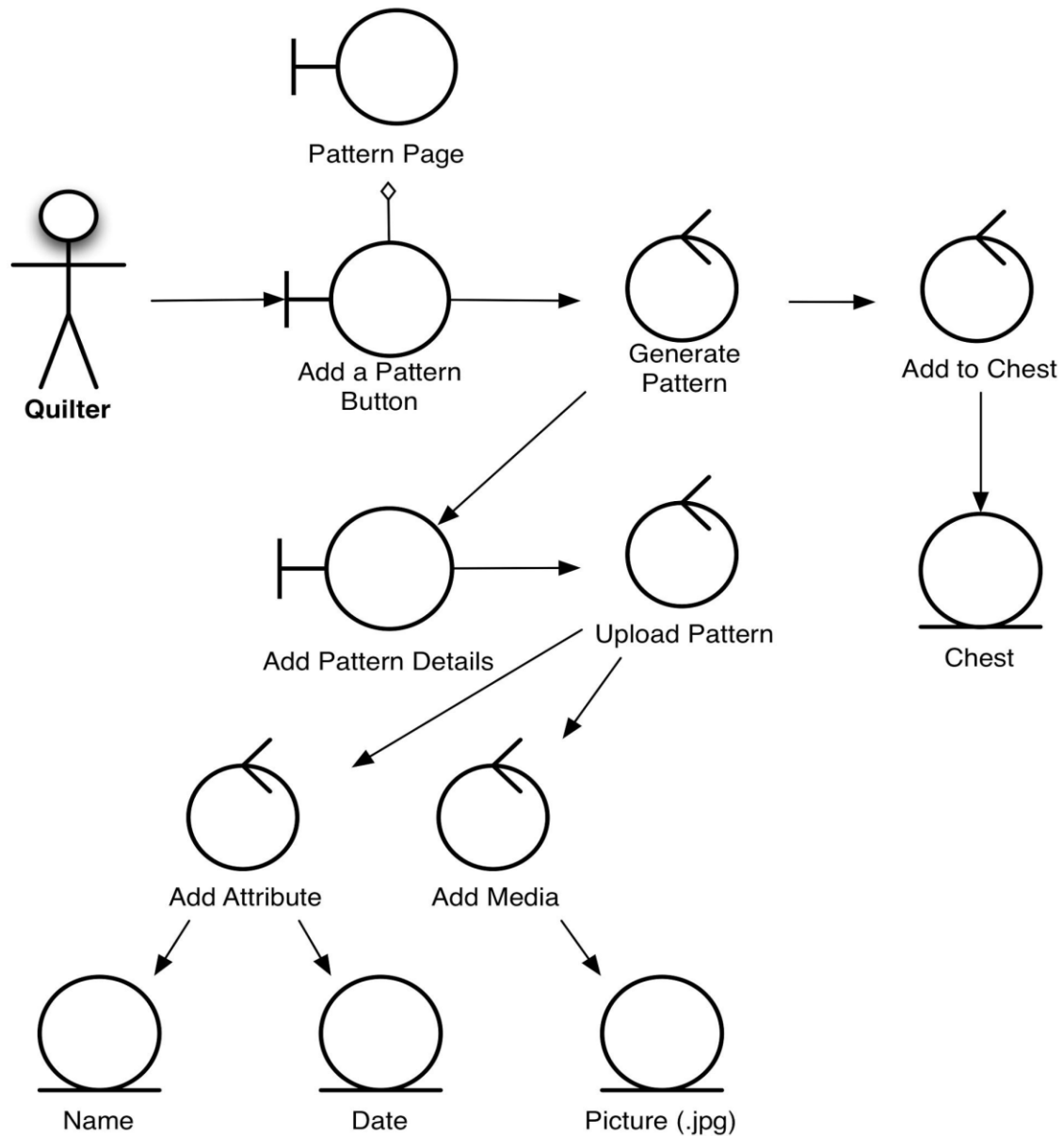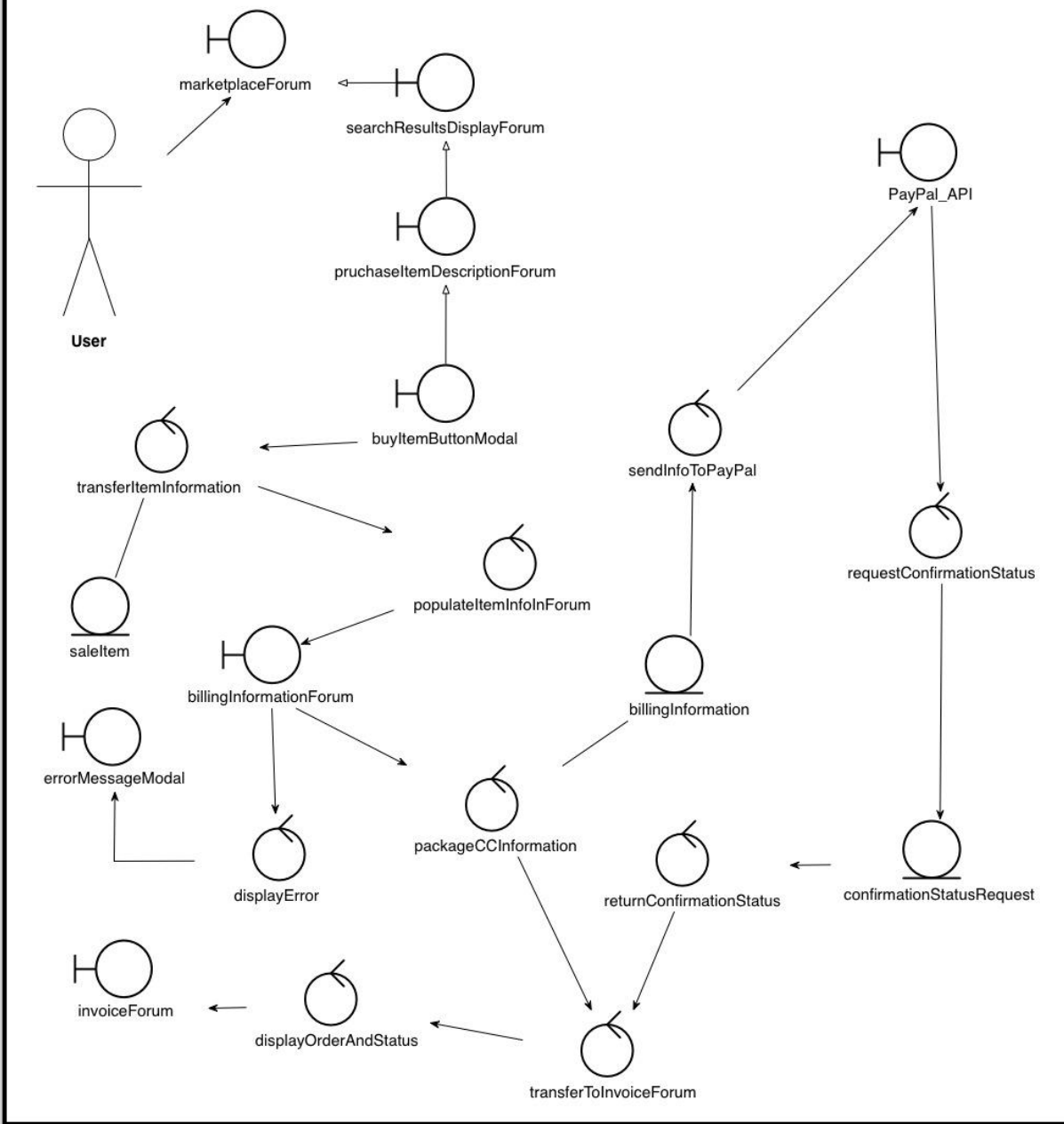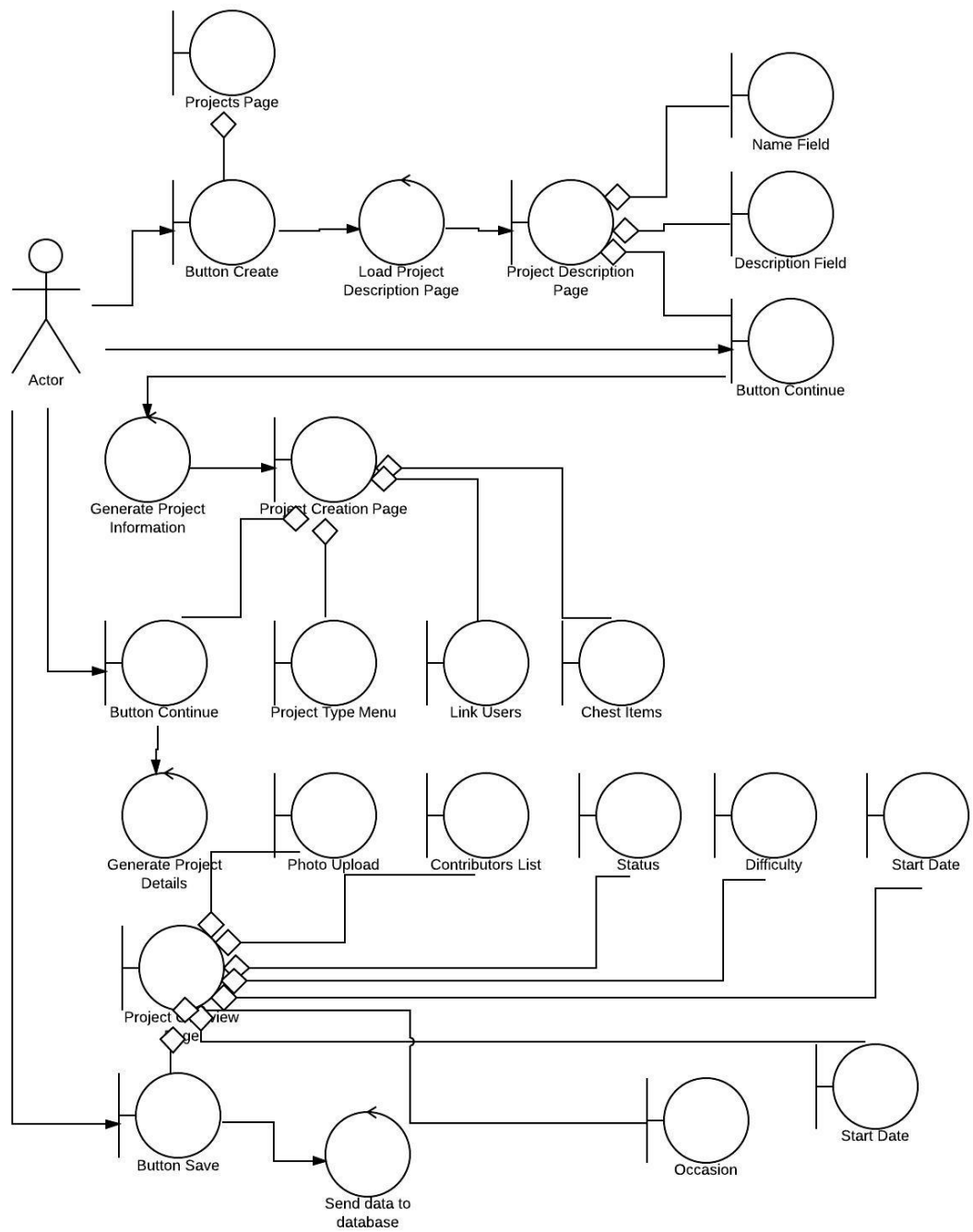Created on: 3/5/2014

Figure 2.3.4.2: Robustness Diagram (UC10)

2.3.4.3: Robustness Diagram (UC11) depicts call flow for buying items from marketplace

2.3.4.4: Robustness Diagram (UC1)

2.3.5 Sequence Diagram

Figure 2.3.5: Sequence Diagram depicts the Use Case: Add a Pattern over time. The interactions between the different sections are depicted below.
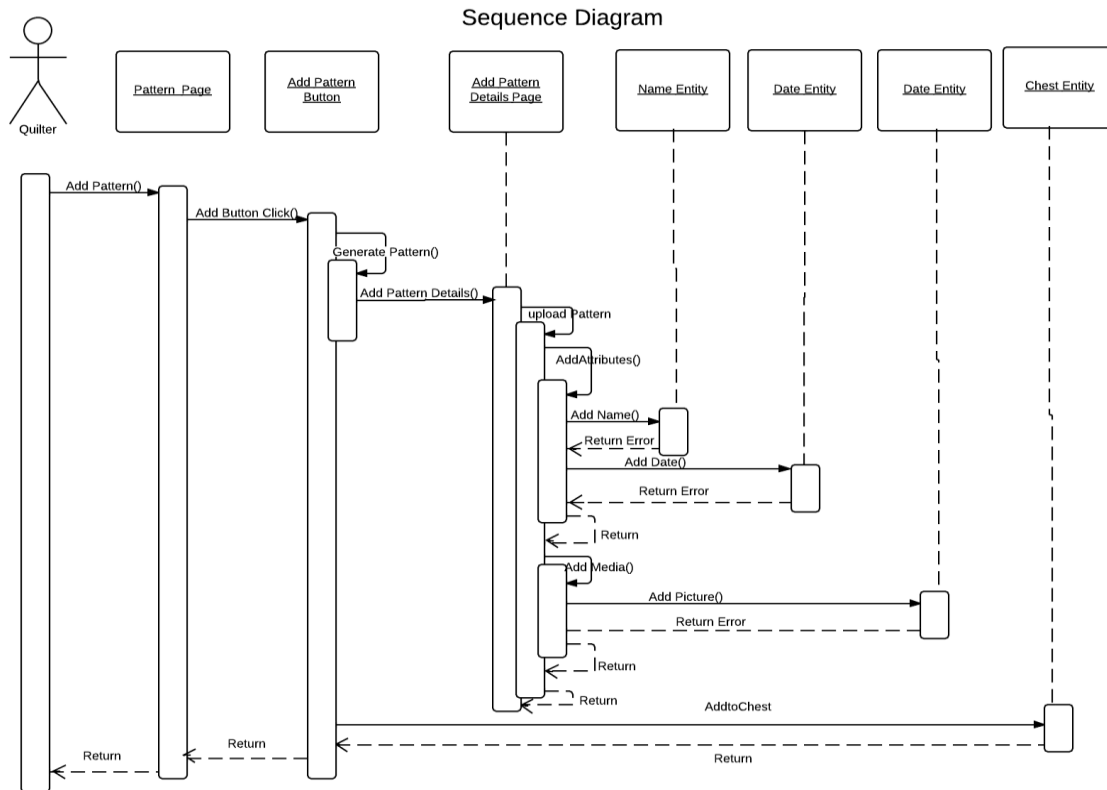

Figure 2.3.5: Sequence Diagram

3.0 Conclusion

We've designed a system that meets the needs expressed by the quilting community in Texas. However, this system is designed to be extensible to accommodate a variety of other communities as well. Upon approval of this proposal, the system will go into a six month development stage where contact with initial design team/sponsor will be limited none.

3.1 Stakeholder Communication

As we work closely with Colleen (our sponsor), we continue to learn more about the big picture of this project. We communicate primarily via email and video chat with Colleen to establish a better understanding of the requirements they need.

3.1.1 Further Elicitation

- Email Colleen to connect with quilting community (*Email sent January 7*)
- Complete modeling of system with stakeholders to generate useful artifacts (*In progress)*
- Submit project proposal for sign-off with quilting club (*Planned for March 17*)

4.0 Appendix

Artifacts and stakeholder communications

4.1 Inception Whiteboards - Jan 8 2014
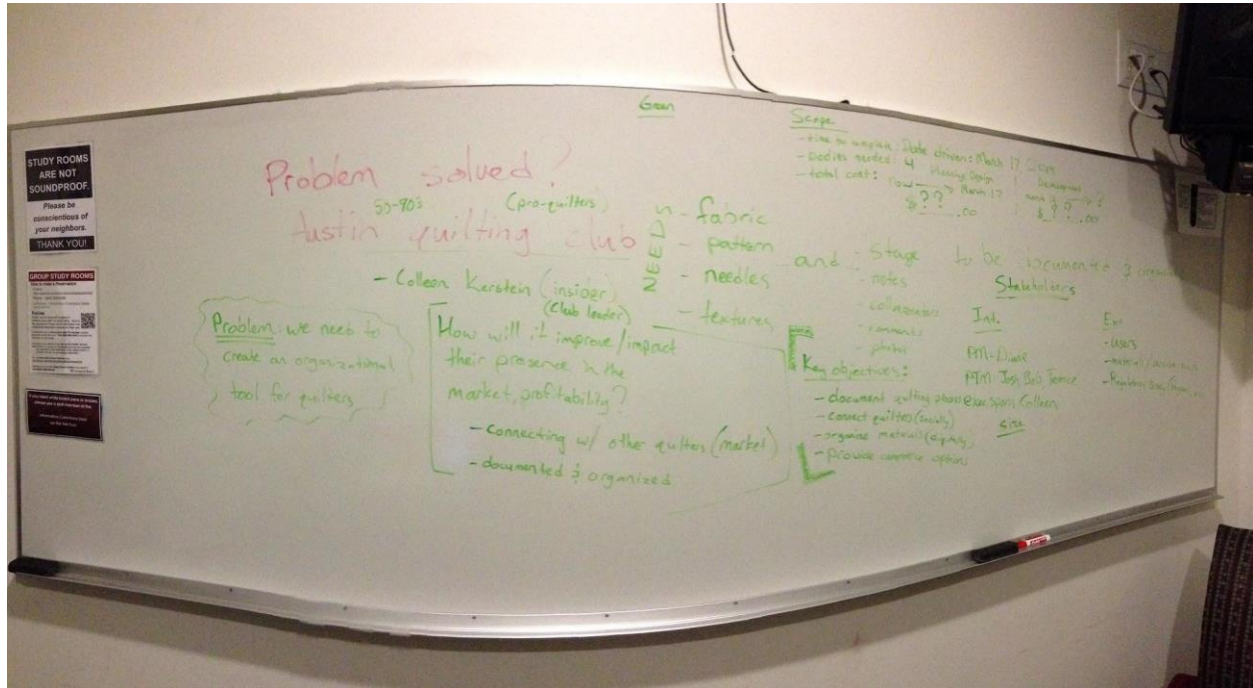
Figure 4.1.1: Inception Whiteboard Panorama

iven: March 17, 2014

nning/Design   Development

⇒ March 17   march 19 → ?

_.00 $? ? .00

to be documented & organized.

Stakeholders

Int.

PM=Diane

PTM: Josh, Bob, Terence

process exec.spons Colleen

ially)

digitally)

options   Size

Ext

- Users

- materials / service sup.

- Regulatory Body (Paypal, etc.)
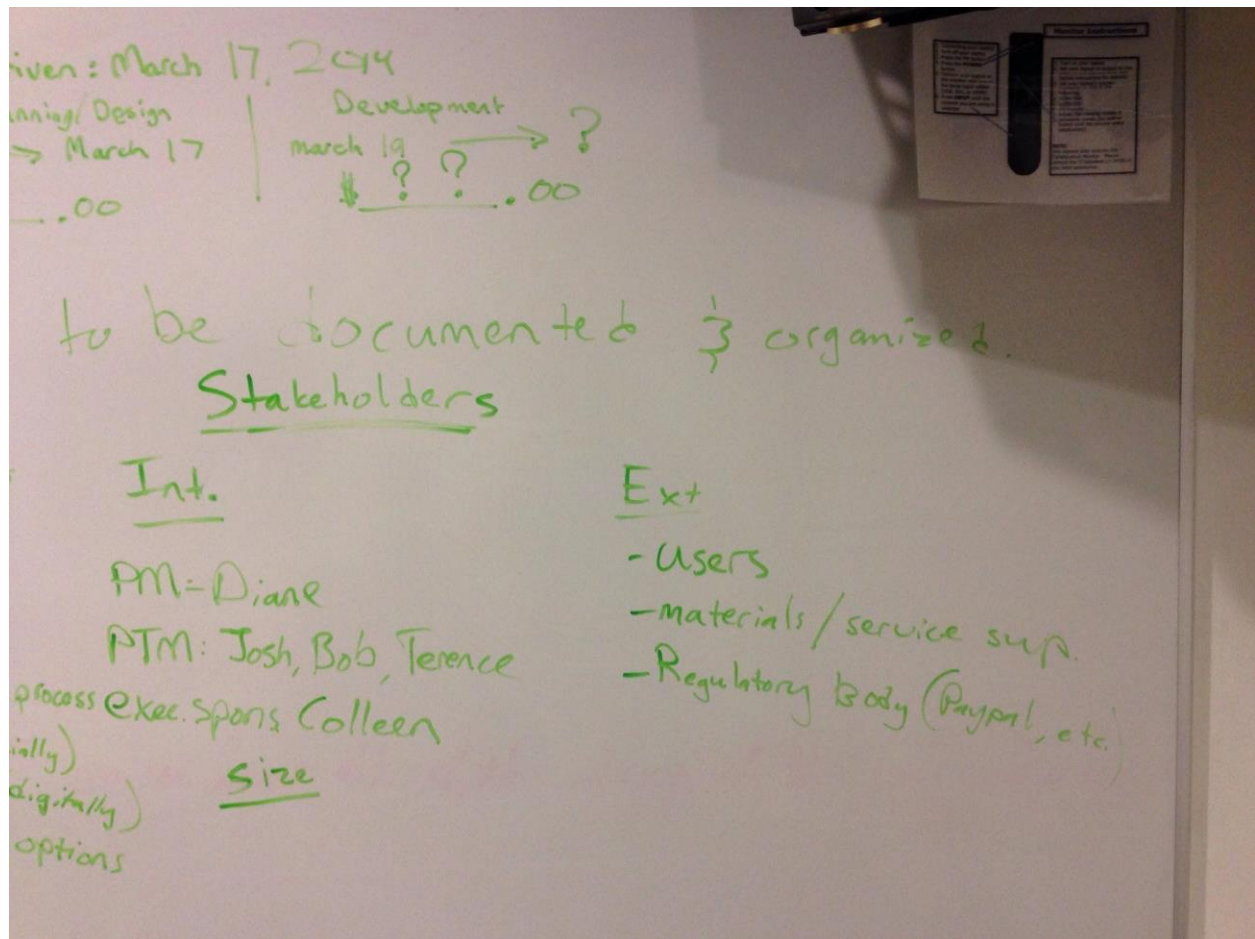
Figure 4.1.2: Inception Whiteboard Stakeholder Detail

Green

Scope
- time to complete: Date driven: March 17, 2014
- bodies needed: 4   Planning/Design   Devel
- total cost: now ——→ March 17 | march 19
                $? ? . 00 $?

...rs)

lub

NEEDS
- fabric
- pattern   ...and... - Stage   to be docu
- needles   - notes   Stakeholde
...der)   - collaborators   Int.
o leader)   - textures - comments
prove/impact   - photos   PM = Diane
  in the   PTM: Josh, Bob, Te
bility?   Key objectives:
                                     exec. spons Colleen
            - document quilting process
w/ other quilters (market) - connect quilters (socially)
                            - organize materials (digitally)   Size
÷ organized   - provide commerce options
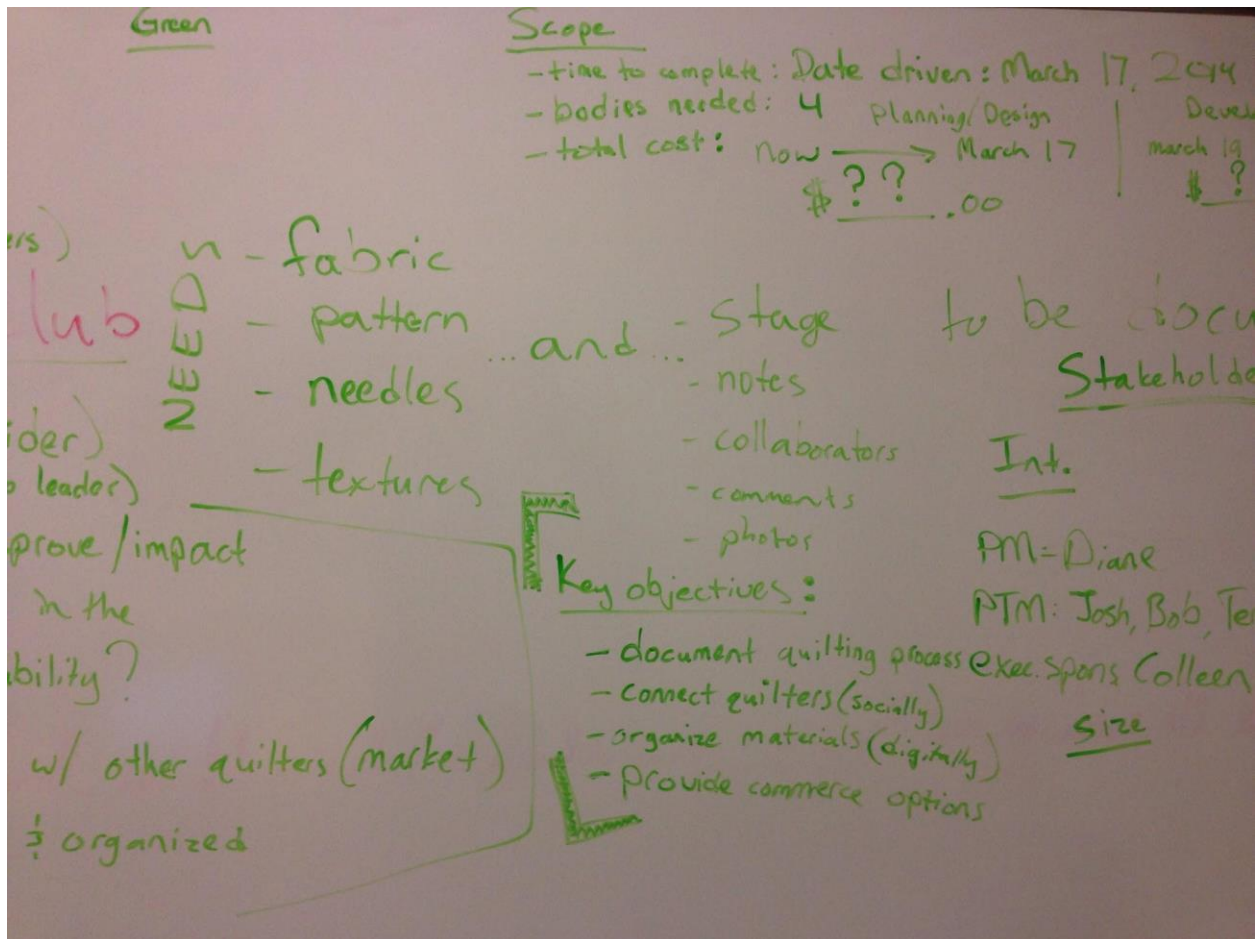
Figure 4.1.3: Inception Whiteboard Needs and Objectives Detail
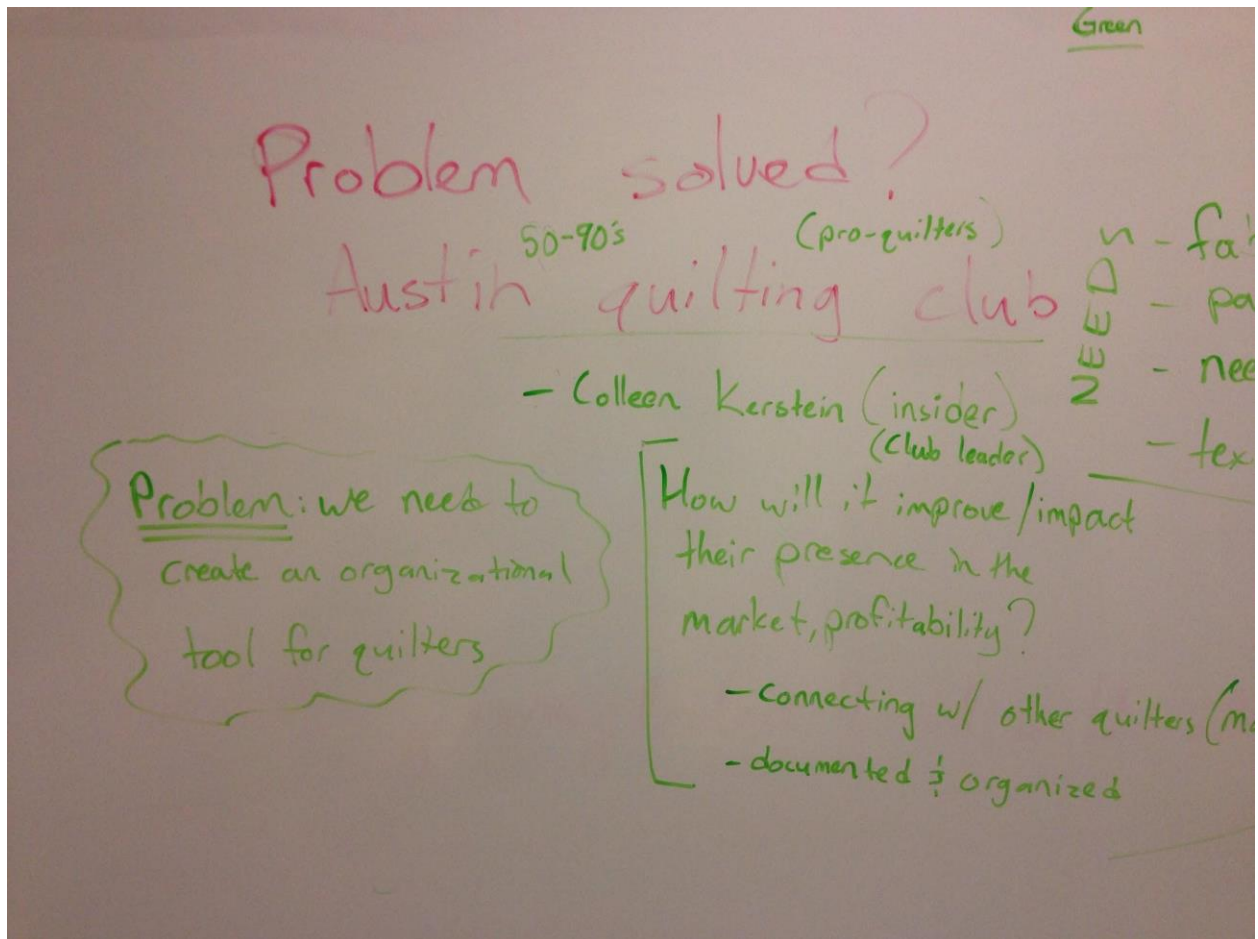
Figure 4.1.4: Inception Whiteboard Problem Detail

4.2 Initial Stakeholder Email - Jan 7 2014

Figure 4.2.1: Jan 7 2014 Initial Stakeholder Email

4.3 Quilt Journal Email - Jan 24 2014

Figure 4.3.1: Jan 24 2014 Stakeholder Quilt Journal Email
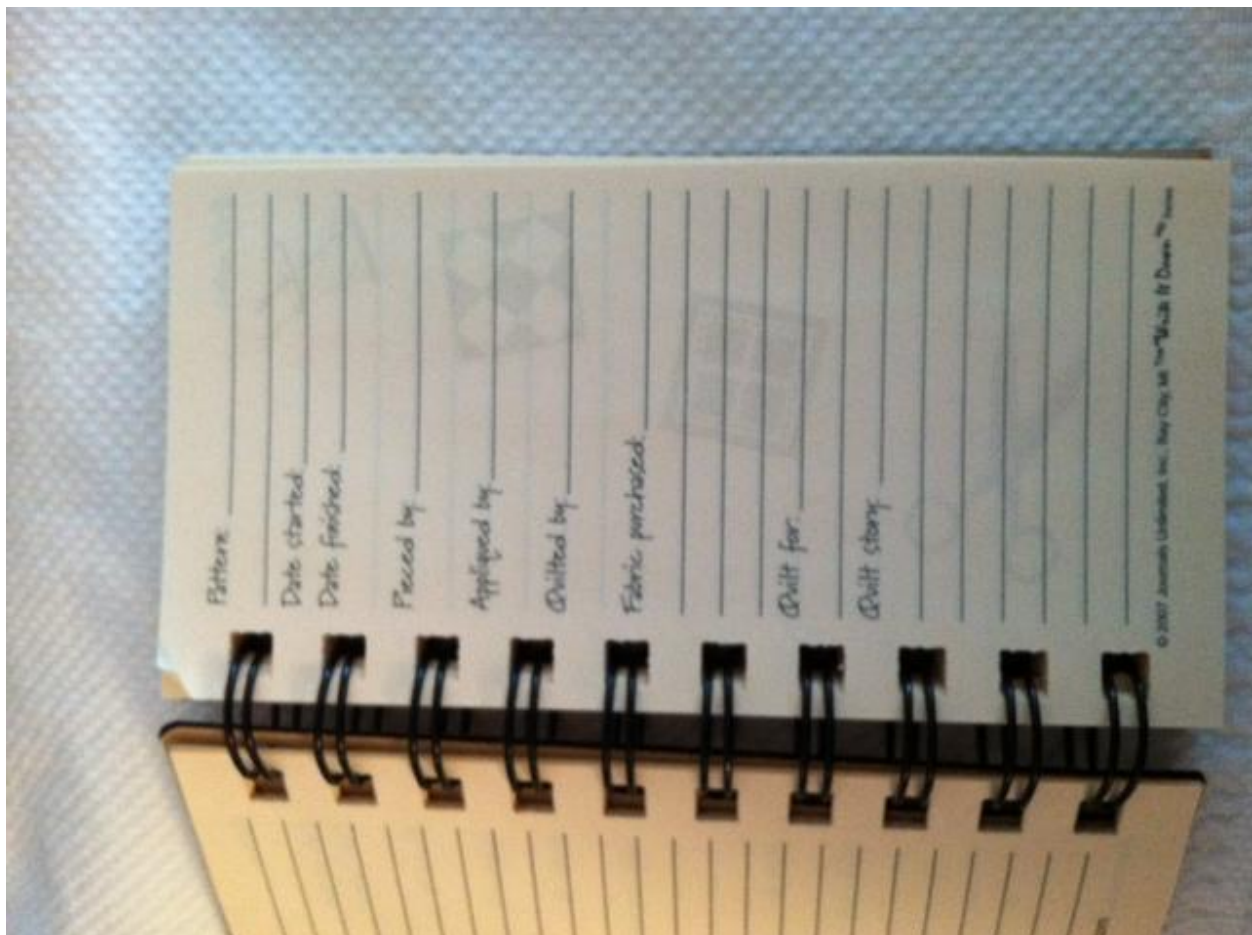

Figure 4.3.2: Jan 24 2014 Stakeholder Quilt Journal Email Attachment

4.4 Stakeholder Quilt Pattern Examples - Feb 10 2014

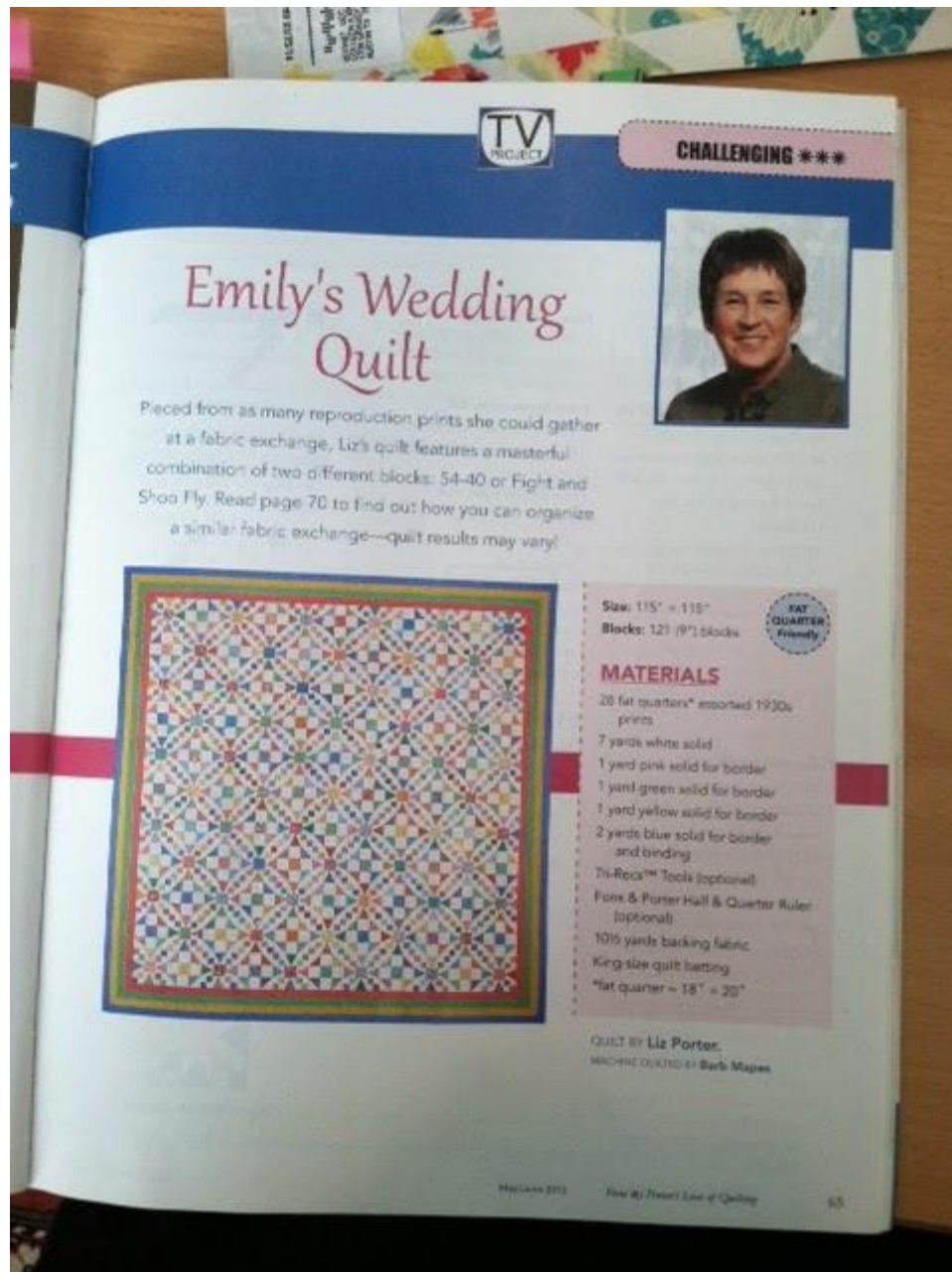*Figure 4.4.1: Wedding Quilt Example*

Figure 4.4.2: Wedding Quilt Example

Figure 4.4.3: Wedding Quilt Example

CUTTING

Measurements include ¼" seam allowances. Patterns for C and D triangles are on page 67.

From fat quarters, cut a total of:
• 56 (2"-wide) strips for strip sets.
• 86 (3½"-wide) strips. From strips, cut 121 (3½") A squares, 240 half-square B triangles, and 244 C triangles.

NOTE: If not using Fons & Porter Half & Quarter Ruler to cut B triangles, cut:
• 20 (3⅞"-wide) strips. From strips, cut 120 (3⅞") squares. Cut squares in half diagonally to make 240 half-square B triangles.
• 56 (3½"-wide) strips. From strips, cut 121 (3½") A squares and 244 C triangles.

From white solid, cut:
• 28 (2"-wide) strips. Cut strips in half to make 56 (2" × 20") strips for strip sets.
• (3½"-wide) strips. From strips, cut 240 (3½") A squares, 240 half-square B triangles, 244 D triangles, and 244 D triangles reversed.

NOTE: If not using Fons & Porter Half & Quarter Ruler to cut B triangles, cut:
• 12 (3⅞"-wide) strips. From strips, cut 120 (3⅞") squares. Cut squares in half diagonally to make 240 half-square B triangles.
• 40 (3½"-wide) strips. From strips, cut 240 (3½") A squares, 244 D triangles, and 244 D triangles reversed.

From pink solid, cut:
• 13 (2½"-wide) strips. Piece strips to make 4 (2½" × 120") border strips.

From green solid, cut:
• 12 (2½"-wide) strips. Piece strips to make 4 (2½" × 129") border strips.

From yellow solid, cut:
• 12 (2½"-wide) strips. Piece strips to make 4 (2½" × 120") border strips.

From blue solid, cut:
• 12 (2½"-wide) strips. Piece strips to make 4 (2½" × 129") border strips.
• 13 (2½"-wide) strips for binding.

54-40 OR FIGHT BLOCK ASSEMBLY

1. Join 1 print C triangle, 1 white D triangle, and 1 white D triangle reversed as shown in Star Point Unit Diagram. Make 244 Star Point Units.

Star Point Unit Diagrams

2. Join 1 print strip and 1 white strip as shown in Strip Set Diagram. Make 56 strip sets. From strip sets, cut 488 (2"-wide) segments.

Strip Set Diagram

3. Join 2 segments to make 1 Four Patch Unit as shown in Four Patch Unit Diagram. Make 244 Four Patch Units.

Four Patch Unit Diagrams

4. Lay out 4 Star Point Units, 4 Four Patch Units, and 1 print A square as shown in "54-40 or Fight Block Assembly Diagram." Join into rows; join rows to complete 1 block (54-40 or Fight Block Diagram). Make 61 54-40 or Fight blocks.

54-40 or Fight Block Assembly Diagram

54-40 or Fight Block Diagram
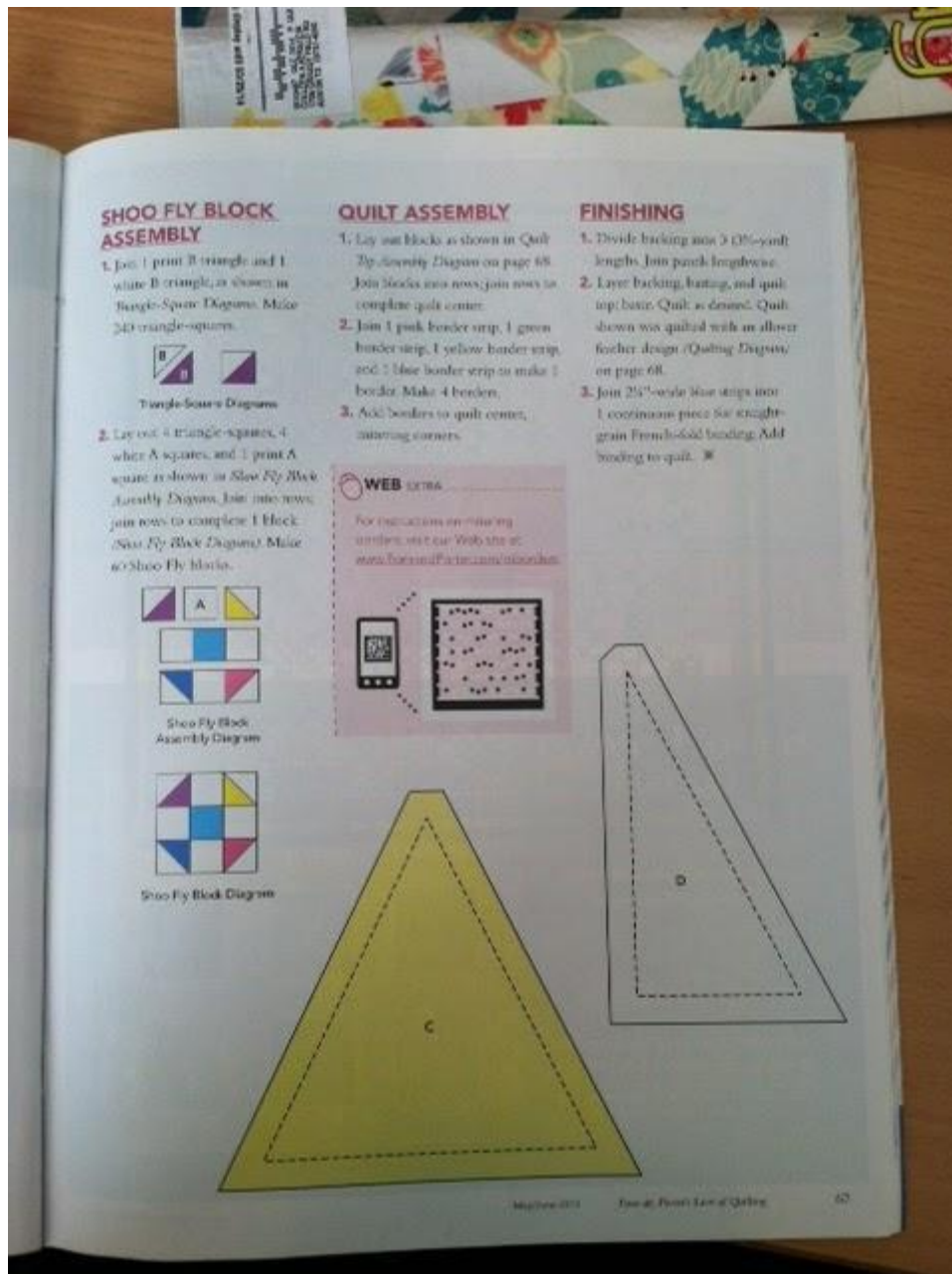
SHO ASS

Figure 4.4.4: Wedding Quilt Example

Figure 4.4.5: Wedding Quilt Example

4.5 Stakeholder Project Review Phone Interview - Feb 14 2014
Date: February 14, 2014
Interviewer: Diane Kerstein
Interviewee: Colleen Kerstein
Subject: Quilt project review

Project Page
Pattern: <pattern> or written in
Pieced by: <person>
Appliqued by: <person>
Quilted by: <person>

Started: pick from calendar
Finished: pick from calendar
Status: pick from percentage range
Difficulty: choose from range easy to hard

Fabric: (optional to add or pick from stash)
- how much used (yardage) - typed in
- color way/line (ex: "downtown abbey") - typed in
- manufacturer (ex: "Hoffman") - <manufacturer page> or typed in
- where purchased - <retailer page> or typed in

Details: (optional to add)
- applique thread color
- quilting pattern (ex: "scalloped)
- applique pattern

Notes: (open section)

Manufacturer page
About blurb
Link to website
List of fabrics (name, photo, category, format, style)
Forum pages

Fabric page Details
Picture
Manufacturer
Designer
Fabric name
Color

Theme

Category:
- Apparel
- Batting
- Home Decor
- Interfacing
- Quilting
- Ribbon
- Specialty

Format:
- Charm Pack
- Design Roll
- Design Strip
- Fat Quarters
- Jelly Roll
- Panel
- Uncut

Style:
- Batik
- Canvas
- Corduroy
- Cotton
- Flannel
- Fleece
- Knits
- Laminate
- Linen
- Organic Cotton
- Polyester
- Rayon
- Sateen
- Voile

Stash fabric details
Manufacturer and fabric name
Where purchased - <retailer page> or typed in
Yardage
Price
Picture
Date purchased
Projects it's linked to

My Projects/Stash
Grid of pictures of items with name above

Pattern
Pattern name
Pattern creator: <quilt designer page>
Published in: <pattern collection page>
Category (ex: baby quilt, tapestry)
Date published
Fabric suggested: <fabric page>
Difficulty
Size
List of tags
Notes (open section)