Food Watch

Pool 1 Design Process Evidence

July 7, 2015

IPT Associates, LLC
700 Technology Park Drive Suite 204 • Billerica, MA 01821
A Veteran Owned Small Business (VOSB)
www.iptassociates.com

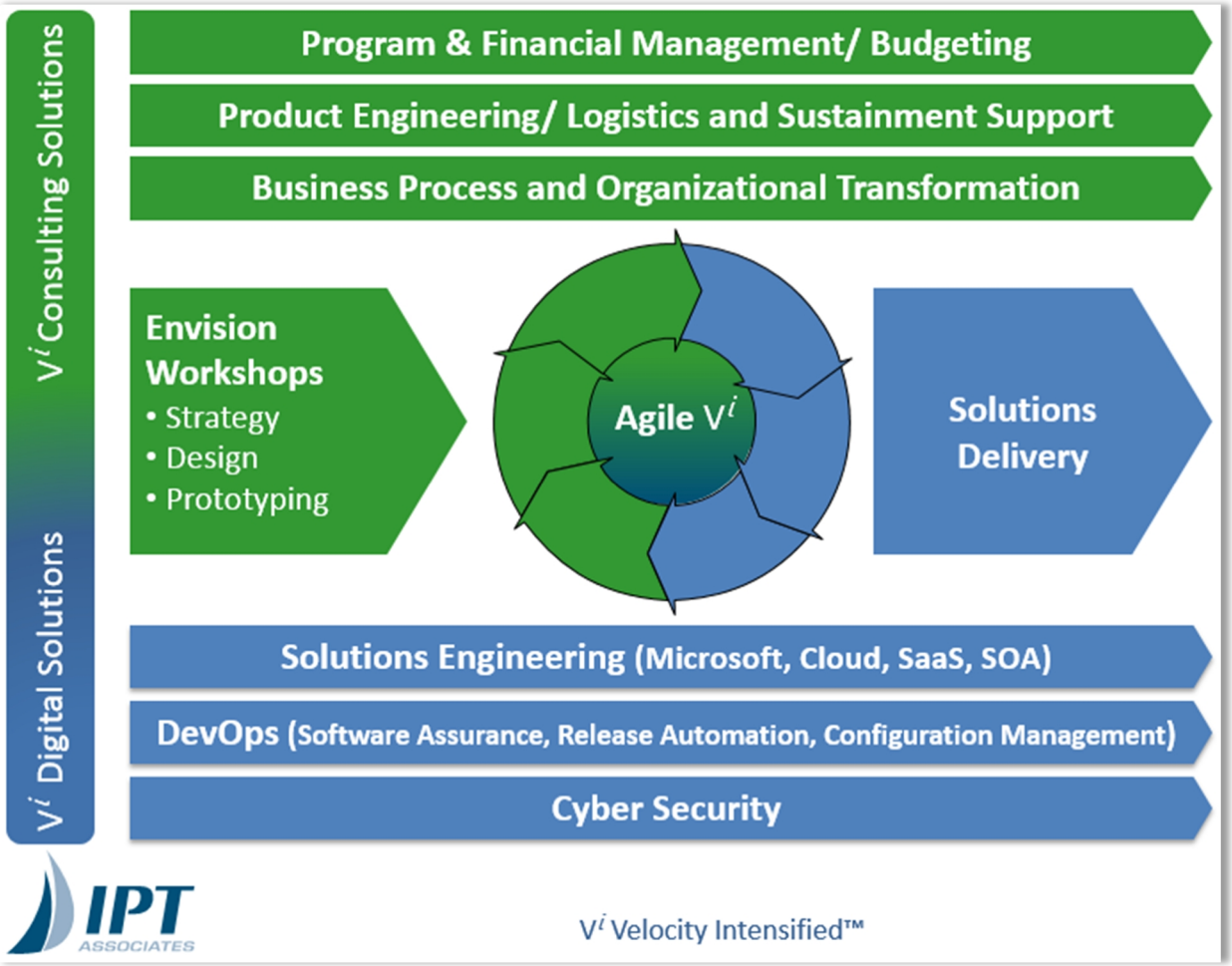
Table of Contents

1. Food Watch Process Evidence (Pool 1)

About this Document

This document has been prepared to describe the process IPT Associates, LLC (IPT) used for the design and development of the Food Watch 1.0 prototype. As required in the General Services Administration (GSA) Agile Delivery Services BPA proposal (RFQ #4QTFHS150004), the *Attachment E: Evidence Criteria* document was provided and submitted via the GSA eBuy portal. This document aligns the IPT Agile *V*^{i} process against said criteria to satisfy the evidence requirement for the proposal.

Agile V^{i} is IPT's process for accomplishing Agile/DevOps development. IPT has created Agile *V*^{i} so we can bring a repeatable process to our customer that has proven results. The Agile *V*^{i} process is designed to be interactive, customer-focused, and can be tailored to each customer's requirements. IPT firmly believes that creating quality software is a collaborative team effort and the customer is the MVP.



The Food Watch prototype is an example of IPT's full process compressed into mini-sprints to meet the proposal deadline. In a typical development process, these sprints are usually two to three weeks, but for the purpose of the Food Watch prototype IPT completed three two-day sprints to show the entirety of the process.

Sprint 1: Envisioning – This sprint is where we meet with the customer, brainstorm ideas, work on initial layouts and mock-ups, prepare our RDD (Requirements and Design Document) and review with the customer for acceptance. **Sprint Goal:** Capture the Customer Vision.

Sprint 2: Prototype Design – Based on the RDD one or more sprints are scheduled within a release window. A typical release usually contains two to four development sprints, with each sprint having at least one customer review session at the end, but typically we involve the customer as often as we can and find appropriate. **Sprint Goal:** Develop the use cases into functional software.

Sprint 3: Delivery Preparation – The final sprint before a release ensures that we have a quality feature set for the customer, and that any critical feedback the customer desires is incorporated into the release design. (If customer input is not feasible to implement, some feedback tasks move to the next release iteration.) This sprint is also where release notes/install guides/packages for release are finalized if required. **Sprint Goal:** Deliver a working design prototype that satisfies the customer vision.

The process evidence and documentation that follows contains descriptions, screenshots, and photographic evidence that map the activities that occurred within our three design sprints to the activities that required evidence to comply with the GSA Agile Delivery Services RFP as it pertains to Pool 1.

2. Required Evidence

a) Assigned one leader, gave that person authority and responsibility, and held that person accountable for the quality of the prototype submitted

Prior to Sprint 1, typical customer outreach occurs and a basic desire for a product is expressed. During IPT's Sprint 1: Envisioning phase, the **Need Statement** that drives overall design and development process is garnered. The team leader is ultimately responsible for making this happen and was assigned by the corporate leadership team to the project.

Mike was selected to be the Food Watch leader and **Product Manager** because of his experience leading technology driven projects for federal and commercial clients.

Mike has 29 years of experience developing and leading organizations in technology delivery and transitioning organizations to an Agile systems development life cycle. He has held positions in all aspects of the solution development life cycle over the course of his career, so he inherently understands how to assemble a lean, agile team that can embrace Agile *V*[i] processes and deliver the Food Watch solution. The IPT team held Mike accountable for the Food Watch prototype delivery, quality, and customer satisfaction.

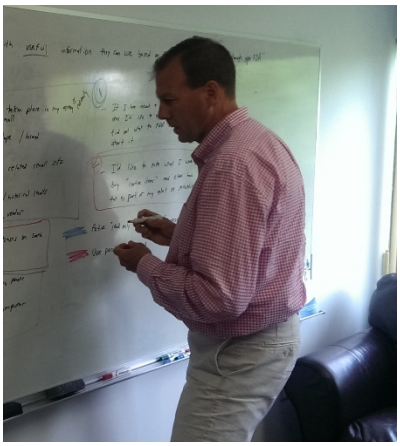


***Figure 1*. IPT's Product Manager leads the Food Watch design at the kickoff meeting.**

From this point forward, all tasks and activities (including the assignment of the project lead) were captured in our project / configuration management tools to help the Product Manager break down the project's work elements. For Food Watch, IPT used Microsoft's Visual Studio Online. IPT's backlog board within Visual Studio Online can be seen in *Figure 2* below.

***Figure 2*. Backlog board for IPT's Envisioning Sprint.**

Epics

Backlog Board

New | Create query | Column options

Type Epic

Title Add

Order	Work Item Type	Title	State
1	Epic	Food Watch Envisioning	In Progress
	Feature	Configure Project & Assign Team	In Progress
	Product Backlo...	Assign Team	Done
	Task	Assign Product Manager	Done
	Task	Assign Team Members	Done
	Product Backlo...	Create Environment	Committed
	Task	Create cloud environment for hosting	In Progress
	Feature	Acquire Customer Vision	Done
	Product Backlo...	Hold initial cutomer meeting to determine overall need state...	Done
	Task	Hold customer intro meeting	Done
	Product Backlo...	Hold kick-off meeting to capture customer vision	Done
	Task	Hold kick-off meeting	Done
	Product Backlo...	Develope RDD	Done
	Task	Create RDD	Done
	Task	Get customer concurrence on RDD	Done
2	Epic	Food Watch (Prototype)	In Progress

b) Assembled a multidisciplinary and collaborative team including a minimum of 3 labor categories from the Design Pool labor categories to design the prototype

The Product Manager worked with the corporate leadership team and department leads to assemble a project team and assign positions based on the scope of the project. The Product Manager's in-depth understanding of IPT's Agile processes allowed him to structure an estimated level of effort (LOE) required to rapidly deliver a quality and customer-focused Minimum Viable Product (MVP). To effectively deliver an Agile V[i] solution to the customer, IPT engaged a lean but seasoned staff bolstered with the necessary Agile and DevOps experience designing and developing digital services, designing web applications, using automated testing frameworks, etc.

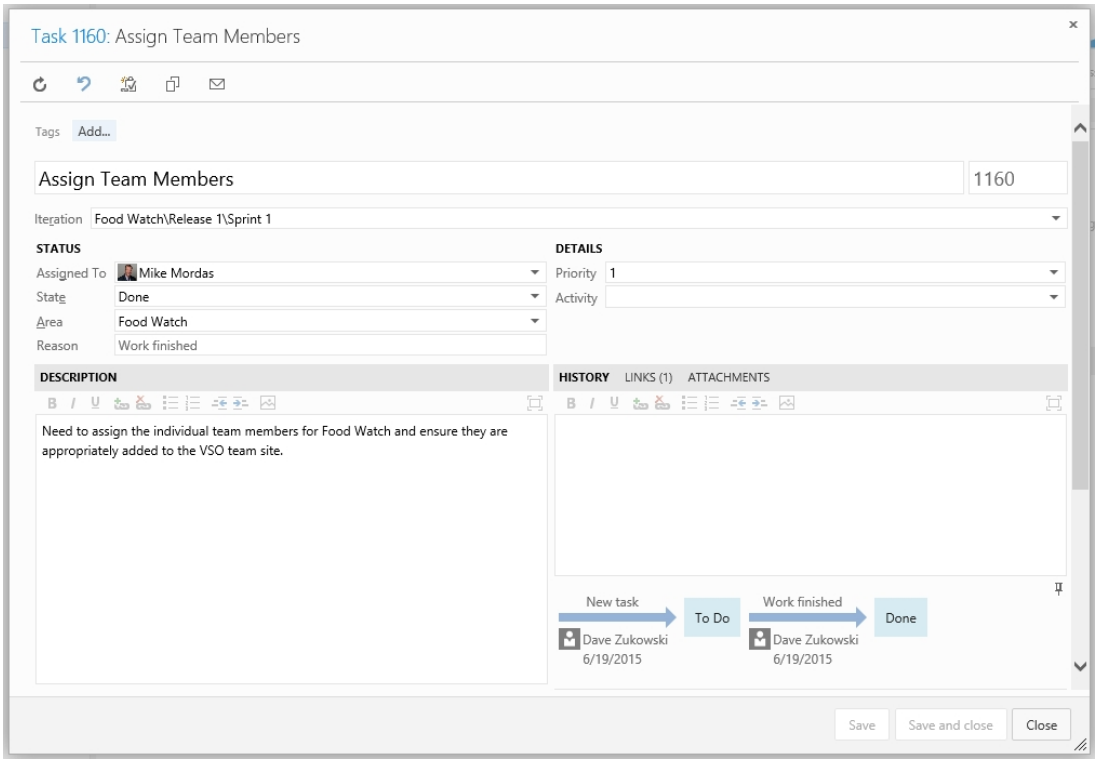
Figure 3. **IPT's Food Watch kickoff meeting and team assembly.**

The work elements previously broken down by the Product Manager were then assigned to each team member based on their experience and expertise as they apply to Pool 1 activities.

Product Manager: Mike
Front End Web Designer / Developers: Dan
Front End Web Designer / Developers: Josh
Interaction Designer / User Researcher / Usability Tester: Dave
Writer/Content Designer/Content Strategist: Adam

Team members were then added to the Food Watch Visual Studio Online team site so they could be assigned tasks for sprints, as seen in *Figure 4* below.

Figure 4. **Detailed task info screen for IPT's team assignments.**

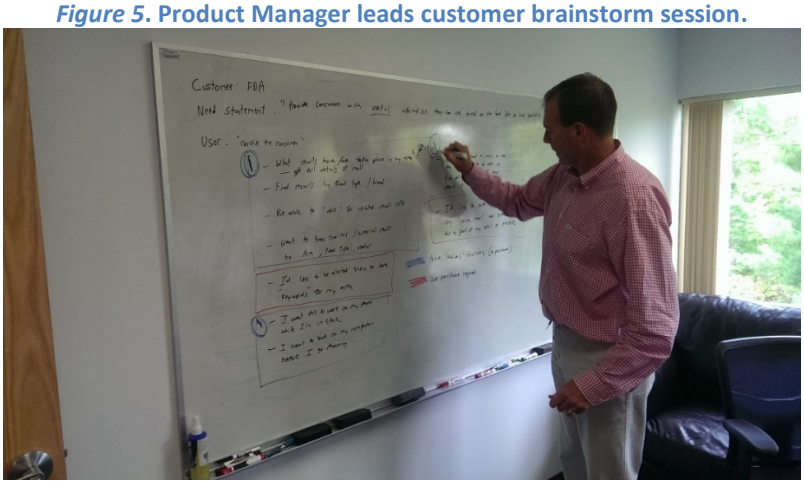


c) Understand what people need, by including people in the prototype design process

IPT's approach to determining a need for the OpenFDA dataset was people-centric, and included both our customer (FDA) as well as consumers (i.e., end users). As part of IPT's Envisioning Sprint, our Product Manager ran an initial kickoff session (*see Figure 5)* to discuss our customer's vision and its objectives for OpenFDA data. The goal of this meeting was to deduce the FDA's objectives into a single "Need Statement" aimed at achieving the vision. (The Need Statement outlines the customer's primary requirement, ensures our development team is aligned around a single overarching objective, and drives the rest of the design (and future development)).

The Need Statement for Food Watch is as follows: **Provide consumers with <u>useful</u> information based on the data made available through OpenFDA.** *(Note: Need Statement can also be found in the Requirements and Design Document (RDD).)*

Figure 5. **Product Manager leads customer brainstorm session.**



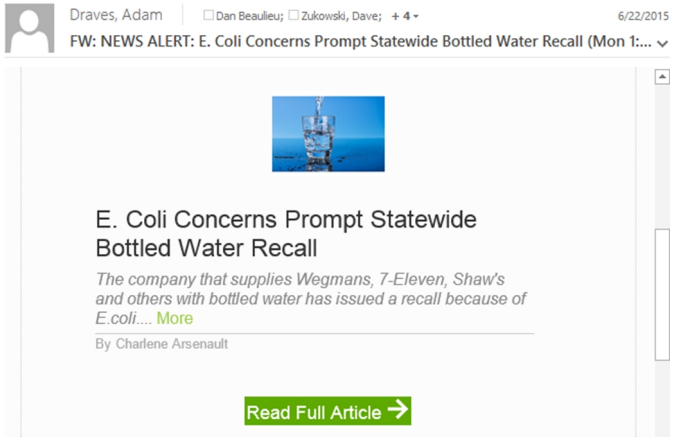
Once the Need Statement was generated, the team then focused on determining what consumers would find to be "useful information." Our Product Manager and User Researcher facilitated an interactive consumer/user brainstorm session with a Food Watch user named **"Connie the Consumer."** We designed questions pertaining to **"Connie's"** needs, hypothesized "her" behaviors, and flagged research items for the team, as seen in *Figure 6* below. All Pool 1 teammates provided input to this early phase of our process which organically led to the implementation of user-centered techniques. (Please reference the Product Manager's notes from this meeting in IPT's repository: ***Product Manager Notes - Food Watch- Envision Inception - 2015-06-18.txt.***)

***Figure 6*. Product Manager's Notes on Customer's Vision.**

```
Customer: FDA
Need Statement: "Provide consumers with useful information they can use based on the food data we have available through OpenFDA"

Persona:
- Food Manufacturer
- Food Distributor/Store
- Consumer

User Need Questions:
- What frustrates you about food recalls as they exist today?
- When do you want to know about a food recall?
- Which food recalls do you want to know about?
- How would you look for information about a food recall?
- What information do you want to see about a food recall?

Consumer will use the solution because:
- Get alerted when recalls happen for:
        - typical food I purchase is recalled
        - there are recalls in my area
        - there are national recalls
- Hear about the recall in the news - find out more about it because I may have purchased a recalled item

User: "Connie the Consumer"
1- What recalls have/are taken palace in my area or nationally
1- Find recalls by food/brand-manufacturer
1- Be able to "drill" for related recall information
1- I want this to work on my phone while in a store
1- I want to look on my computer before I go shopping
1- If I learn about a recall on the news I'd like to be able to find out what the FDA knows about it

2- I'd like to be alerted based on "saved keywords" for my area
2- I'd like to enter what I usually buy "routine items" and either have that as part of my alter or selectable
2- I'd like to be able to setup an ongoing account with Food Watch so that you can store my preferences
2- I'd like to be able to submit potential recall items
2- I'd like to understand the recall process
2- I need this to work on my phone since I may hear about a recall when travelling

How does the FDA implement a recall?
  - How are stores alerted?
  - How are news outlets alerted?
```

"Connie" also provided feedback and delivered research items by presenting an email alert regarding a food recall on water. The email in Figure 7 below shows a similar kind of Food Watch product that "Connie" found valuable that the design team took into consideration during the brainstorm.

***Figure 7*. Customer feedback and recall research suggestion.**



All Pool 1 teammates provided input to this early phase of our process which organically led to the implementation of user-centered techniques. (Please reference the Product Manager's notes from this meeting in IPT's repository: ***Product Manager Notes - Food Watch- Envision Inception - 2015-06-18.txt.***)

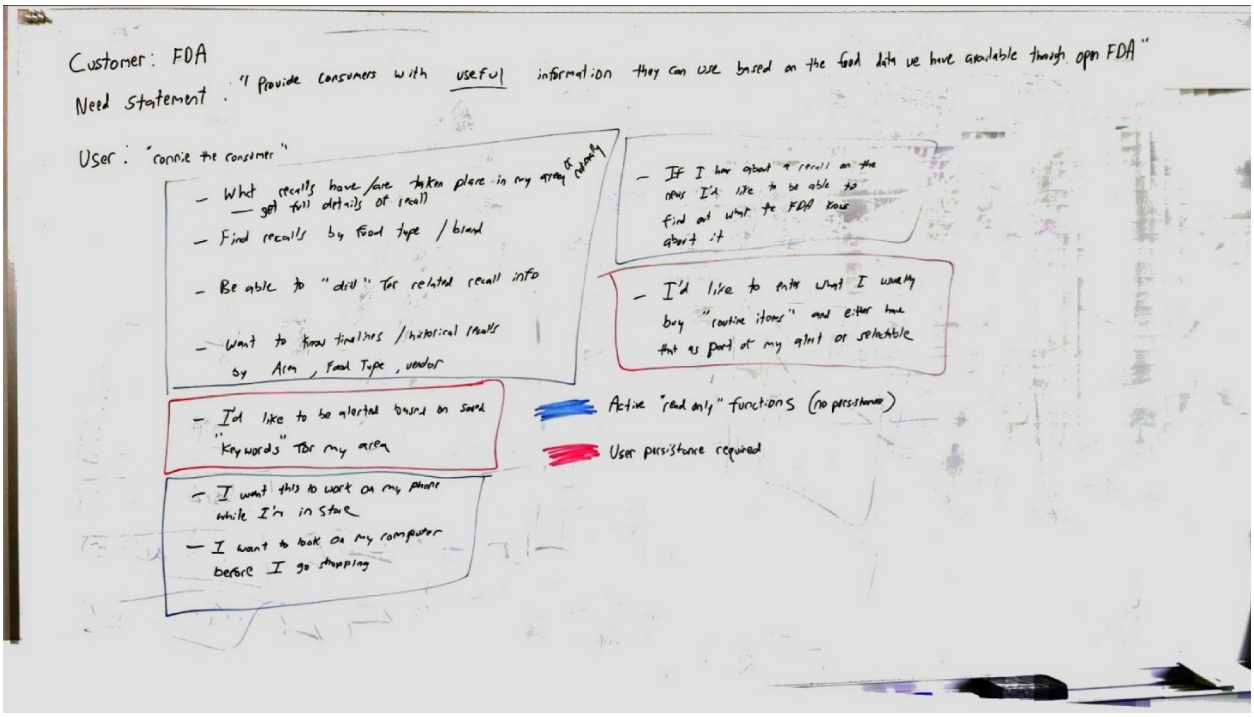
d) Used at least three "human-centered design" techniques or tools

Humans/users are the most crucial component of IPT's Agile *V*[i] process. While many users often do not know exactly what they want, they generally have a pretty good idea of the kind of things they'd like, or have a general understanding of the problem they want resolved. IPT believes it is our job to help them marry what they want to the art of the possible, and continually iterate on those concepts to come up with something they truly want and need. For all projects, the result of our Envisioning phase is to have the customer's product vision delivered. IPT accomplished this using five user-centered tools and techniques:

1. **User Interview & Interactive Brainstorm Session.**
2. **Develop Use Cases.**
3. **Design Food Watch Wireframe.**
4. **Build the Food Watch RDD and get user feedback.**
5. **User survey and feedback on Food Watch logo design.**

User Interview & Interactive Brainstorm Session. IPT interviewed the Food Watch user – "Connie the Consumer" – and documented the user goals, needs, preferences, behaviors, etc. Results from the Food Watch user interview can be seen in *Figure 7* below and found in the RDD as well.

***Figure 8*. IPT's whiteboard from user interview and interactive brainstorming session.**



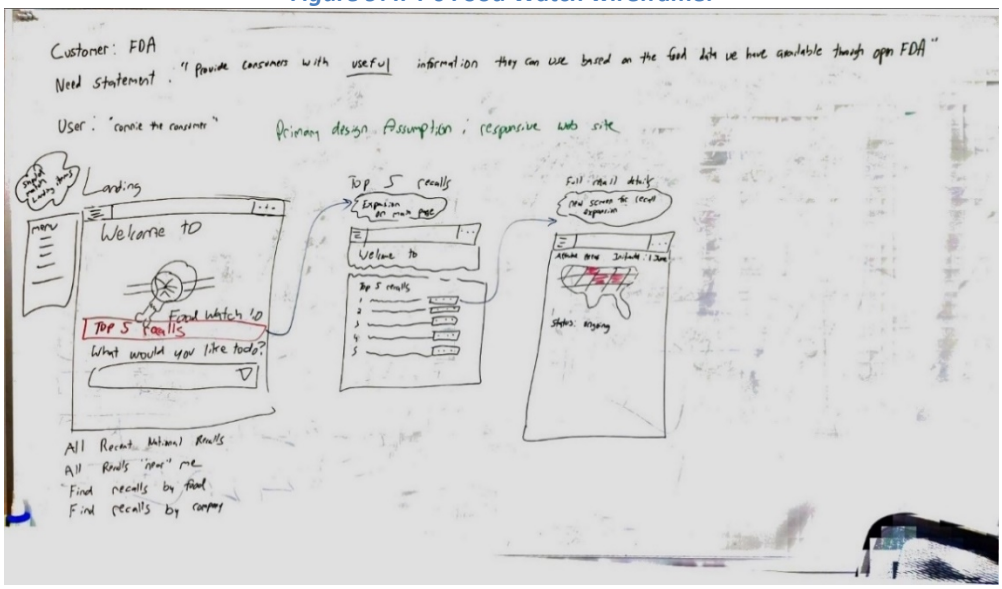
Develop Use Cases. We did not attempt to list every possible use case, but focus on the most common and critical interactions that the personas have with the system. The three use cases were a) User wants to see all recent food recalls; b) User wants to see all recalls based on food type and/or food company; c)

User wants alerts based on her keywords. From these use cases we were able to begin to identifying concrete requirements for the solution. IPT also detailed process flows for each use case.

Use Case specifics can be found in the RDD which is located in IPT's GitHub repository.

Design Food Watch Wireframe. See *Figure 8* below which illustrates IPT's wireframe based on the user interview, brainstorm, and Food Watch use cases.

***Figure 9*. IPT's Food Watch wireframe.**



Build the Food Watch RDD and get user feedback. The complete RDD can be found in IPT's GitHub repository. The FoodWatch RDD is complete with prototype assumptions, persona information, use cases, business requirements based on those use cases, data requirements, design goals, high level data diagrams, and interface designs. By creating our Food Watch RDD, IPT has documented a baseline agreement between IPT and the customer as to what solution will be built. It is important to note that this is a baseline, and we fully expect iterations, changes, and clarifications to occur throughout the process, but the RDD gives us a stable foundation from which to move forward.

***Figure 10*. User feedback on RDD via email exchange.**

From: Draves, Adam
Sent: Friday, June 19, 2015 3:54 PM
To: Zukowski, Dave; Mordas, Mike; Beaulieu, Dan; Garfield, Justin; Alimi, Josh; Pete Noble
Subject: RE: Food Watch RDD

Dave – Great work. Looks solid to Connie the Consumer. No further input from Connie. Pretty sure we're good right now with the RDD, user interviews, and use cases which we already have documented (and then we'll also have the prototype). Let's more talk on Monday about the VSO timeline.

I voted on the Food Watch logo design contest. Looking forward to seeing who wins this thing!

From: Zukowski, Dave
Sent: Friday, June 19, 2015 1:57 PM
To: Mordas, Mike; Draves, Adam; Beaulieu, Dan; Garfield, Justin; Alimi, Josh
Subject: Food Watch RDD

The FoodWatch RDD has been completed. It can be found below. Please review ASAP as sprint 1 is scheduled to end today and the goal for sprint 1 is concurrence on the RDD from customer (Adam/Connie). I'm going to get VSO all setup as best I can today as well.

https://ipt.sharepoint.com/sites/foodwatch/_layouts/15/WopiFrame.aspx?sourcedoc=%7BDC31006B-8D69-4E94-AEA6-E5677B62D051%7D&file=0619015_FoodWatch_RDD.docx&action=default

User survey and feedback on Food Watch logo design. IPT then used an interactive process to design the Food Watch logo. The team used the user inputs to drive the logo design that would be the face of the application. *Figure 11* through *Figure 15* illustrate the user-focused steps taken to design the Food Watch logo.

IPT's Content Designer helped develop the text behind the user survey based on the user interviews and brainstorming session (*Figure 11* and *Figure 12*.) With the user, the team brainstormed the qualities and values they wanted the Food Watch logo to convey to other users (*Figure 13*). We then requested user feedback on the final eight logo design options (*Figure 14*). The results of this feedback resulted in the Food Watch logo being selected (*Figure 15*).

***Figure 11*. Logo design process included user survey and interaction.**

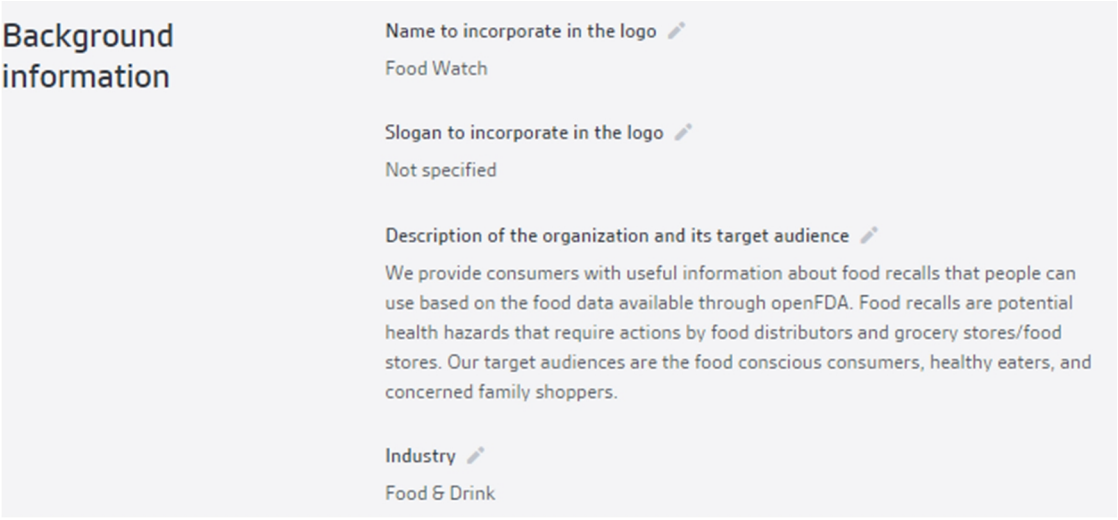


***Figure 12*. Additional notes on what we want to purvey with the application design.**

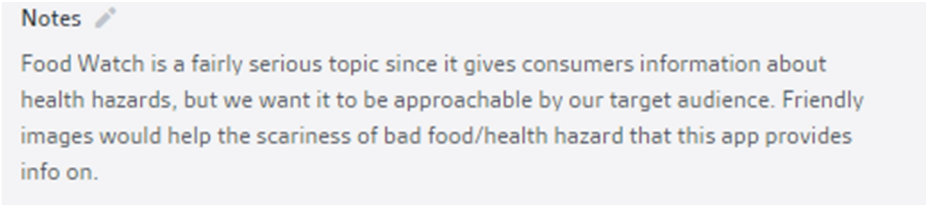


***Figure 13*. Logo / App values to help drive design.**

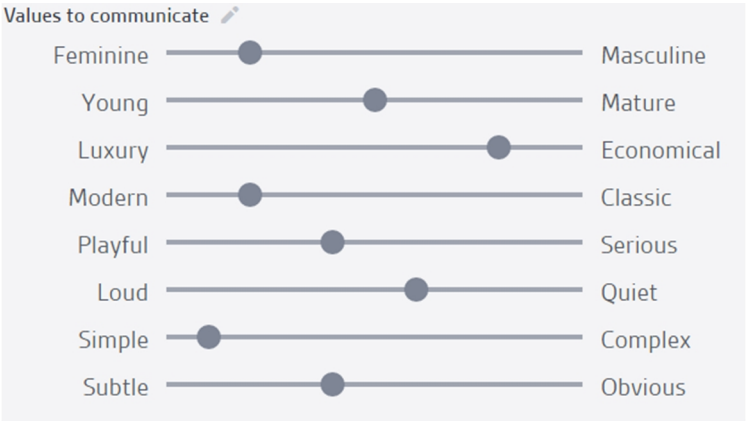


Figure 14. User feedback requested during the IPT design process.

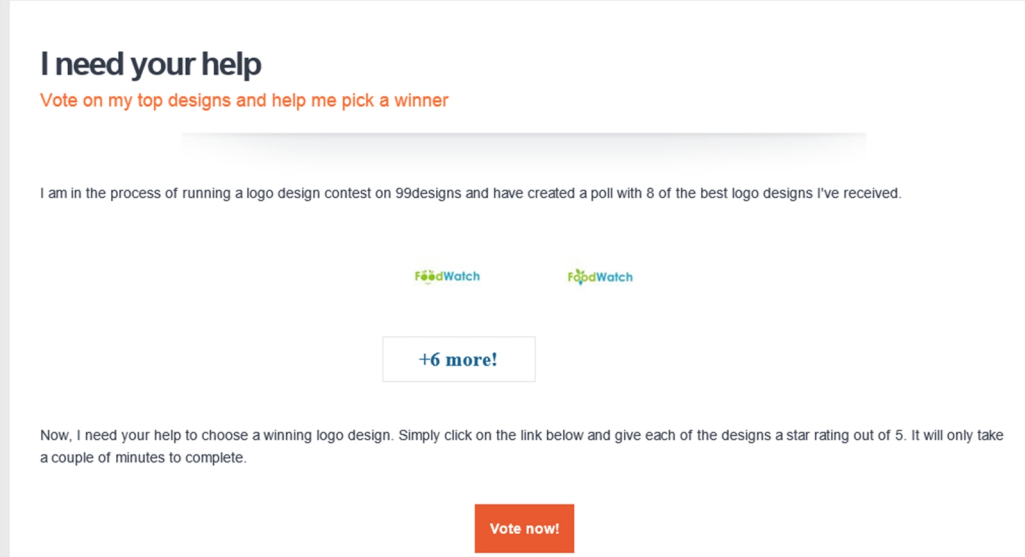
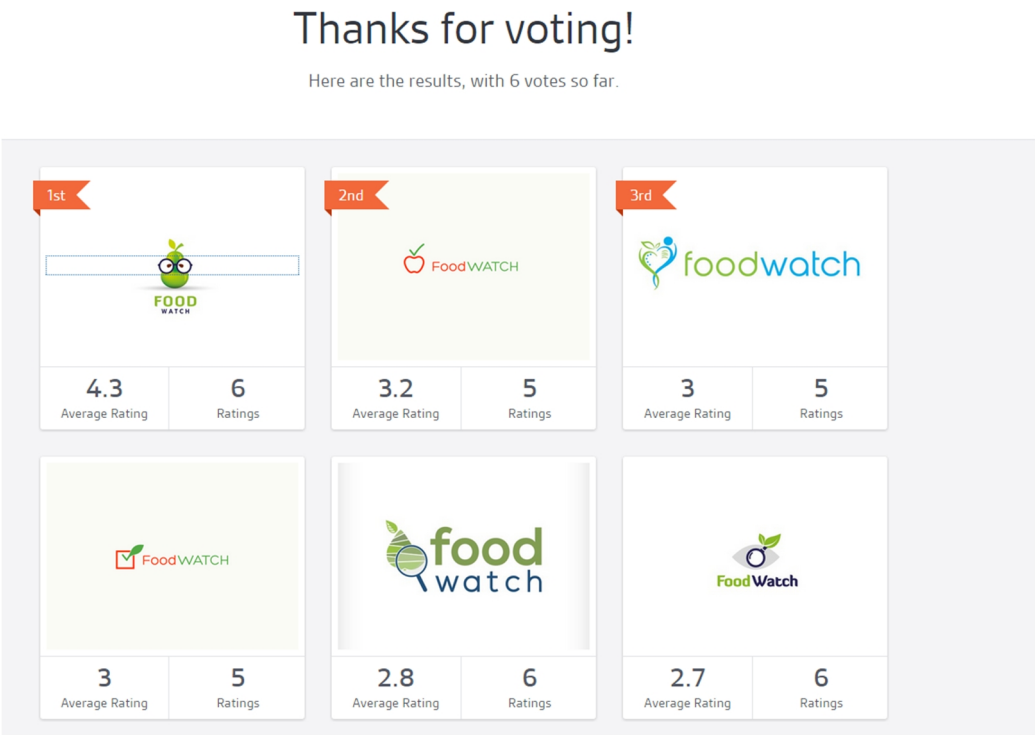


Figure 15. Results of all feedback led to our team's logo design decision.



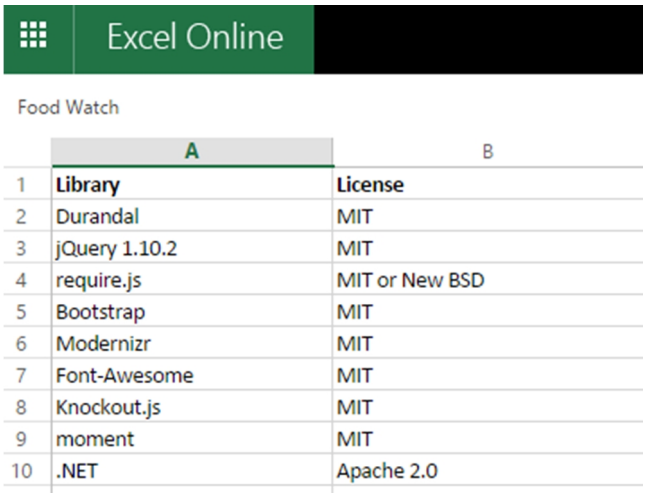
e) Created or used a design style guide and/or a pattern library

A product style guide document was created and used to establish a consistent style and brand for Food Watch. The Food Watch product style guide can be found in the GitHub repository.

/Assets/Food Watch Style Guide.pdf

f) Used at least three modern (see Note #2) and open source frontend or client side (see note #3) web technologies

Figure 16. **Modern open source front end web technologies IPT used to design Food Watch.**



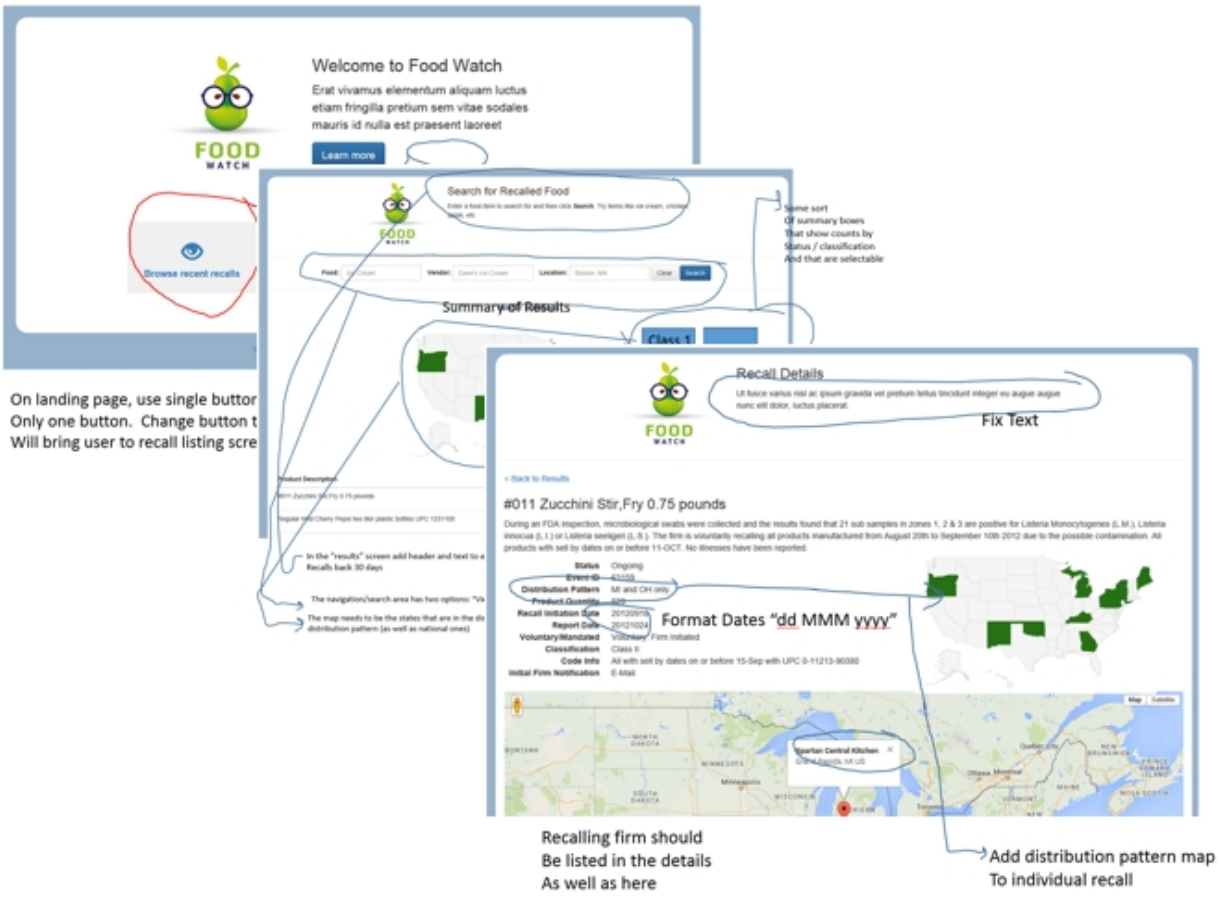
	A	B
1	**Library**	**License**
2	Durandal	MIT
3	jQuery 1.10.2	MIT
4	require.js	MIT or New BSD
5	Bootstrap	MIT
6	Modernizr	MIT
7	Font-Awesome	MIT
8	Knockout.js	MIT
9	moment	MIT
10	.NET	Apache 2.0

g) Performed usability tests with people

After (and often during) each design and development sprint, a user review and usability test occurs. The results of this testing and review help inform the follow-on sprints. In the case of the design sprint, the usability test is handled through interactive whiteboard sessions and the development and review of the RDD (for use case acceptance and wireframe acceptance).

In *Figure 17*, Connie reviewed the Food Watch design and suggested the "Browse Recent Results" be more visible than the "Learn More" button on the landing page. Connie also wanted a map of the United States with states highlighted so she could quickly see if her state was effected by a certain food product's recall. Connie also picked up that the recall firm was missing in the recall details, which was information she would have wanted. All of these usability test results were highlighted in *Figure 17* as the front end designers/developers marked up their designs. The front end designers took the results from Connie's usability test to incorporate into the next iteration of Food Watch.

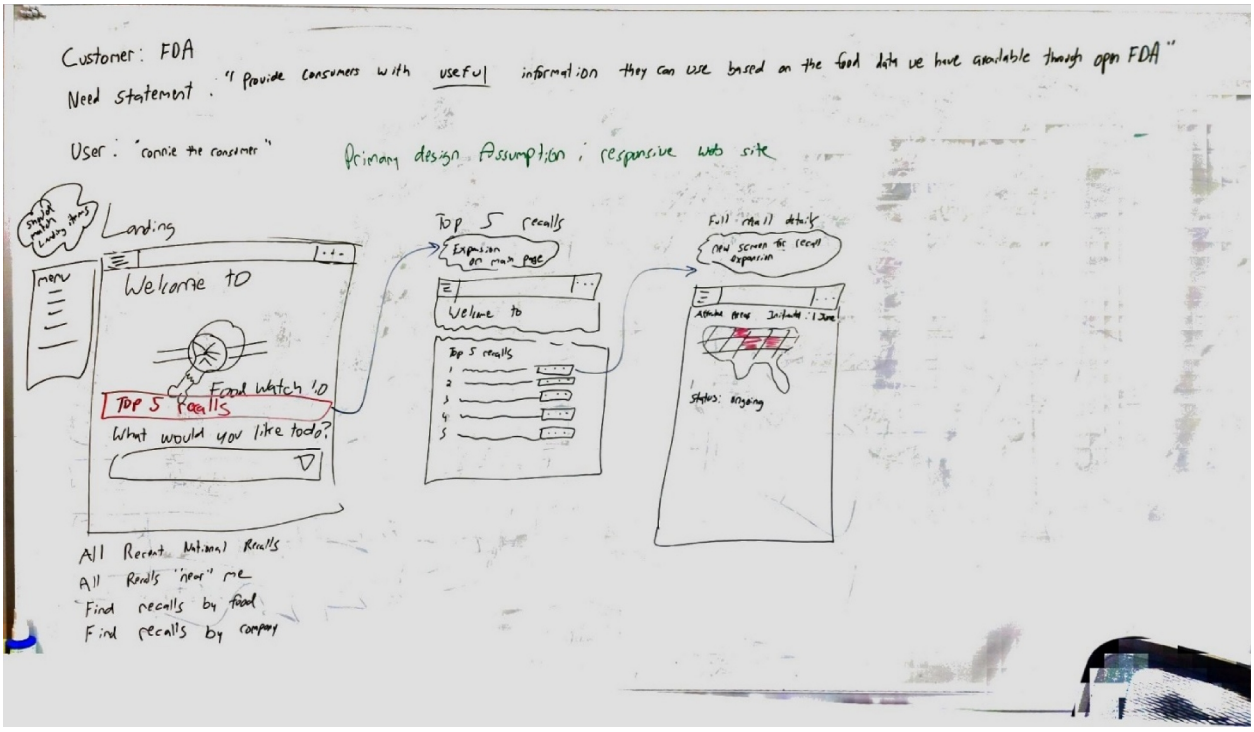
Figure 17. **Customer Review and Usability tests during design phase.**

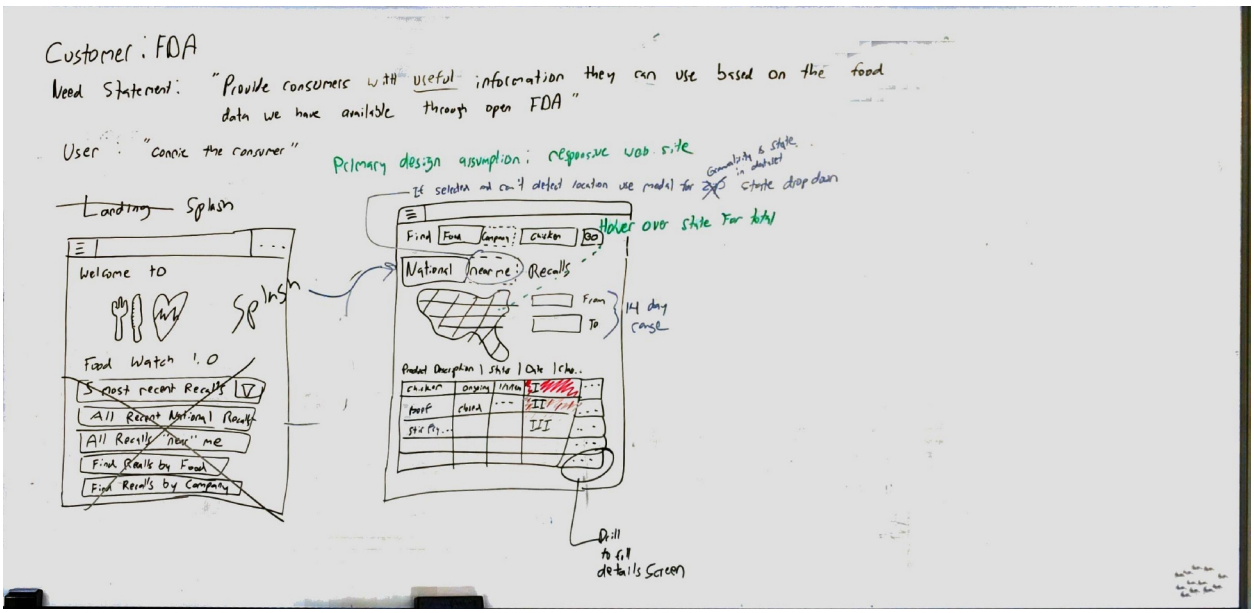


h) Used an iterative approach, where feedback informed subsequent work or versions of the prototype

In the design phase, the brainstorming and whiteboard sessions, team reviews, customer feedback, and usability tests drove the design through an iterative and collaborative process. The rough initial whiteboard drawings were iterated on by the team to establish the basic layout as well as look and feel of the product. Those were translated into the RDD as wireframes and further reviewed with the customer to ensure they met the need. From customer feedback the RDD was iteratively tweaked and updated until an agreed "baseline" design was reached and then the working design prototype was built. The working design prototype was reviewed by the team and customer providing changes and tweaks to improve the overall interactive user experience.

Figure 18. **IPT's brainstorming whiteboard design iterations.**





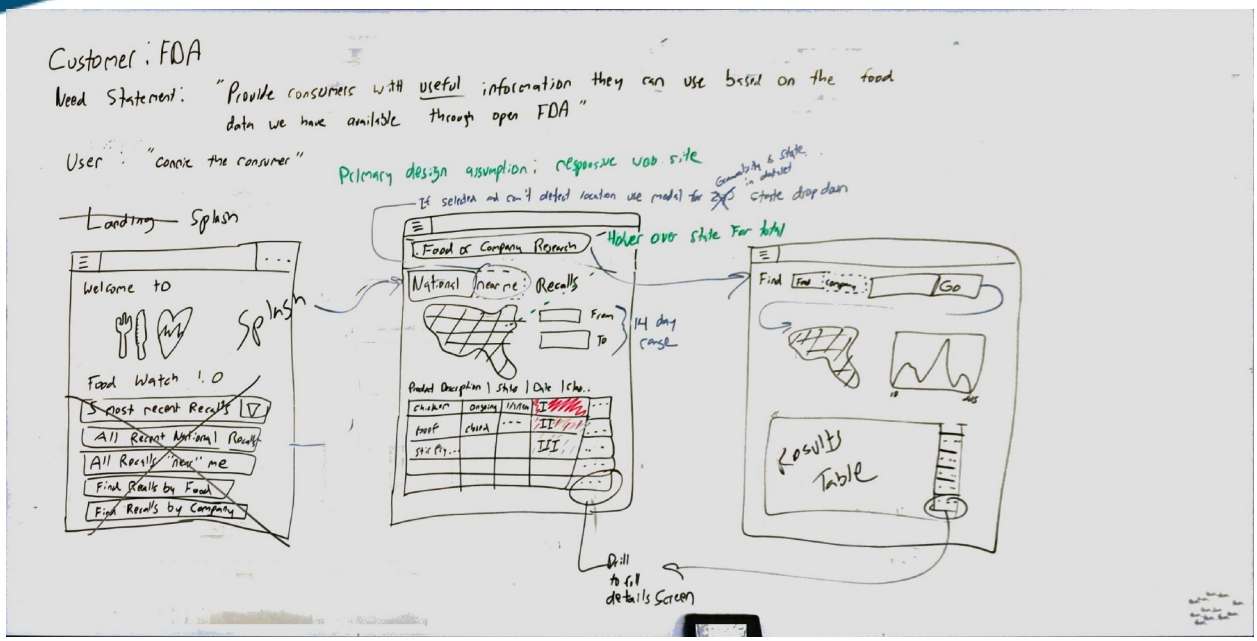
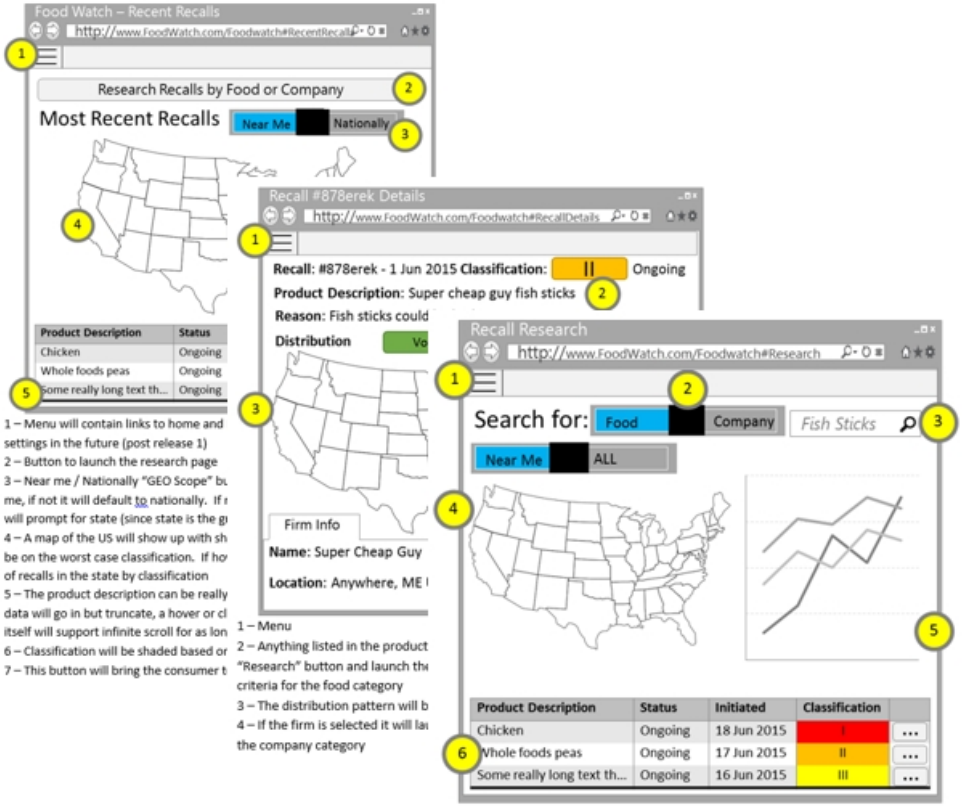


Figure 19. **RDD Wireframes driven by the whiteboard sessions.**



1 – Menu will contain links to home and settings in the future (post release 1)
2 – Button to launch the research page
3 – Near me / Nationally "GEO Scope" bu me, if not it will default to nationally. If will prompt for state (since state is the g
4 – A map of the US will show up with sh be on the worst case classification. If ho of recalls in the state by classification
5 – The product description can be really data will go in but truncate, a hover or cl itself will support infinite scroll for as lon
6 – Classification will be shaded based or
7 – This button will bring the consumer t

1 – Menu
2 – Anything listed in the product "Research" button and launch th criteria for the food category
3 – The distribution pattern will b
4 – If the firm is selected it will la the company category

1 – Menu
2 – This is the research type toggle, either food or companies (firms) can be researched
3 – This is the search term, if "drilled" from another page this will be prepopulated and executed
4 – This shows an aggregate of the distribution pattern and otherwise behaves like the map on the landing page, and also allows the research to be restricted to recalls near me or "All"
5 – This is a histogram of recalls over time by classification
6 – This is the list of results based on the research and behaves exactly as the grid does on the landing page

Figure 20. Usability/Feedback Sessions as tasked in Visual Studio.

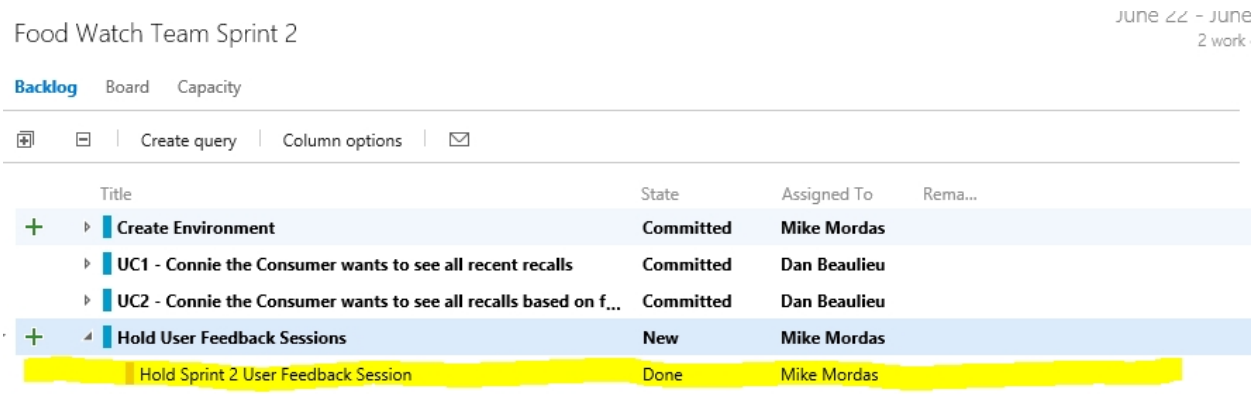
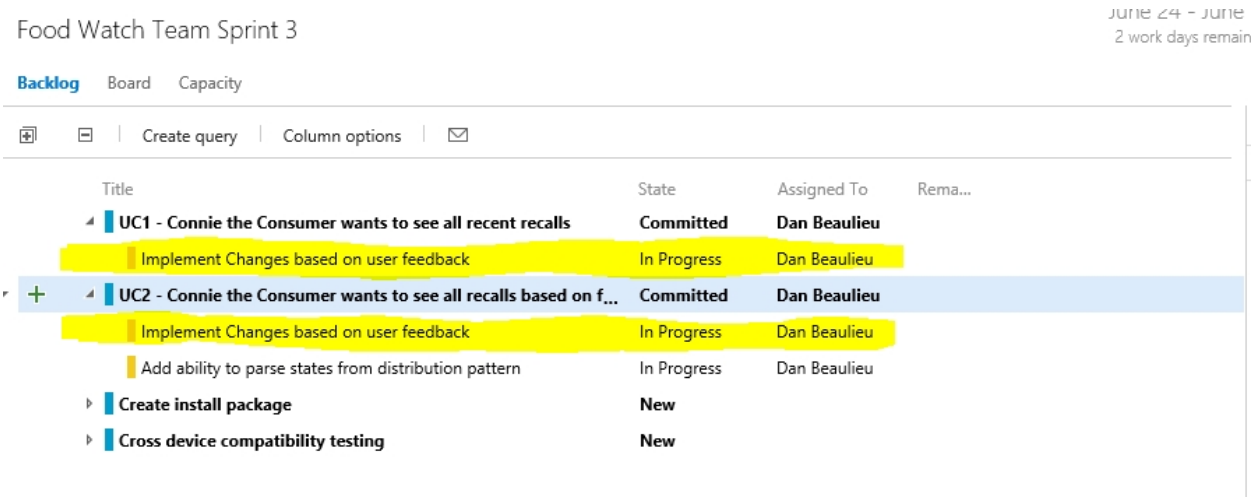


Figure 21. IPT's design and prototype review sessions.

***Figure 22*. New tasks for final prototype design sprint driven by Sprint 2 feedback results.**



i) Created a prototype that works on multiple devices, and presents a responsive design

IPT captured screenshots of a responsive, functional Food Watch prototype working on multiple devices including Google Chrome on a PC, IE on a PC, an Android phone, an iPhone 5 iOS, and a Windows 8 phone. See *Figure 23*, *Figure 24*, *Figure 25*, *Figure 26*, and *Figure 27* below.

Figure 23. **Screenshot showing responsive Food Watch application on Google Chrome PC.**

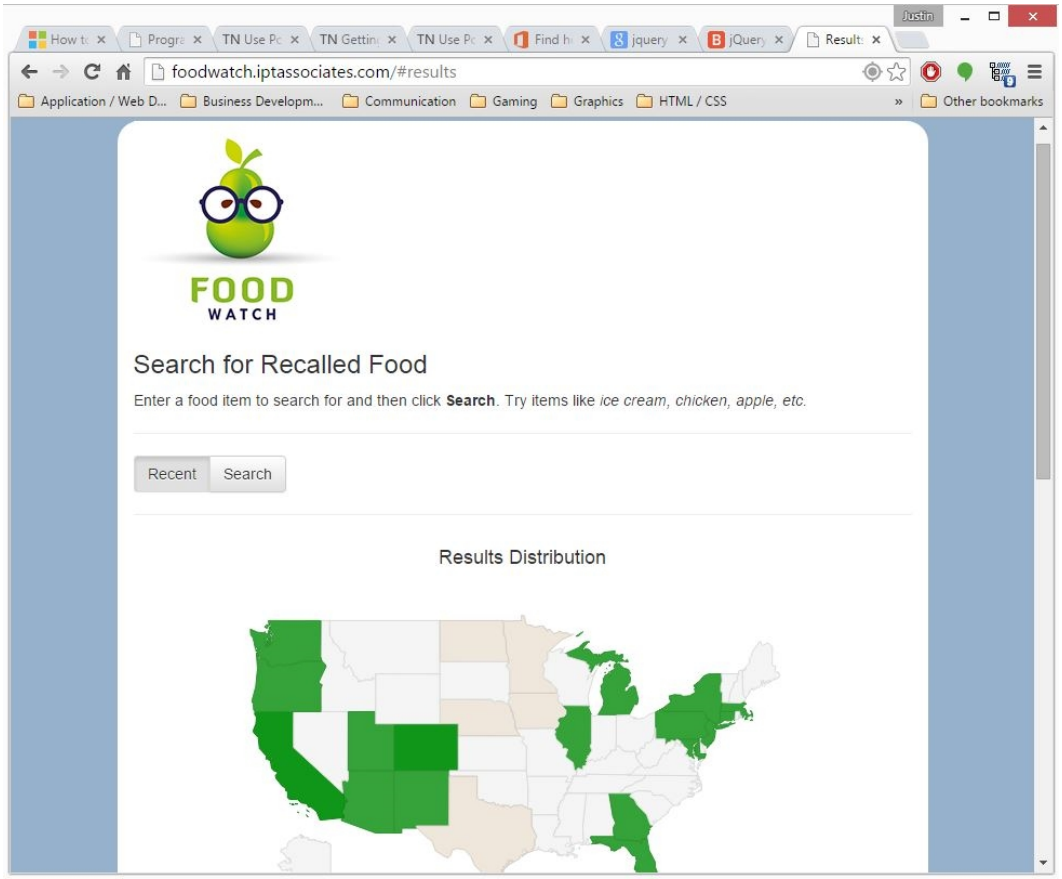


Figure 24. Screenshot showing responsive Food Watch application on IE on a PC.

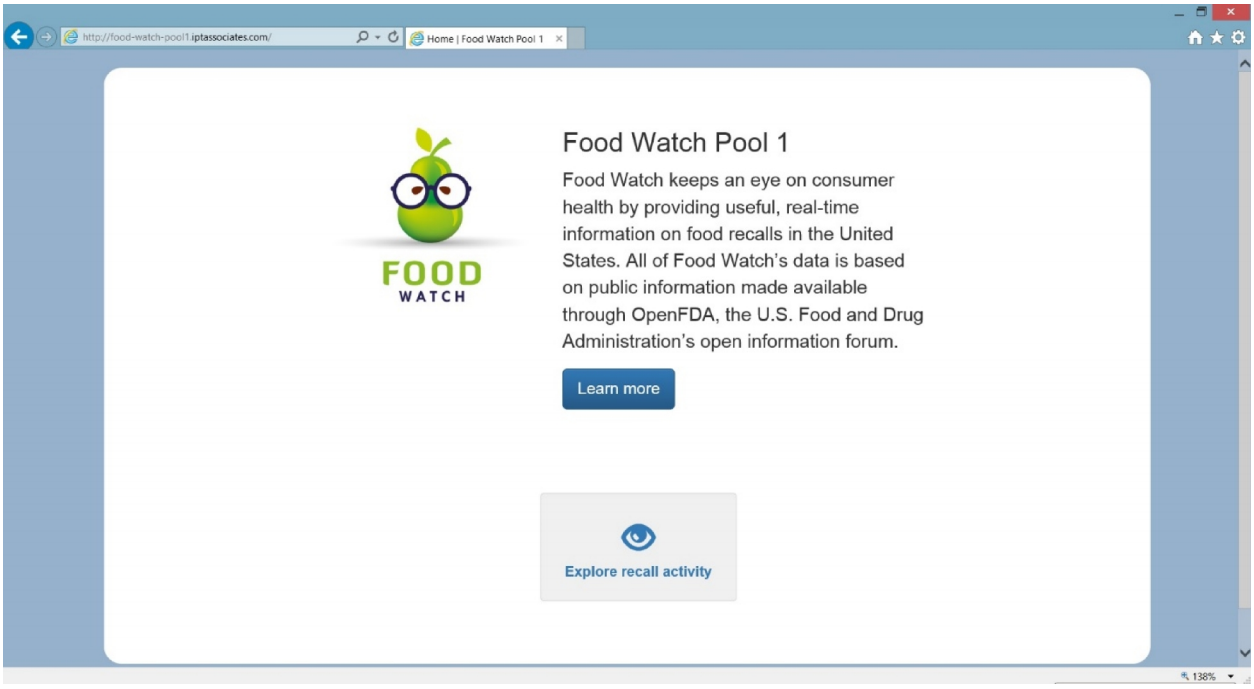


Figure 25. **Screenshot showing prototype works on Windows 8 mobile phone.**

***Figure 26*. Screenshot showing prototype works on Android mobile device.**

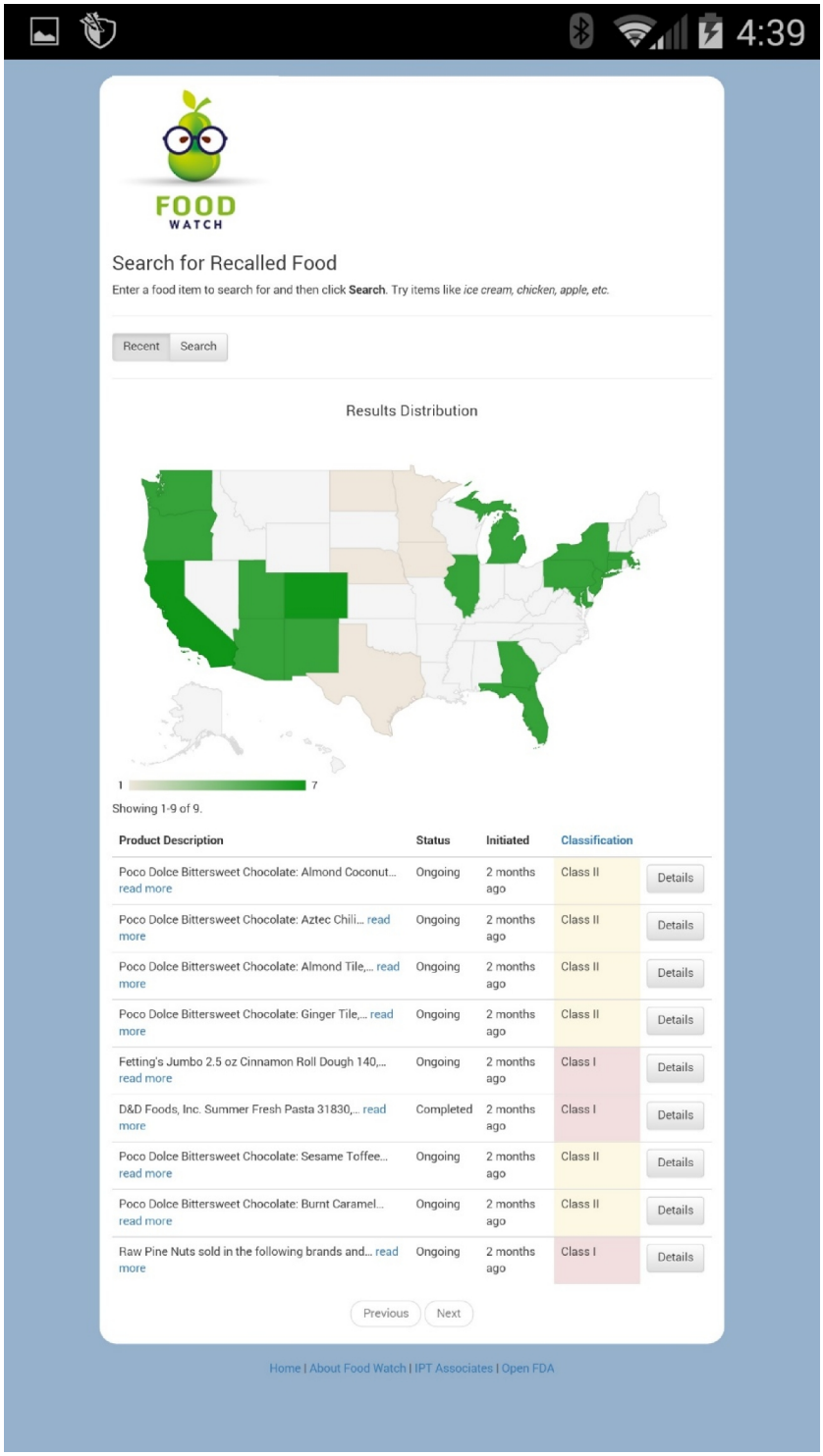
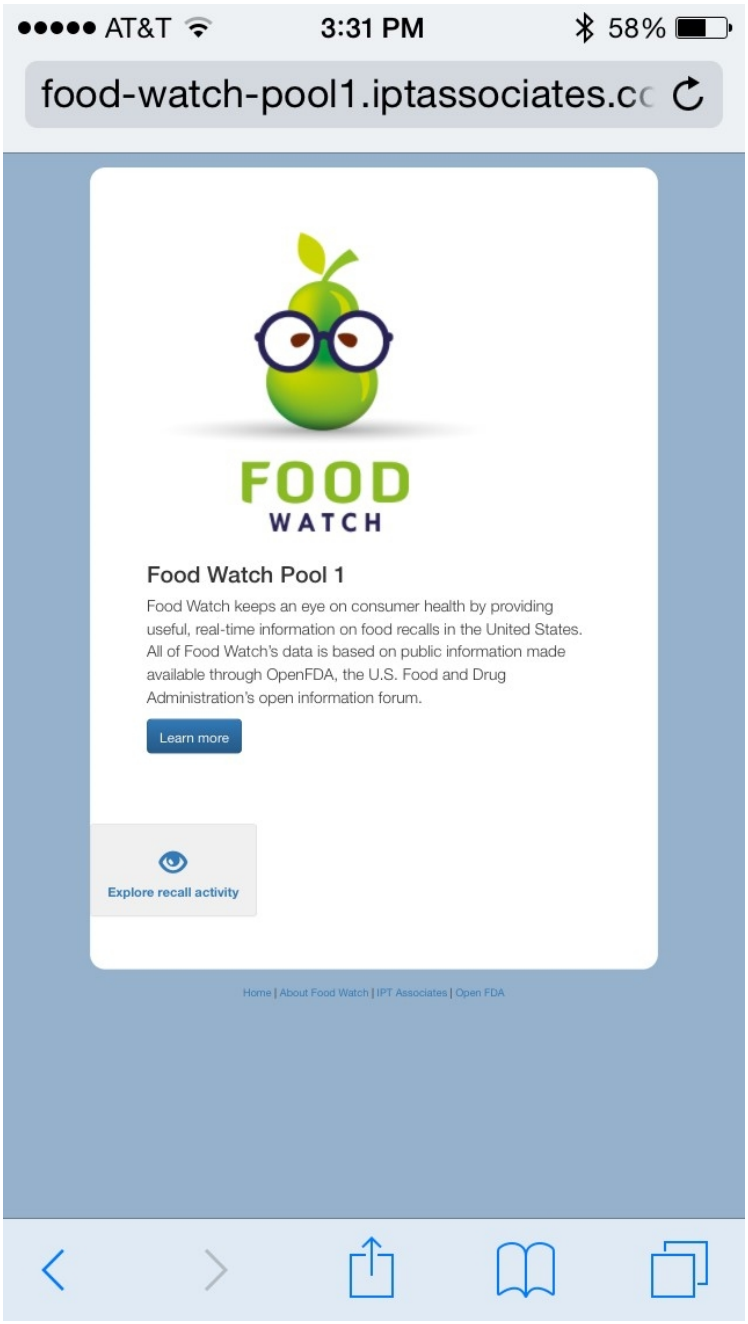


Figure 27. Screenshot showing prototype works on Apple iPhone 5 iOS.



j) Provided sufficient documentation to install and run their prototype on another machine

A Food Watch Installation Guide was provided in the documentation folder in our GitHub repository.

k) Prototype and underlying platforms used to create and run the prototype are openly licensed and free of charge

IPT leveraged ten (10) modern, openly licensed platforms to design Food Watch. All frameworks used, as depicted below, are open-source technologies licensed through the free MIT platform.

Figure 28. **Platform license listing.**

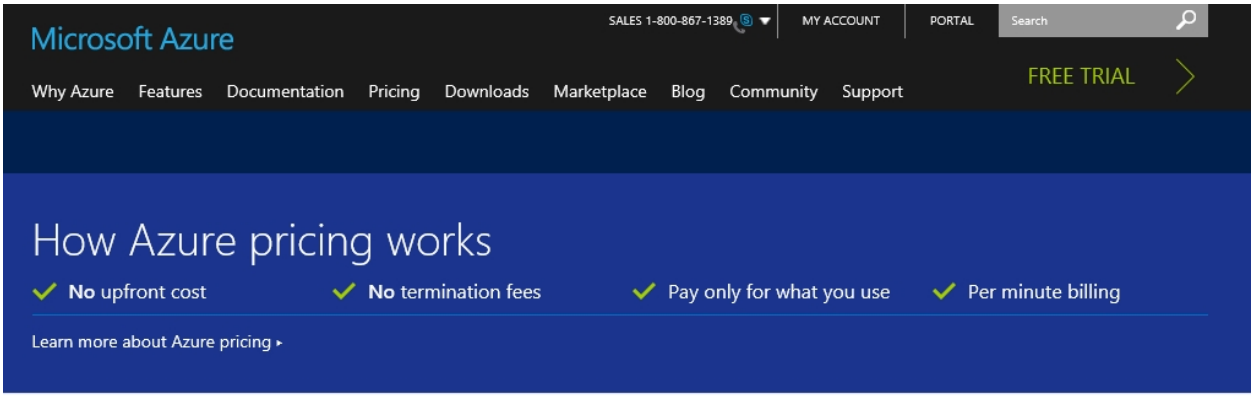
Excel Online

Food Watch

	A	B
1	**Library**	**License**
2	Durandal	MIT
3	jQuery 1.10.2	MIT
4	require.js	MIT or New BSD
5	Bootstrap	MIT
6	Modernizr	MIT
7	Font-Awesome	MIT
8	Knockout.js	MIT
9	moment	MIT
10	.NET	Apache 2.0

IPT ran the prototype in the free version of Microsoft Azure, as *Figure 29* illustrates:

Figure 29. **Hosting container initial pricing.**



App Service brings together everything you need to create web and mobile apps for any platform and any device. The Free and Shared plans allow you to host your apps in a shared environment, while Basic, Standard, and Premium plans provide Virtual Machines dedicated to your plan. You can host multiple apps and domains in each instance you deploy within your plan.

	FREE Develop and test apps	SHARED Dev/test with higher limits	BASIC Go live with basic apps	STANDARD Go live with web, mobile, logic apps	PREMIUM Maximum scale and enterprise integration
Web, mobile, or API apps	10	100	Unlimited	Unlimited	Unlimited