

CHECKOUT



CONTENTS

Introduction

We are exploring the powerful concepts of personas, mental models, and storyboarding to analyze and develop a contextual understanding of how users behave, think, and interact with self-checkout registers in local convenience stores.

1. INTERVIEWS AND DATA

Real world data collection used to develop personas.



2. DEVELOPMENT OF MENTAL MODELS

How users think the interface works and functions.



3. PERSONAS/EMPATHY MAPS

Archetypal characters that represent users observed and interviewed.



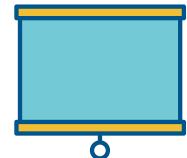
4. ETHICAL PERSONA

How can a persona be unethically manipulated? Example not based on the interface being analyzed.



5. STORYBOARD

Visual tool to explore how a user might interact with the interface to accomplish a goal.



INTERVIEWS AND DATA

General User Observations:

- There appear to be two clear customer segments: users just checking out 1-2 of the same items and those checking a more varied list of items, ranging from 5-10 items.
- Users appear to opt for the self-checkout interface over traditional checkout if they have a limited number of items.
- Many users failed to bag their items before moving on to other items and were not allowed to proceed by the system.
- Some users waiting for the traditional cashier observed others using the interface before deciding to use it themselves.
- A few users opted out from using plastic bags and either put their items in personal bags or just carried them out.

Population Sample Concerns:

We believe that our sample population was not truly representative of the population that utilizes this interface. We mostly only encountered and observed college students utilize the self-checkout due to the proximity of the store to a university campus. However, from personal experience we know a greater population size utilizes self-checkout machines.



INTERVIEW QUESTIONS:



Q1: Why did you opt to use the self-checkout interface over traditional checkout?

User1: I wanted a **quick checkout process** and only had a few items to checkout.

User2: I **didn't want to interact** with the cashier and wanted to do everything myself.

Q2: Overall, how would you describe your experience?

User1: I was satisfied with the **speed and efficiency** of checkout however I was frustrated with the interface's **flexibility**.

User2: Efficient and quick. I didn't have to hassle with the interface, and I don't even read the prompts on the interface since I've mostly **memorized the checkout process**.

Q3: How intuitive was the interface from a high-level perspective?

User1: The process was **very intuitive**, though I initially had trouble figuring out which way to scan the barcode of an item on the scanner.

User2: It was very intuitive, and I found the colors of the screen buttons add helpful **visual cues** as to what to press and when.

Q4: What were the biggest strengths of the interface?

User1: The interface's **audio and visual step-by-step guidance** at the various checkout phases was really helpful along with its ability to handle key edge cases (e.g., 18+ medicinal products).

User2: The checkout screen has an animation to help with scanning items and other procedures if I was ever confused during my checkout process.

Q5: What were the interface's key weaknesses?

User1: There was a **lack of flexibility and options** for different kinds of checkout preferences (e.g., all-or-non bagging, no digital receipt option, cashless payments only).

User2: The checkout **system takes too long** to display a scanned item so I can't scan my items as quickly as I want since I have to wait for the item to register on the screen.

INTERFACE SKETCH:

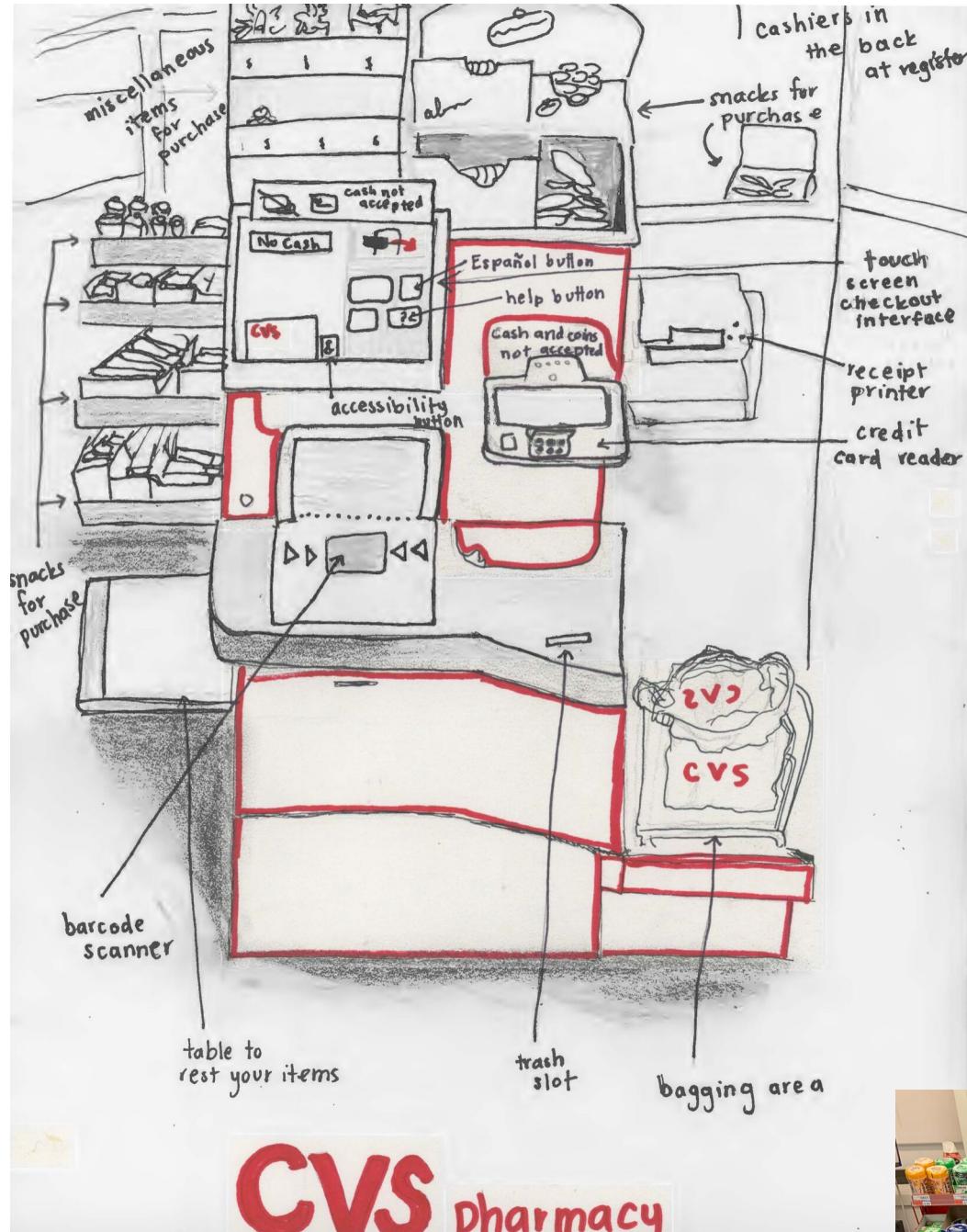
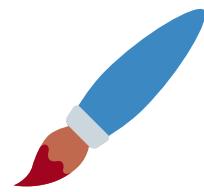


Figure 1: Sketch of CVS self-checkout machines with key aspects labeled.



Description:

The CVS self-checkout machine gives customers an alternative way of purchasing their items without needing to be helped by an employee. The machine features a small table to place items, a barcode scanner, and a touch screen interface where users can see all their purchased items. There is a bagging area where customers are required to put their items after scanning. No cash is accepted, so there is a credit card reader to the right of the touch screen interface. To the right of that is the receipt printer, and below the credit card reader, is a small slot for trash. Surrounding this machine are an assortment of snacks and miscellaneous items for purchase.



Figure 2: Image of CVS self-checkout machine.

MENTAL MODELS:



First Mental Model:

Checkout interface is interpreted to work in an assembly line like fashion with clearly segmented aspects:

- **Scanning:** User doesn't pay attention to the "purchased item" screen as long as they hear the audible "beep" sound they just continue scanning items (mostly forget about the bottom scanning option).
- **Bagging:** User bags each scanned item individual after scanning.
- **Paying:** Instinctively continues to credit card keypad and inserts payment method (user often forgets they need to select a payment option on main screen).

Second Mental Model:

User believes all checkout processes are centered around the main interface screen.

- User believes they must first read the interface screen for instructions or to press a button indicating they will start checkout.
- Scans each item individually and continue looking at the interface screen to ensure their item was scanned properly before continuing to another item.
- Often encounter confusion during payment since they don't notice the credit card keypad on the right since they are fully focused on the main screen.



Thinks:

- "I wish there were digital receipt options."

- "Why do I have to bag everything?"

- Frustrated from a lack of options.

- "How can I get out of here as quickly as possible?"

Feels:

- Stressed about upcoming tests and assignments.

Says:

- "Why is there an error with my card?"

- "Is there any way I can only bag some of my items?"

Jack Simons



Does:

- Scans and bags items quickly, before audio guidance

Description:

Jack is a college student highly comfortable with technology. He values efficiency, flexibility, and environmental sustainability. Jack mostly keeps to himself, is self-reliant and pressed for time during school days.

- Overlooks intermediary steps at times in haste.

Thinks:

Second Persona

Feels:

- "I wish I could pay with cash"

- "How do I apply my rewards to this purchase?"

- Rushed and pressured by work.

- Feels she is scanning items incorrectly.

- "Do I need to bag my items before scanning another?"

- Overwhelmed by work and meetings.



Says:

- "How can I change my payment method?"

Description:

Mary is an employee at the local university. She is currently on her break and needs some last-minute office supplies before her upcoming meeting.

Does:

- Observes other users before using self-checkout.

- "I accidentally scanned an item twice how do I remove it?"

- Keeps checking screen to make sure she is scanning each item correctly.

Thinks:

- "I hope I get enough likes on this post."

- "Does everyone really have such great lives?"

Ethical Persona

Feels:

- Self-conscious about what she posts.

- "How do I check how many followers I have?"

- Feels pressured to fit in.

- Feels her appearance on social media dictates how people perceive her.

Says:

- "I don't care how many views/likes I get."

- "I don't pay that much attention to my 'social media app'"



Oliva Johnson

Does:

- Explores and views other people's profiles often.

Description:

Oliva is a high school freshman that has to deal with the stresses of school and fitting in a new environment. Oliva is extroverted and really values her friends and the impression she makes on others.

- Pays extensive attention to the likes/comments section.

Persona Explanations:



Jack Simons:

Problems with Interface:

Jack struggles with the rigidity of the technology, wishing it could cater to his varying checkout preferences. He also often overlooks intermediary steps as he moves quickly through the process.

Why/Who she represents:

Jack represents younger college students, who typically have used the self-checkout multiple times and value its speed of use.



Mary Jane:

Problems with Interface:

Mary mainly struggles with using new technological appliances. She often scans items incorrectly or doesn't know how to navigate from scanning to payment. Mary also often asks a cashier for help when stuck/uncertain of how to proceed at a self-checkout station.

Why/Who she represents:

Mary represents the older generation of users we observed and interviewed who have only used the self-checkout once or never before.

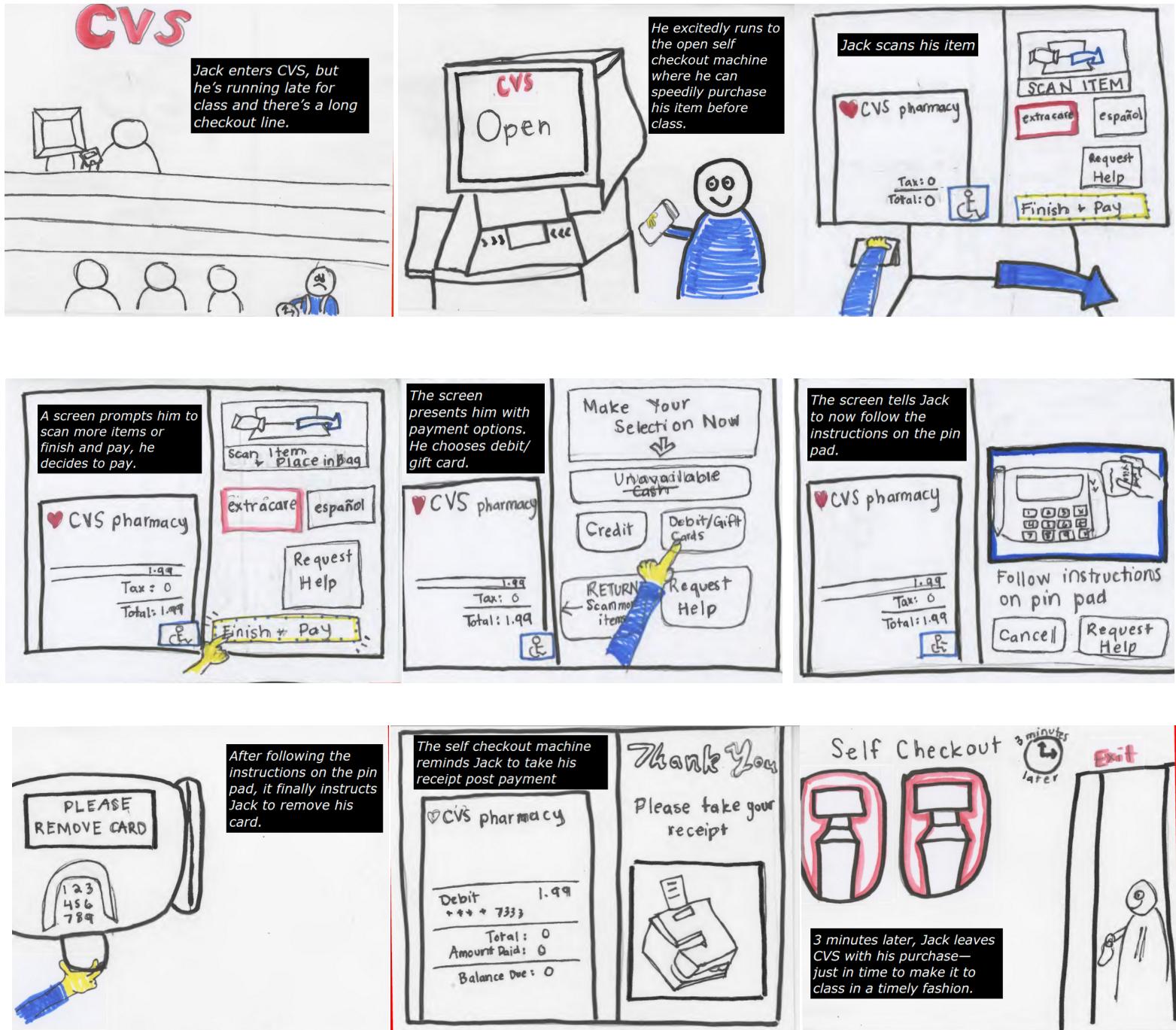
Oliva Johnson (Ethical):

How can this characteristic be manipulated into unethical practices?

Developers could manipulate Olivia's desire to be accepted and liked by her friends and notify her of a popular friend's posts or of instances when friends view her profile. Doing so would serve to reinforce unhealthy aspects of Olivia's persona by drawing a contrast between her social status and those of her friends. As such, they would be exploiting her social insecurities to increase usage of their app.



STORYBOARD:



Jack Simons Journey and Persona Goal:

The Jack Simons persona was developed from a collection of observations and interviews of the typical college students we observed use the self-checkout registers. For this reason, Jack's main objective in the scenario depicted in the storyboard is to have a seamlessly quick and efficient process to purchase his items. In the storyboard, we depict the assembly-like mental model a user like Jack tends to have and show how he applies the scanning, bagging, and payment stages of the model to achieve his goal.