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**User Experience Evaluation**

myCountdown Mobile App

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# Introduction

The home delivery of foodstuff is not a new concept. From the street pedalers of fresh veggies still found in some parts of the world, to the revival of milkmen services delivering fresh dairy on the daily, the convenience of domicile delivery often outweighs any associated costs. However, with a near worldwide lockdown looming or in place, this method of distribution is quickly shifting from the realm of convenience to the land of necessity.

In light of the potential uptake in users this paper will evaluate the user experience of myCoundown app from New Zealand grocer Countdown. First it explores the problem space of a virtual foodstuffs shopping environment. A “user-less” evaluation of the app follows using Neilsen’s usability heuristics. Finally, a proposal for a usability evaluation and accompanying questionnaire explore further steps that could be taken in the evaluation process.

## Part 1: The Problem

Under normal circumstances one would say that the countdown app should be geared towards the tech savvy millennial, and perhaps the late born genxer. However, current measures taken to limit the Covid-19 pandemic indicate that the old adage of designing to the lowest possible denominator is still valid. So what should the user experience goals be?

The first goal (metaphor) should be to make it analogous to the in-person shopping experience. Entering the supermarket does not require any sign-ins, formulary to fill, or clubs to join. One enters the store, picks a shopping cart or basket, and off one goes. Supermarkets have clearly defined sections for most categories of products and similar products are displayed side by side for easy inspection and comparison. Finally, help and suggestions are a store clerk away.

The second goal (interaction) should be to make it accessible to most users. Some of these things are simple design and function choices such as allowing the app to be used in both vertical and horizontal orientations or giving the user the choice of text size. (BOIA, 2019) Other accessibility considerations may require additional thought such as taking into account digital illiteracy. (Geerlings, 2019) Not everyone may know what the three stacked line, hamburger, icon means, for example.

As someone who has tried in vain to find a store clerk for help can attest, the in-store shopping experience is by no means perfect. Beside the obvious inconvenience of having to leave one’s home, there is also the hassles of long lines, unavailability of products, and keeping a tally of the cost. In short, the right grocery shopping app has the potential not just to match the convenience of in-store shopping but to improve upon it.

## Part 2: The Heuristic

### 1. Visibility of System Status

“The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.” (Nielsen, 1994)

The software displays a loading bar along the bottom of the splash screen when it first loads. However, it can be lost in the busy picture background. Once the application loads a bar across the bottom indicates the user current location within their system.

The software revolves around creating a shopping list however when an item is added to the list there is little indication of success. A number badge on the list icon would reinforce the system status.

### 2. Match Between System and Real World

“The system should speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.” (Nielsen, 1994)

This app’s functionality revolves around creating a groceries list instead of purchasing the items. The list is both clearly featured on the home screen and it's in the literal center of the navigation bar.

A shopping list is a familiar concept with groceries but not everyone creates lists when shopping. A shopping basket or trolley would be the more natural choice when shopping.

### 3. User Control and Freedom

“Users... will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Support undo and redo.” (Nielsen, 1994)

Adding items to the list is very simple. Removing an item, not so much. Once an item has been added to the list one must exit the current area, move to the list section, and swipe left on the item to remove it from the list.

Switching the “Add To List” button to a “Remove” button would simplify operations when clicking the button in error or finding a better price later.

### 4. Consistency and Standards

“Users should not have to wonder whether different words, situations, or actions mean the same thing.” (Nielsen, 1994)

The standard iconography of the application is consistent, uniting different presentations of data. The shopping list for example may be reached from the homepage banner containing the list icon and the picture of a hand holding a phone with a list on the screen.

However the use of both banners and icons for navigation can be quite confusing. Some of the features of the software are handled within the app while others open up an external web browser, which is frustrating.

### 5. Error Prevention

“...eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action.” (Nielsen, 1994)

If the best error handling is the one the user doesn’t have to deal with then this app must be doing something right. While using the application the only error had to do with loading the specials when the phone had a bad network connection.

An improved search function would reduce the times that users do not find an item because of misspelling. A predictive list of objects matching the criteria could reduce the “item not found” instances.

### 6. Recognition Rather Than Recall

“The user should not have to remember information from one part of the dialogue to another.” (Nielsen, 1994)

When it comes to the in-app parts of the application this program does a good job of “remembering” important information for the user. Unfortunately, a significant part of the app functionality is relegated to web page links.

If the user wants to purchase the items on the list online, they will need to login in to the system all over again. The same goes for tracking a pickup or even asking for help from the little AI chat bot, Olive.

### 7. Flexibility and Efficiency of Use

“...system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.” (Nielsen, 1994)

The list section of the app revealed a few significant features: selecting options by either tapping on the three dots or sliding left, and adding items to the list directly from the section.

However these flexible features are hampered by a general lack of continuity. If the user sends the list to online shopping with the icon on the top right corner, they will need to login there and manually add the items to the shopping cart, thus negating efficiency gains.

### 8. Aesthetic and Minimalist Design

“Communicate, don't decorate. Maintain a high signal to noise ratio.” (Nielsen, 1994)

myCoundown app offers a mix bag when it comes to aesthetic and minimalism. On the one hand colors are kept to a limited palate, and most information is presented without much adornment using helpful icons and descriptive text. However, the loading screen and few banner choices detract from the overall minimalist appeal.

Although half-displayed carousel items signify that additional items are available for viewing, they often feel like noise rather than signals. A simple arrow or three dots on the edge would have sufficed.

### 9. Help Users Recognize, Diagnose, Recover From Errors

“Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.” (Nielsen, 1994)

As described in heuristic 5, there was only one error message found during the evaluation process when attempting to load information onto the carousel with a bad internet connection. The popup message did not feature any kind of error code. Instead it informed the user that there had been an error on the company’s end and suggested the user try again later.

### 10. Help and Documentation

“...it may be necessary to provide help and documentation… such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.” (Nielsen, 1994)

There are a couple of help options for this app. The first one is an option under the hamburger symbol on the home screen. The second is a chatbot found as the last banner in the home screen.

Unfortunately, the heart of the app, the list, contains no options for help. Neither do the other three sections. That means that a user needing help will need to return to the home page and either dig through the hamburger icon or scroll to the bottom to find help. A simple overlay on each page would have been more helpful.

## Part 3: The Plan

### Foreword

There are two ways to evaluate myCountdown. The first would be to evaluate within its intended use according to the developers. In that case it would be evaluated as a grocery list making application that supplements the in-store experience. However a more helpful evaluation would be from the perspective of a consumer/user.

The expectation of consumers downloading a retailer’s one and only mobile app is that they will be able to use it to purchase the goods the store has to offer. This is especially true if the shop advertises delivery and in-store pick up. During the global health crisis of 2020 the need for such a feature is no longer just expected but needed. “Grocery apps have seen a surge in downloads as consumers shift their ordering online.” (Walk-Morris, 2020)

Even if the company offers a web/online shopping option that may not be enough in today’s market. According to the PEW Research Center 97% of Americans own a cell phone vs ¾ [75%] of American personal computers owners. (2019) That divide is even wider in developing markets where mobile technology has overcome the challenges of poor communications infrastructure. That fact combined with current pandemic make the need for a standalone shopping app an imperative.

### Goal

Evaluate if the myCoundown app in its current iteration meets the needs of delivery and in-store pickup shoppers ages 25 to 65 in New Zealand.

### Questions

1. Are users able to start shopping for goods from their local Countdown supermarket with a minimum effort?
   1. What is the getting started process like?
      1. How long does it take the user to feel comfortable using the app?
      2. What are the number of steps before an app can be used?
   2. What is the degree of difficulty in finding the infrastructure to make a purchase?
      1. How long does it take for the user to find a way to search for products?
      2. How long does it take the user to select their local store?
      3. How many steps are involved in transferring one’s chosen goods from the basket/list to purchase.
2. Are users able to accomplish the typical in-store shopping task on the mobile app?
   1. What is the degree of difficulty in finding a category of products?
      1. How long does it take a user to find all produced items on sale?
      2. How long does it take a user to find a particular brand of product?
   2. What is the process of comparing two similar products like?
      1. How long does it take to find two similar products?
      2. How many steps does it take to compare ingredients from two brands of the same product?
3. Are users able to get help when needed?
   1. What is it like to find help?
      1. How many steps are required to find help?
      2. How much time does the user spend getting help?
   2. How useful is the help provided?
      1. Can the user find a suggestion for a product similar to the one they are using?
      2. How many steps does it take the user to find a product suggested by help?
4. How accessible is the app to varying degrees of technical proficiency and abilities?
   1. What are the elements in the interface the users are unable to understand?
   2. What are the positions or gestures the user attempts to use?
   3. Do physical reactions on the part of the user hint at challenges in accessibility?

### Equipment/Environment

Location:

1. Lab
   1. At least two seperate but adjoining rooms.
   2. Plenty of electrical outlets.
   3. A network connection.
   4. At least one “informally/relaxed” decorated room.

Equipment:

1. Cell Phone -
   1. myCountdown app
   2. App to record user’s interaction
2. Computer -
   1. Webcam or Streaming Camera-
      1. record users hands while using the device.
      2. Must be independent from the computer for positioning and to avoid unnecessary distractions.
      3. Placed as to minimize intrusion.
   2. Recording software -
      1. Record the actions taken for later data analysis.
   3. Streaming/Remote Control
      1. The will allow the examiner to be distanced from the test subject. Preferably in a separate room to reduce the Hawthorne effect.
3. Comfortable Desk and Chair - for test subject.
4. Handout with written instructions.
   1. Clear and concise instructions.
   2. Diagrams and illustrations (when needed).
5. Consent and Privacy forms:
   1. Consent to record
      1. What will be recorded?
      2. Who will be able to see the recording?
      3. How long will the recording be kept?
   2. Privacy Notice and Information:
      1. Explanation of privacy protection methods.
      2. Explanation of privacy rights.

Assistants (2):

1. Tech savvy helper -
   1. Setup and monitor equipment
   2. On site tech support
   3. Reset/Clear device in between subjects.
2. Friendly helper - (proctor)
   1. Provide instructions
   2. Support test subject during the evaluation

### Participants

Grocery Shoppers (8-10):

1. Primary Shoppers-
   1. Purchase a bulk amount of goods for a household.
   2. Shop at least one time a week.
2. Ages - 25 to 65
3. Own a smartphone.
4. Have made one online purchase (of any product) in the past year.

Selection Procedures:

1. Provide a three question pre-qualifying questionnaire/survey to as many potential subjects as possible either by mail/email or, preferably in person by volunteers in front of a grocery store. Explain that those selected will receive a $25 supermarket voucher.
2. Select a group of no-less than 8 qualifying shoppers
3. If the sample size is sufficiently large, separate qualifiers into age groups and use a random selector to choose representatives from each age group.

### Tasks

Prerequisites:

1. One burner email per participant with easy access.
2. One mobile phone with necessary apps and cleared from previous participant’s data.
3. Photocopied handout with clear instructions for each task including all pertinent information for that particular participant.

Task 1:

Provide the participant with all the information needed to sign-in to the app and create an account. Ask the participant to load the app and follow the instructions to start using the app. Ask them to contact the study proctor when they have added one item to their shopping cart/list.

Task 2:

Ask the participant to complete the following tasks and notify the proctor after each task is completed before proceeding to the next.

1. Find all items that are on sale.
2. Find Turks Free Range Frankfurters 6 pk
3. Find 2 brands of margarine
4. Determine if one of them contains Soy Lecithin

Task 3:

Ask the participant to find an alternative to Rubbing Alcohol using the apps help function. Explain that it is a liquid used for disinfecting minor cuts and abrasions on people. Make sure to specify that they must use the help menu even if they know of an alternative off hand.

### Test Procedures

Test Session (estimated 1.5 hours)

1. Introduction (5 minutes) - yourself
   1. Introduce Self
   2. Introduce Proctor
2. Instruction (10 minutes) - proctor
   1. Guide the subject to the table and make sure they are comfortable
   2. Introduce the phone and basic functionality
   3. Explain the area where to keep their hands in order to capture what they are doing.
3. Task 1 (~15 minutes) - proctor
   1. Give the first task and accompanying information.
   2. Inform that proctor will step away but can be summoned with a raised hand if the subject needs help or has concluded the task.
4. Task 2 (~20 minutes) - proctor
   1. Provide the list of tasks.
   2. Inform that proctor will step away but can be summoned with a raised hand if the subject needs help or has concluded the task.
   3. Notify the subject that they should signal they have completed an individual task on the list with a thumbs up before proceeding to the next.
5. Task 3 (~20 minutes) - proctor
   1. Inquire about the subject's comfort level and offer a break if necessary.
   2. Explain what task 3 emphasising the need to use the help features of the app.
   3. Let them know that if at any point they become frustrated with the process, they may inform the proctor and conclude the task even if it’s not completed.
6. Conclusion- yourself
   1. Thank the participant for their time.
   2. Volunteer to answer any questions.
   3. Set up a time for the subject to pick up their incentive and have a 30 minute debriefing session.

### Data To Be Collected

#### Application Usage Recording

An application such a Matomo\* can be used to record the user actions on the app. Another option is to use the built-in screen recording functionality on Samsung and LG phones using Android 10 or greater. (Knight, 2020)

\*(<https://matomo.org/blog/2012/04/how-to-use-piwik-to-track-mobile-apps-activity-clicks-phones-errors-etc/>)

#### Video Recording

In each session the hands of the subject will be recorded as they use the app in an effort to record possible physical cues. See Question 4 in this section.

#### Questionnaire

A quick survey will be used to recruit and screen possible participants. Not only will it help screen subjects but answers can then be referenced to the data gathered by other methods to draw possible correlations. See Questionnaires section.

#### Debriefing

This oral questionnaire will be administered after completion of the evaluation in an effort to better understand the data collected and catch any information not apparent in the video and application recordings.

### Data Analysis Plan

1. Quantitative Analysis
   1. Video and app recordings will be reviewed for each participant.
   2. Areas pertaining to task 1, 2, 3 will be flagged.
   3. Steps and times for each task will be recorded and annotated.
   4. Data obtained will be compared with other subjects both within age groups and across all subjects to identify recurring patterns and critical incidents.
2. Qualitative Analysis
   1. Video and app recordings for each participant will be studied.
   2. Any behavior that may indicate problems with understanding or signs of inaccessibility will be flagged for later study or clarification with the subject.
   3. Debriefing questions will be used to clarify and expand the information already gathered with the evaluation.

## Part 4: The Questionnaires

### Pre-Questionnaire

1. How often do you shop for groceries? (circle one)

Multiple Times A Week • Once a week • Fortnightly • Monthly • Less Often

2. How many items do you purchase on your larger trips to the supermarket? (place an X in the scale)

Few items Lots of Items

10 or less ←--------------------------------------------------------------------------------------------->30 or more

3. What is your age group? (circle one)

Under 25 • 25 - 35 • 36 - 45 • 46 - 55 • 56 - 65 • Over 65

4. Do you own a smartphone?(circle one) YES NO

5. Have you made any online purchase (of any kind) in the last 12 months?(circle one)

YES NO

### Post-Questionnaire

These questions are ONLY a general guideline to help conduct a debriefing interview.

1. When you were first introduced to the app, what did you expect it to do?

2. How did you feel about the setup process? That is to say the steps you had to take before adding an item to your list.

3. If you could improve one thing about the setup process what would it be?

4. Talk to me about the process of finding a product?

5. Can you describe the experience of comparing products in the app to me?

6. If there was something that you could change in the process of asking for help, what would it be?

7. Are there any pain points you would like to share regarding the general usage of the software?

8. How would you compare the experience of shopping with the app to your weekly experiences of shopping at a Countdown store?

9. Are there any observations you made that you would like to share with me at this moment?

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