CS410 Team Bronze
Fall 2025
Final Feasibility

Spoiler Alert
‘No Surprises at the Table’

Table of Contents

Team Bios.....3

Background.....4 - 6

The Problem.....7

Who is Affected.....8

Problem Characteristics.....9

Current Process Flow.....10

Solution Statement.....11

Solution Characteristics.....12

Solution Process Flow.....13

What will it do?.....14

What it doesn't do?.....15

Competition Matrix.....16

Major Functional Components.....17

Development Tools.....18

User Risks.....19

Technical Risks.....20

Legal Risks.....21

References.....22

Meet the Team!

Parker Davis
Project Lead/Database

Shan Ibanez
Webmaster

Gaby Macatangay
Frontend Developer

Parker Mullenax
Front/backend Developer

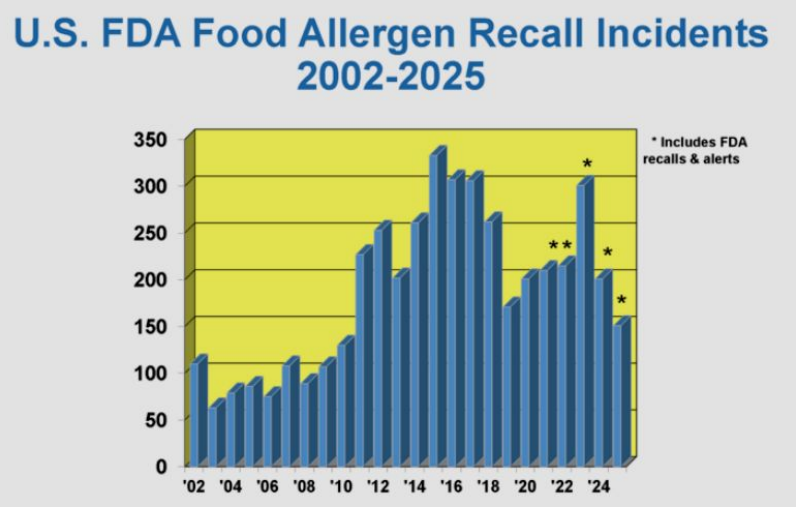
Jacqueline Simmons
Frontend Developer

Christian Stevens
Backend Developer

Mark Stoegbauer
Webmaster

FSIS Issues Public Health Alert For Ready-To-Eat Meals Containing Pasta That May Be Contaminated with Listeria

Food recalls happen all around us...



University of Nebraska-Lincoln - USA: FDA and USDA Food Recalls

- Foodborne Illnesses such as Listeria and Salmonella. Allergen Contamination. Foreign Materials, including heavy metals.
- These are all dangerous, especially for the most vulnerable among us.
- These can all be life threatening for the elderly, pregnant, allergic, and immunocompromised.

And they're still happening.

- The FDA has reported almost 300 recalls in the last year.
- This comes out to millions of pounds of food.
- Almost 60 million pounds of corn dogs alone were recalled late this September.

Listeria Outbreak Linked to Prepared Pasta Meals

58 million pounds of corn dogs recalled over possible wood in the batter

nbcnews.com | 1 day ago

Jimmy Dean and State Fair are included in the recalled brand list.

5 Injured, according to the USDA

FAST FACTS

- **Cases**: 20 (3 new)
- **Hospitalizations**: 19 (3 new)
- **Deaths**: 4 (1 new)
- **States**: 15 (2 new)

CDC Website

Yet, many don’t hear about recalls.

TASTE OF HOME. GETTY IMAGES

The average person does not see many FDA or CDC reports.

According to Dr. William Hallman during the 2025 Food Safety Summit:

- 13% of Americans visit government sites for recall information.
- Only 3% are subscribed for automatic reports on recalls.

Two potential issues are ignorance and incentive. Some people just don’t think they could get sick from the chance of encountering a recalled good, or just don’t think about it.

This can even affect the companies terribly. With some infected food lawsuits involving millions of dollars.

Such as when Conagra paid over $40 million in civil lawsuits over salmonella in peanut butter.

The Problem

Food recalls happen all the time, however, there isn't an adequate reporting system overall. It is vital that everybody receives topical recall reports promptly, yet many do not. This is a major safety concern for consumers, as companies don't take proper precautions.

Despite official resources being a thing, their own notifications are restricted to email, not an optimal form in the age of the smartphone. Existing apps also fall short, not being personalized or appealing enough to the average user to be noteworthy.

Who is Affected

Users

Everyday consumers:

Anyone who buys, cooks, or consumes food can benefit.

Health-conscious individuals:

People with dietary restrictions, chronic illnesses, or vulnerable immune systems.

Families and caregivers:

They need immediate alerts about recalls to protect their children, elderly, or others at higher risk.

Stakeholders

Farmers: Faster reporting helps them protect their reputation and respond quickly.

Stores: Timely alerts allow them to pull unsafe products from shelves before customers are harmed.

Restaurants: Food service providers who could unknowingly serve recalled items.

Regulatory agencies: Improves public safety by ensuring information reaches more people faster

Problem Characteristics

- Cause
- Effect

Awareness Gap:

- Food recalls announced by the FDA/USDA spread slowly and unevenly.
- Consumers aren't aware of unsafe conditions that may cause harm

Customization Gap:

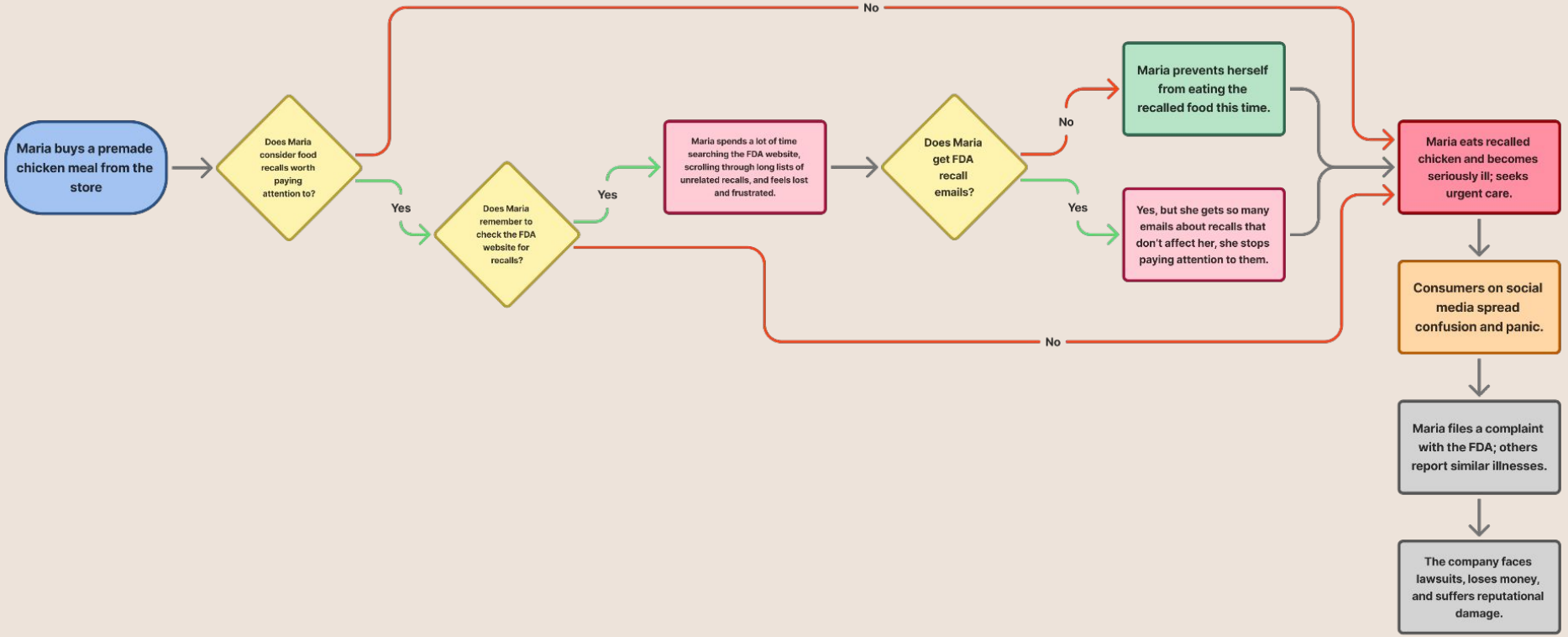
- Other apps do not allow you to customize what medium you are notified by, rather only having one method of notification
- User experience suffers at the cost of mediocre interfaces

Engagement Gap:

- Many consumers don't view recalls as something that requires urgent attention
- This causes consumers to be uninformed for prolonged periods of time, causing risk.

Urgency Gap:

- There are no direct, reliable channels to consistently reach users with information regarding recalls
- Misinforms people with allergies to be put at risk



Current Process Flow

Solution Statement

Spoiler Alert: An innovative web & mobile application that delivers personalized, immediate, and trustworthy food recall alerts.

- ⏱️**Speed & Urgency** → Instant notifications (text, push, email).
- 📝**Clarity** → Simple, consumer-friendly language for critical information.
- 🎯**Personalization** → Allergy filters, barcode/receipt scanning, custom channels.
- 🔒**Trust** → Direct FDA/USDA data in one reliable platform.

Result: Families, caregivers, and vulnerable individuals stay safe — no surprises at the table.

Solution Characteristics

Centralized Recall Awareness

A single platform where recall information is collected and delivered consistently so consumers don't miss important updates on recalled products. Information is conveyed in a clear and concise manner to make recall information easy for consumers to understand.

Personalized Notifications

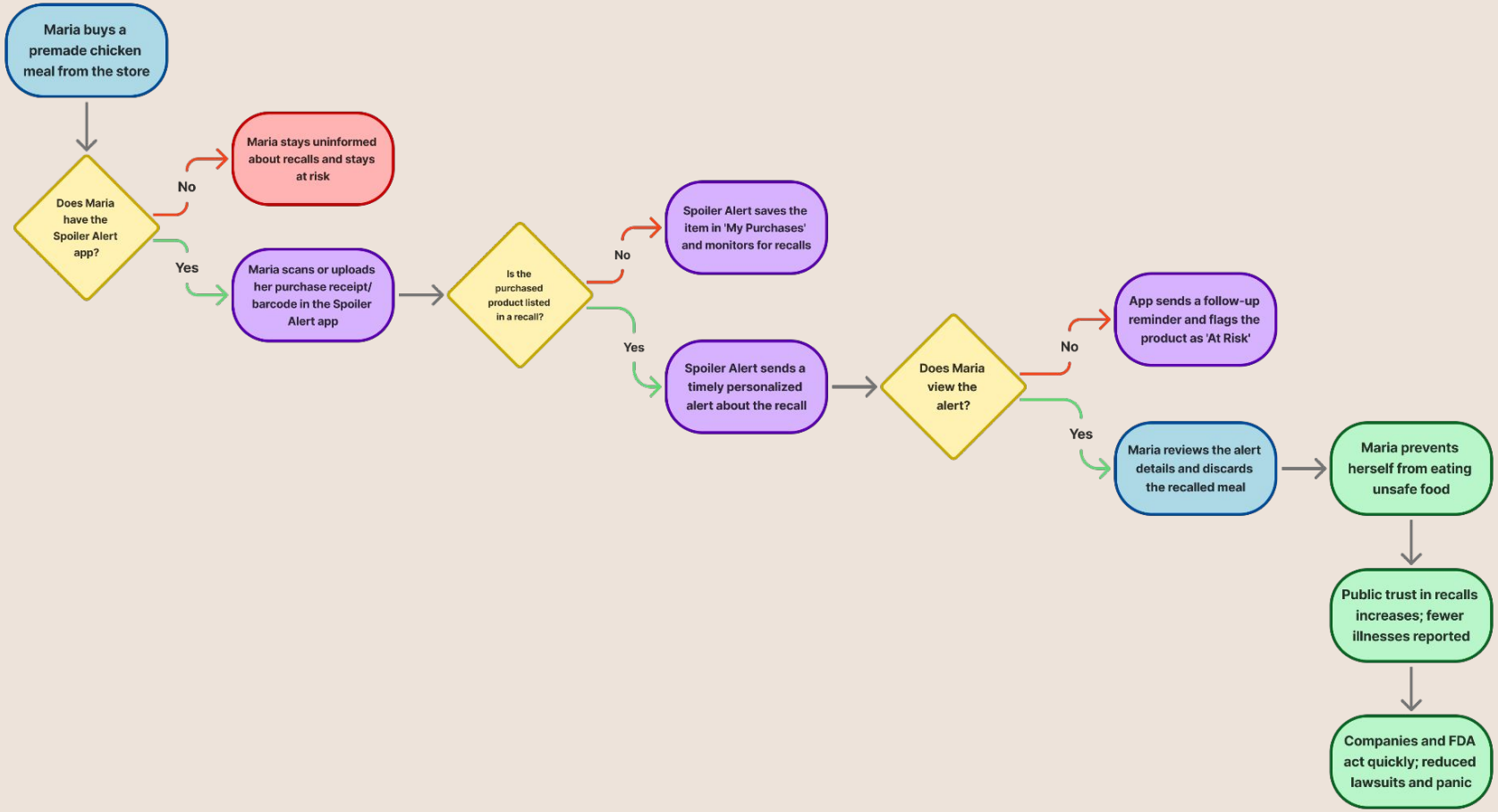
Users are given flexible options on how they wish to be notified of recalls. The consumer has the customizability to make their choice of app notifications, text messages, or emails to fit best into their daily life.

Consumer Motivation

Notifications highlight the immediate importance of recalls. Users will be able to get relevant recall information based on their individual preferences, keeping them motivated to stay informed.

Immediate and Reliable Alerts

The use of dependable and customizable delivery of notifications ensures recall information reach users without delay. Users that have specific allergies or conditions can have alerts marked as critical.



Solution Process Flow

What will it do?

- Provide the user with **notifications** on recalls for **food, home goods, cosmetics, and pharmaceuticals**
- Allow the user to choose the form of notifications they get such as **text message, email, or in-app notifications**
- Allow the user to **scan barcodes on specific products** and save it to their inventory in order to be later notified for future recalls
- Allow the user to **scan receipts** from recent purchases to add all items from the receipt to their inventory in order to be notified for future recalls
- Allow the user to add specific **allergies** in order to get future notifications on recalls involving cross contamination or previously unlisted allergens in products
- Provide up-to-date **FDA notifications** on recalls

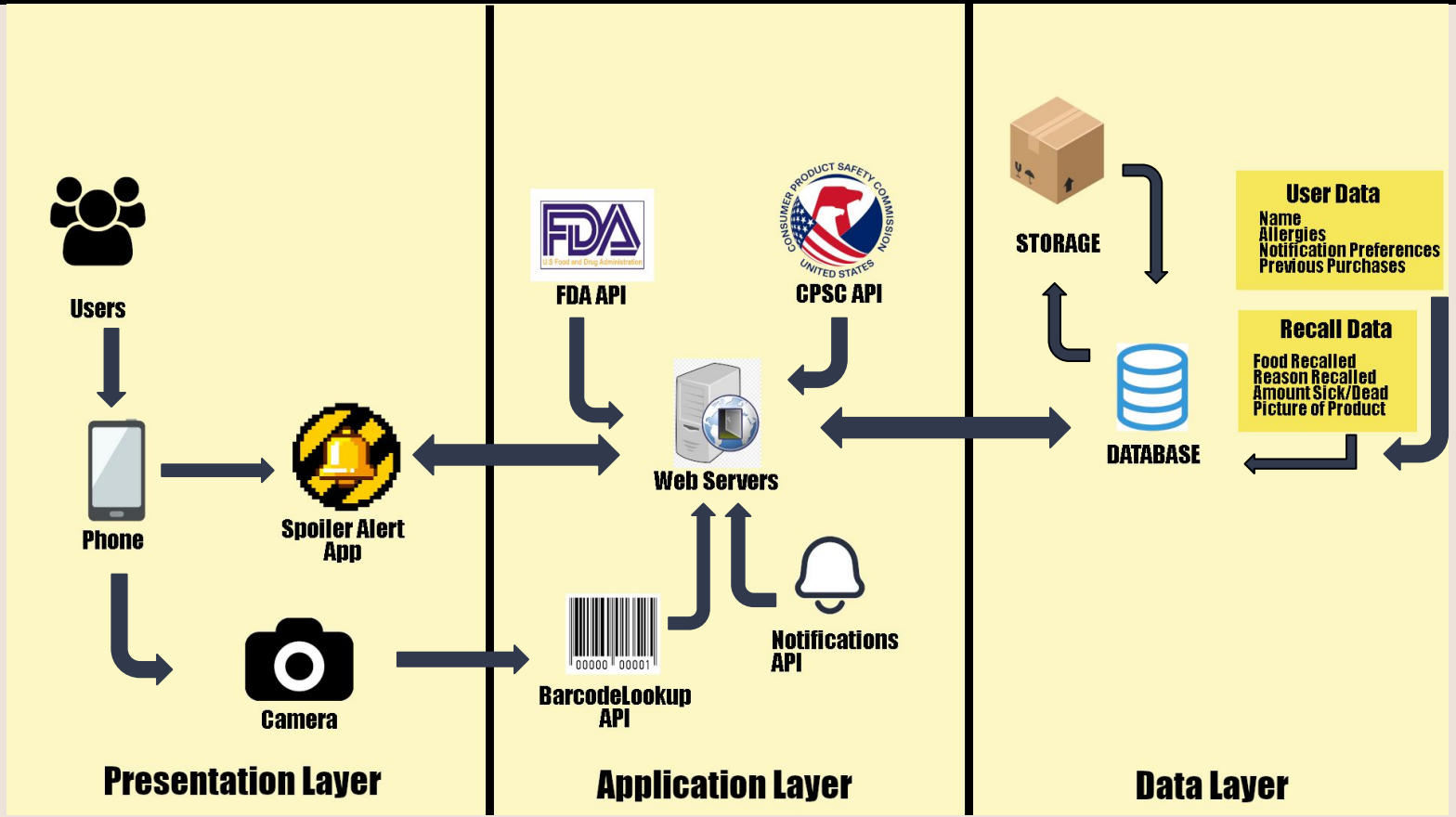
What it doesn't do:

- The app will not **crowdsource information** on recalls in any way.
- Provide information for recent recalls on **automobile or watercraft** products
- Allow the user to take a picture of a product **outside of its container** to find recall information on it
- Guarantee **legal/medical advice** or substitute official government recall sources
- Track recalls **outside the U.S.**
- Act as a **universal scanner** for every product type on the market
- **Automatically refund or replace** recalled products
- Detect **counterfeit goods** or **verify authenticity** of products
- Work without **internet access**

Competition Matrix

	Spoiler Alert	Food Recalls & Alerts	Target	USA Recalls
Food Recall Reports	✅	✅	✅	✅
User-Friendly Interface	✅	✅	⚠️ Too complicated	✅
Notification Customization	✅ Text, Email, Push-notifications	⚠️ Push-notifications	❌	⚠️ Email, Push-notifications
Record Sick/Dead	✅	✅	❌	❌
Subscription for Premium Features	✅	✅	❌	✅
Scan Receipt	✅	❌	❌	❌
Barcode Scanner	✅	❌		✅
Customized Allergens Alerts	✅	❌	❌	❌

Major Functional Components



Development Tools

Communication	Discord
Version Control	Git / GitHub
IDE	VSCode
Collaboration	ClickUp
Front End	Swift
Back End	Python (Flask Library)

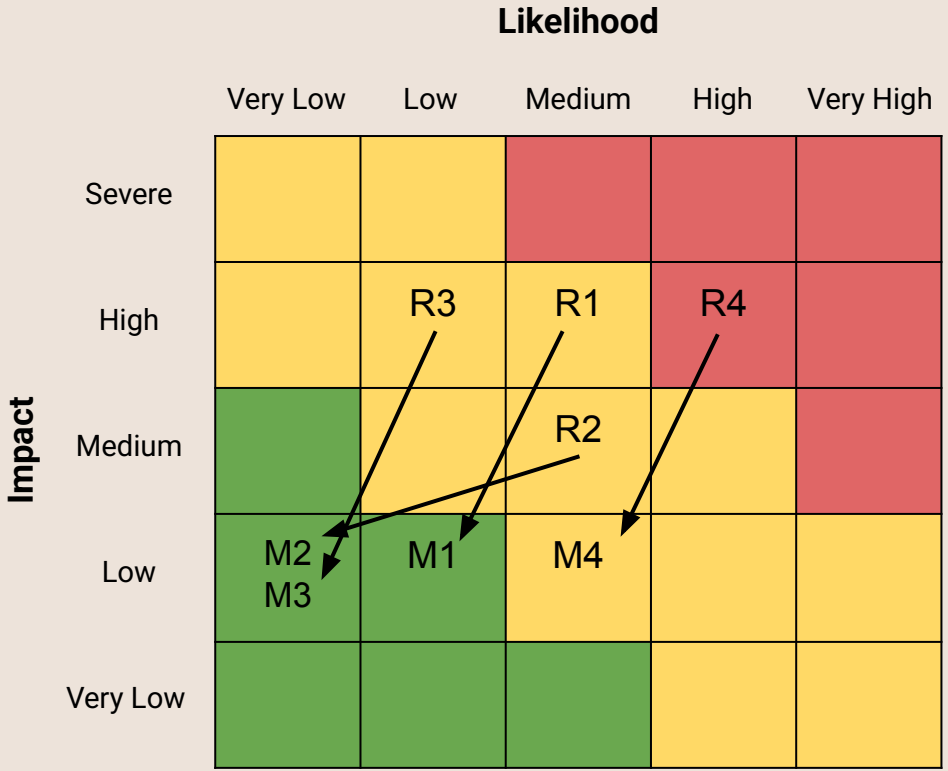
User Risks

Risk Factors:

R1: Users may suffer from alert fatigue, from recalls concerning products not relevant to the user.
R2: Users may forget to turn push notifications on, causing a delay in information.
R3: Regional differences may cause misinformation.
R4: Users may not want to share their personal medical information with the app.

Mitigations:

M1: Spoiler Alert customizes reports, so the user only gets notified of the reports that are relevant to them.
M2: Spoiler Alert will alert users that their notifications are off whenever they open the app.
M3: Spoiler Alert will ensure that the regions affected will be one of the first things users see when looking at a recall.
M4: Spoiler Alert will ensure users that the app will encrypt and responsibly store the data. Users may also continue to use the app without entering this data at all.



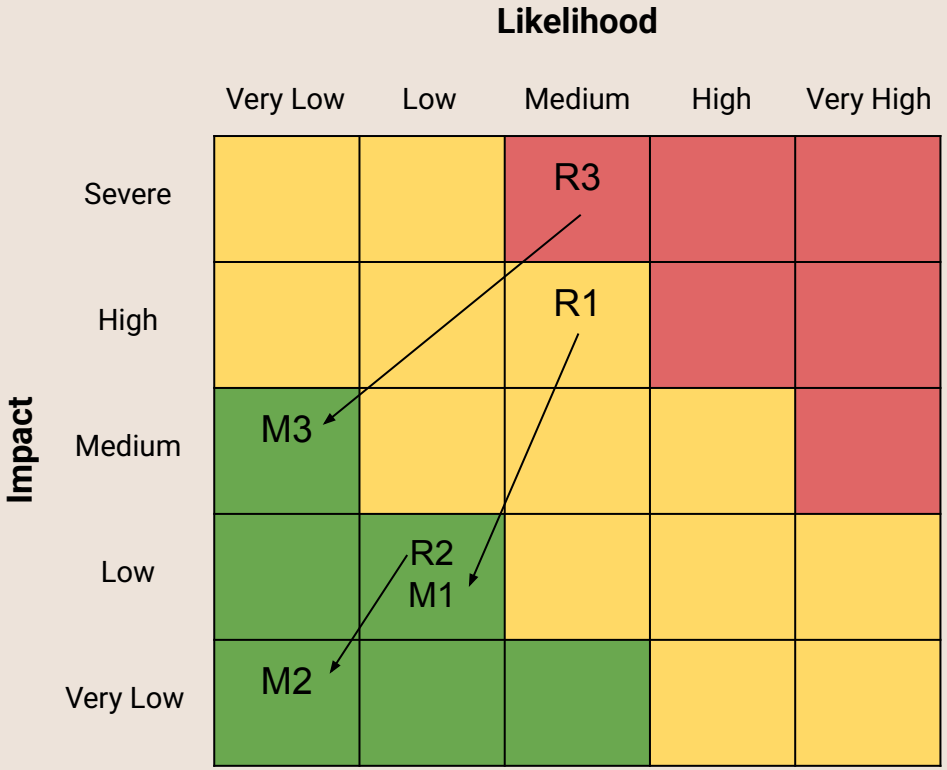
Technical Risks

Risk Factors:

R1: Certain stores may have unique product code formats on their receipts that the app will have trouble looking up.
R2: Low user camera quality can result in unreadable scanning
R3: APIs may have downtime or contain broken data, slowing down or stopping Spoiler Alert's ability to report.

Mitigations:

M1: Spoiler Alert will work with the bigger stores to make those product codes searchable for recall logging.
M2: In the case camera quality makes the receipt unreadable, the user can manually input the product code.
M3: If APIs for any reason are unreadable, the servers will attempt to read from the API a few more times. If this still fails, sources will be manually reviewed by staff until the API works once more.



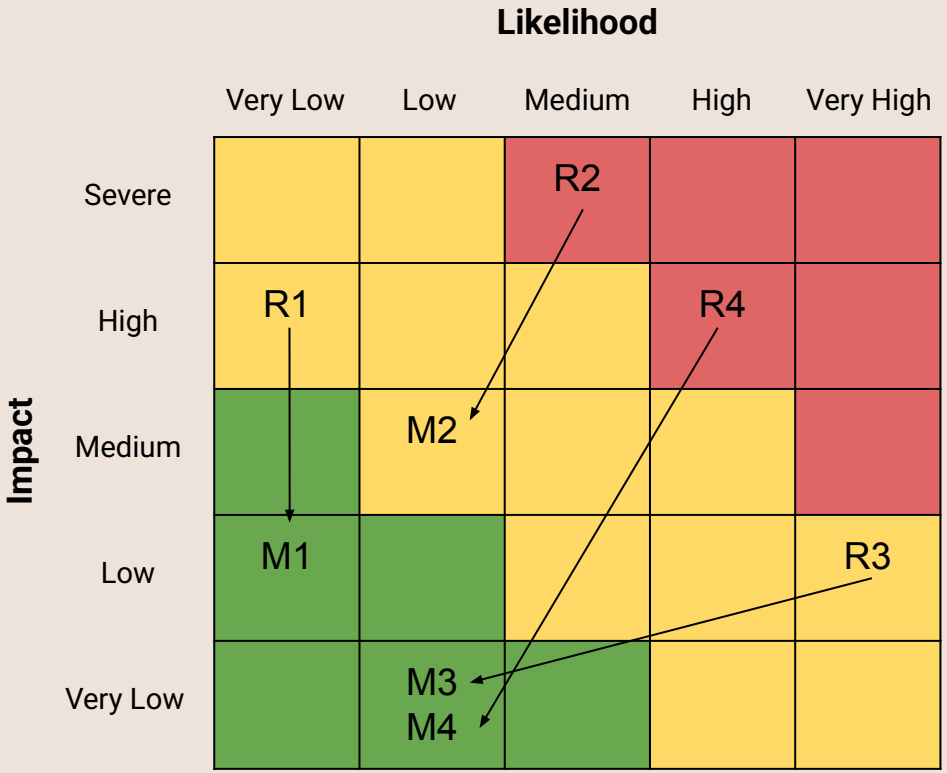
Legal/Security Risks

Risk Factors:

R1: Personal information, such as medical and payment information, can be subject to data leaks.
R2: Relying on companies relaying information to Spoiler Alert may cause misinformation and conflict with FDA announcements.
R3: Companies may try to litigate Spoiler Alert for reports that damage their image.
R4: The app may collect sensitive personal and medical information without consent.

Mitigations:

M1: SpoilerAlert uses up-to-date security protocol to assure against data attacks.
M2: Spoiler Alert will cite sources and allow the user to authenticate the information they are receiving is true.
M3: Companies should be held accountable for harm regardless of litigation.
M4: App informs and gets users consent with terms of service and privacy policy agreement upon account creation.



References

Food Safety and Inspection Service. Summary of Recall and PHA Cases in Calendar Year 2023 | Food Safety and Inspection Service. (2024, February 28). https://www.fsis.usda.gov/food-safety/recalls-public-health-alerts/annual-recall-summaries/summary-recall-and-pha-cases-0

Schildhouse, J. (2024, December 20). *Why are there so many food recalls right now?* Taste of Home. https://www.tasteofhome.com/article/why-are-there-so-many-food-recalls-right-now/

Centers for Disease Control and Prevention. (n.d.). Listeria outbreak linked to prepared pasta meals. Centers for Disease Control and Prevention. https://www.cdc.gov/listeria/outbreaks/chicken-fettuccine-alfredo-06-25/index.html

Recall Modernization Initiatives with the Consumer in Mind. 2025 Food Safety Summit, Dr. William Hallman. https://www.food-safety.com/ext/resources/FSS_Event/Presentations/2025/S7---Combined-Slides.pdf

Conagra Subsidiary Sentenced in Connection with Outbreak of Salmonella Poisoning Related to Peanut Butter. US Justice Department. https://www.justice.gov/archives/opa/pr/conagra-subsidiary-sentenced-connection-outbreak-salmonella-poisoning-related-peanut-butter