Build-A-Beer

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Introduction

For our term project, we set to create an interface for the Build-A-Beer business idea, focusing on the investigation, ideation, prototyping, and evaluating stages of the user-centred design process.

We started by outlining the specifics of our business idea and conducting user research to determine potential roadblocks and the best ways to approach these problems. We continued by ideating with a series of sketches and then using Balsamiq to create a lo-fi prototype that synthesized these ideas. After evaluating the lo-fi prototype, we created a hi-fi prototype in Adobe XD that we then conducted a heuristic evaluation on. Using this evaluation as well as feedback from our hi-fi presentation, we completed revisions to the project.

Following the user-centred design process in this manner allowed us to refine our ideas and implementations through each iteration. This report details the steps we took between the formation of our project and the current, revised high-fidelity prototype.

Project Overview

Build-A-Beer seeks to exploit the gap that exists between microbreweries and home breweries by providing facilities, staff, and experience to customers who will distribute, promote, and identify recipes of beer.

Build-A-Beer has a public event that they call an 'exBeerience' in which customers create beer with the aid of an on-site brewmaster, but seek to allow customers to purchase and customize beers online as well.

Users purchasing beers online will be able to choose a previous beer recipe made at an exBeerience, chosen from Build-A-Beer's catalog, or to create a beer on-the-fly using a 'building beer' webapp, which will be the main function of this report. This webapp will be used through a module on the Build-A-Beer website.

User Research and Findings

In order to create an application to fulfill our proposed product, we conducted user research, using two research methods: personas and secondary research.

For the persona research method, we used a provided profile of the target Build-A-Beer consumer group. As this profile noted that 93% of respondents describe themselves as "passionate or enthusiasts," we used this profile as a tool for building the persona of a beer connoisseur. We named this persona "Robert Atkins," attached in Appendix A.

In addition to our persona of a beer connoisseur, we wished to create a persona of a more casual beer consumer. We named this persona "John Smith," attached in Appendix B.

The main points of findings from surveys and research were:

- 60% of beer drinkers are male
- 42% of craft beer enthusiasts are between ages 35-49
- 72% have a bachelor's degree or higher
- 63% have a yearly income of over $75,000
- 93% self-identified as passionate or enthusiasts of beer

The findings from the research created personas indicated a number of outcomes, including the following:

- What we create should be well-thought-out and not overly simplistic in usage due to the fact that our personas were both proficient users of technology
- An above-average amount of information should be at hand and made readily available to assist the persona in creating a custom creation
- For the connoisseur-type user, comments and recommendations from the community on individual recipes should be available and users should be encouraged to document their creation so others may benefit from past knowledge
- History and 'wishlists' might be a good option to consider
- Both pre-built and customization options would be required for the user base

For the secondary research method, we discussed various areas surrounding the project that we required clarification or additional knowledge surrounding and then conducted research into these intricacies of the craft-brewing process. We found that the beer-making process contains three broad areas in which choice from the user will be required.

The first area was for the fermentation process, wherein users will need to select whether they wish to create an ale or a lager. The second area was for the malting process, wherein users will need to select what kind of malt they wish to use, including the proportions of barley, wheat and rye used. The third area was for the boiling process, wherein users need to choose flavours to add to their brew. This research helped us decided what choices we were able to leave up to users.

Design and Justification

Our first created design was a low-fidelity design created using Balsamiq. For this prototype, we started by each creating a number of sketches for ideas for potential designs. We evaluated these designs among ourselves, selecting portions to prototype based on adherence to design principles and heuristics as well as personal preferences. These sketches are compiled in Appendix C.

After deciding on components of our sketches worth pursuing, we created a basic lo-fi prototype of our system. This prototype focused largely on elements like layout and

workflow, placing emphasis on ensuring the design was intuitive and easy for users to navigate rather than focusing on aesthetics. We identified a number of areas of concern in our prototype, including with issues surrounding navigation within the beer-customization modal and overcrowding within pages.

After evaluating our lo-fi prototype, we used Adobe XD to create a hi-fi prototype. We implemented style guidelines, including defining a yellow-brown colour scheme and selecting Montserrat, a free-use, sans serif font. With these guidelines in place, we made our hi-fi prototype, focusing on a horizontal implementation of our application that encompassed the entire workflow and provided refined designs for each page on the Build-A-Beer website. Evaluations for this prototype can be found in the following section.

Heuristic Evaluation and Findings

After creating our hi-fi prototype, we conducted a heuristic evaluation. While we had mostly positive results, we identified a number of areas of concern for improvement in future revisions to our hi-fi prototype.

Visibility of system status

+: The homepage gives information about whether or not a user is logged in
+: Customization process shows user their show within process via highlighting area of progress bar
-: The number of items in shopping cart not visible throughout interface

Match between system and the real world

+: Beer customization process occurs in logical process mirroring that of real-world beer brewing
+: Abstractions, i.e. idea of 'customization,' use logical and established symbolic cues, i.e. gears

User control and freedom

+: During customization process, user is free to move within the five steps of the beer-making process
+: User can customize any order, even after it has been added to the shopping cart

Consistency and standards

+: Symbols with established meanings carry over meanings within Build-A-Beer site
+: Site complies with general web design standards

Error prevention

-: User is allowed to exit from beer-making modal without dialogue box warning user that their progress will not be saved

Recognition rather than recall

+: Inline help boxes make instructions for use of the system easily retrievable
+: Within beer-making customization modals, all possible areas of customization visible on screen at all times

Flexibility and efficiency of use

+: First screen of beer-making modal allows users to brew a predetermined recipe. Doing so skips to the final step of customization, allowing acceleration of process
+: Ability to add brew to user's 'favourites' allows for quicker user in future

Aesthetic and minimalist design

+: Follows defined stylistic standards, including colour and font scheme
-: Information accompanying steps of customization process may not be needed by advanced users, leading to excessive information

Help users recognize, diagnose, and recover from errors

-: No error-recovery workflows are present

Help and documentation

+: Inline help boxes give users information as they are working
+: FAQ section available for other inquiries

Usability Testing and Findings

For our usability testing, each member of our team conducted one usability test, for a total of four usability tests. We each conducted the test by having our test subject navigate through our hi-fi prototype in an attempt to complete a number of predetermined tasks. We each monitored our tests by shadowing the test subjects, providing verbal input and feedback when necessary, particularly when highlighting the features of our site not implemented in the hi-fi prototype. The predetermined tasks we asked our test subjects to complete were as follows:

1. Logging in to the Build-A-Beer website
2. Finding the Frequently Asked Question page
3. Customizing a beer recipe

Logging in to the Build-A-Beer website

Users were immediately confused by the two options present at the top-right corner of the Build-A-Beer site, "My Build-A-Beer" and "Sign-Up." A possible solution to this would be renaming the "My Build-A-Beer" button to "Log-In," and giving users the ability to enter the 'My Build-A-Beer' section of the site via a user homepage.

Additionally, when users log in, they are only given the option to log in through Google or Facebook accounts. However, when users sign up, they are expected to provide a username and password, which is not gathered during the log-in process. Users identified a need to standardize the forms between the log-in and sign-up pages.

Finding the Frequently Asked Questions page

Users had trouble locating the Frequently Asked Questions page, as our hi-fi prototype only had a link to the FAQ from the Shopping Cart page. Users said that they would have had an easier time finding the FAQ page if it was accessible from the homepage, as well as the log-in page.

Once on the FAQ page, users identified that the text was too small to be comfortably read. Increasing text size would solve this problem.

Customizing a beer recipe

One user encountered problems with the initial recipe page, citing an overflow of information. Similarly, another user was confused by the difference between the 'brew' and 'customize' buttons, particularly with the 'brew' button bringing users to the finalize page, which is part of the customization process. A solution we have identified is having the 'brew' button add the beer to the shopping cart immediately.

A design problem identified in all four usability tests was confusion about navigating between steps of the customization process. Users were looking for 'forward' and 'back' buttons in order to navigate and found it counter-intuitive to press on the symbols at the bottom of the modal for navigation. Additionally, the lack of visual representation of users' progress within the customization process made it difficult for users to see the process as a finite series of tasks with a defined start and end point. Adding arrows to either side of the modal would be a simple and non-intrusive way to make navigation more intuitive for users.

Users were confused about how they were expected to select between the 'ale' and the 'lagar' options in the second step of the customization process. Having radio buttons for users to make their choice or highlighting the photo of their choice when pressed would alleviate this concern.

One user identified the buttons on the bottom-right of the modal were worded in a confusing manner, specifically the 'SAVE' button. Changing the 'SAVE' button to say 'Save

Recipe' would both make the button's functionality more clear and would conform to our pre-established style standards.

Multiple users attempted to exit the modal and were not greeted by any error prevention messaging warning them that they are leaving and that their progress would not be saved. This is a clear oversight that needs to be implemented.

One user commented that the information buttons within the modal were too small. Upon examining this feedback, we determined that it was not a problem meriting design changes.

Recommendations for Next Iteration of Design

We have identified a number of recommendations for a future design.

- An implementation of a user forum in order to let users discuss beer recipes as well as foster a community
- A walkthrough of the beer-building process for users who wish to have more guidance for using the website
- Combing over of entire prototype for style and consistency
- Further usability testing and heuristic evaluations are necessary to find more design problems within existing design and new components.

Conclusion

Following iterative design principles for the creation of an app to satisfy the Build-A-Beer design problem allowed us to create a cohesive, high-fidelity prototype of our application. Though our prototype would still require more evaluation and revisions before being ready to implement into a release-quality product, conducting user research, creating lo-fi and hi-fi prototypes, and running heuristic evaluations and usability testing were vital in creating our final project.

Appendix A

Persona Type		Marketing	
1 User/Customer Name	**2 Job Title/Functional Role**		**3 Customer/User segment**
Robert Atkins	Mechanical Engineering Manager		Connoisseur
4 Photo	**5 Key Demographic Details**		**6 Personality & Behavioral Characteristics**
	Age: 44 years **Gender:** Male **Family:** Married, with 2 boys **Education:** Masters in Engineering **Location:** Calgary, AB **Income:** $132,000 **Organizational details:** Works on upstream oil and gas projects **Employment:** 15 years, 4 in current role.		Has a tendency to micromanage people and situations. May waffle on decisions that he is not familiar with. Usually researches topics thoroughly, and is confident in his decisions once he has researched them. Has a wide range of interests that he researches for the sake of knowledge. Is slightly introverted and has a few good friends. Many acquaintances through boys involvement in hockey. Comes off to others as a know it all. Slightly clueless to how others 'actually' perceive him.
7 Representative Quote	**8 Pain Points**		**9 Drivers & Influencers**

"I want it done right, and these things are worth exploring and tweaking."	Finds he is always wanting more details and abilities to customize.	Wants to show his intellectual superiority. Enjoys the intricacies of brewing the flavours and how they interact. Likes to talk and explore options with others.
10 Purchase/User Experience Goals	**11 Motivations**	**12 Perceived Obstacles**
Reduce time spent on manually extracting key talent management reports. Shift focus to building data-supported recommendations.	Wants to be able to fine tune options Would like to have information available should he choose explore further	Will not have new cool ingredients/options to try new creations Application does not proceed through steps logically. If changes are required at any stage, is there the ability to jump to that option, and return to current usage without losing place.
13 Relationship to Brand/Product	**14 Technology Expertise**	**15 Preferred Channels / Devices / Platforms**
Priorities is the final quality of product, but is also cost conscious. Will stick with product as long as the features and options exceed competing nearby products	Proficient in current OS and browsers in use. Expert in spreadsheets and word processing. Limited exposure to collaboration and text messaging.	Will use whichever platform fits him best. Prefers a laptop computer

Appendix B

Persona Type		Marketing		
1 **User/Customer Name**		2 **Job Title/Functional Role**		3 **Customer/User segment**
John Smith		Accountant		New to craft beer
4 **Photo**		5 **Key Demographic Details**		6 **Personality & Behavioral Characteristics**
		Age: 33 years **Gender:** Male **Family:** Single **Education:** Bachelors in Commerce **Location:** Seattle Washington, United States **Income:** $95,000 **Organizational details:** **Employment:** 8 years, 6 in current role.		Detail oriented during his workday. Tendency to work overtime to complete tasks. Enjoys social events with family and work friends. Drinks from a selection of craft beers brewed at local breweries, and has other alcoholic beverages at events. Enjoys reading during his free time. Is frugal with money and rarely splurges on items. Purchases occasionally from Amazon.
7 **Representative Quote**		8 **Pain Points**		9 **Drivers & Influencers**

Doesn't have enough free time brew craft beer. Doesn't have the knowledge and experience to have a home brewery, nor does he want to spend the time learning it.	Enjoys craft beer offered at local breweries. Is influenced by colleagues who have home breweries.

10 Purchase/User Experience Goals	11 Motivations	12 Perceived Obstacles
Hasn't produced his own craft beer, but has seen a number of home breweries of colleagues Occasionally purchases local craft beer.	Wants to be able to craft personalized beer without all of the equipment, time, and learning required with a home brewery	Doesn't easily trust online/mobile applications that require purchases Doesn't enjoy waiting long periods for a product; wants to be involved in the process

13 Relationship to Brand/Product	14 Technology Expertise	15 Preferred Channels / Devices / Platforms
Doesn't enjoy mainstream beer brands	Frequent user of mobile applications. Uses Excel, Word and Powerpoint regularly during work hours. Solid understanding of general website navigation, online purchasing, etc.	Uses Android mobile OS. Uses Windows desktop OS.

Appendix C

Build-A-Beer: Sketches for ideation

Type Base Flavour

Malting

- Our Process
- Grain-based
- Avocado malt
- best of its kind

Boiling Process

Scroll...

More steps??

Picture