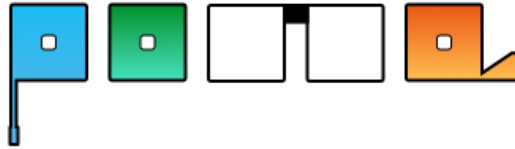


Poma - UX Case Study

by: Emily Monte Calvo



Metadata	Metadata Input
Project Name	Poma
Project Tagline	Fruit-scanning app that can tell how fresh and ripe a fruit is, and even if it is organic or not.
Patents Filed by founder (under Applicolor)	https://www.google.com/patents/US20140168412 https://www.google.com/patents/US20160307040
Project Summary	Poma is currently designed to be an app for businesses in the produce market. The technology for Poma allows picture scans of produce to be analyzed very accurately in order to determine ripeness/freshness. It even distinguishes between organically grown and conventionally grown produce.
Project Date (my involvement):	08/01/2015-02/01/2017
Major Tasks & Responsibilities (UX)	Develop wireframes and user personas, logo, sticker-designs, and icons. User-centered design prior to the first round of funding is limited to our own people using it (pre-patent security concern from founder) and giving feedback. Testing and selecting fruit with the app to gather data.
Platforms	Phone and Web, potentially Tablet
Design Tools	Sketch, GIMP, hardware (metal box for picture testing), Android phones

Project Summary:

Poma is an app that's been in pre-funded development for a couple of years, and has had several different working names before Poma was settled on. It has gone through many iterations, first being designed as a personal-app, but later evolved to become an app for businesses in the produce business. The Poma technology has the ability to take a picture of a fruit or vegetable and analyze how ripe and fresh the product is. Pictures are even able to tell the difference between organic and conventionally grown fruit. The science is fascinating, and Poma has the potential to create a new market in the produce business. My UX involvement has been on an as-needed basis (ranging from every other month to every day). The timeline of this report starts with my involvement in UX and goes until the first round of official funding was delivered. The early UX stage involved creating wireframes and mockups to show the engineer

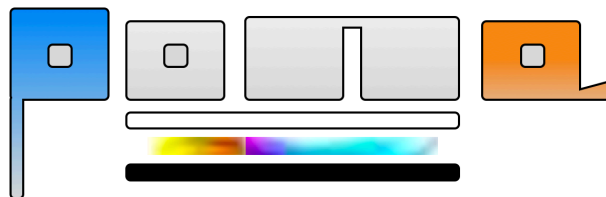
and potential investors. Later, as the project evolved icons, labels and stickers needed to be created. The idea for the labels was that the label would have an RGB-color ratio on it, the color of the biological matter would be calibrated against the colors on the label for consistency, in order to calculate the correct ratios. The final stage that this report covers involved extensive testing with the alpha-version of the app (both to gather data on the produce and to test the usability of the app itself), in addition to new wireframes and user personas being created to accommodate the new iteration.

Technical information (from the patent) on the Poma project: “A method of comparing ratios of wideband spectral channel sum values of an agricultural product that can include but not limited to produce, poultry, fish, meat flowers, plants and crops, to wideband spectral channel summary ratios of a preprinted ratio label, in a manner to highlight calculated biological qualities detected on wideband image sensors...” (<https://www.google.com/patents/US20160307040>).

Design Stage	Deliverable	Description
Design	Mockups	I created several iterations worth of mockups to show potential investors and help guide the engineer.
Design	Wireframes	Several iterations of wireframes were done, the most current focus on the website (not the app), which is where the potential clients can log in to view data and our team can see even more types of data.
Design	Icons and Labels	I used Sketch to create the logo, and the logo needed to be designed so that it would work as a clear sticker that could be placed on produce and scanned, so the “O” and “M” in Poma are essentially blank boxes that let the scanner see the produce color.
Design	User Personas	In order to help guide the team and give empathy and understanding for the engineer, I developed user personas focusing on potential clients for both the web-side and the app-side.

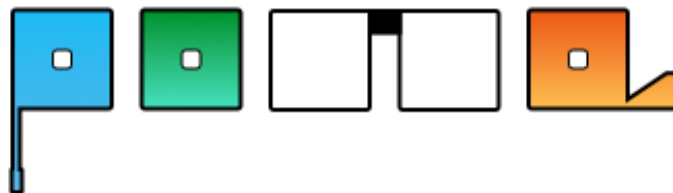
Design Stage	Deliverable	Description
Discovery	User Testing	Prior to the patent (acquired only recently) all user testing was done by the team. The app was originally written in Java but then switched to Unity to allow for better cross-platforms. Data about the produce was also needed so using the app was done daily to test both the usability, test for crashes and gather produce data from the pictures. Two team members have done several on-site visits to warehouses to see the conditions under which people would be using the app.

Early Label Ideas:



This above design was rejected, but it was the first draft as we were trying to figure out what the label would need. Originally we thought having a spectrum of colors on the label itself would be a good idea, but I thought it would be too messy, and we didn't need very many colors to calibrate the photos.

Final sticker/label design:



The white color in Poma's letter "m" is actually intended to be clear as a sticker, and that would be where we would get to see the vegetable/fruit.

Label Examples:



Learnings Summary:

The Poma project, due to the nature of the technology being used was a new learning experience every day - and that's just knowledge about produce and distribution! With regards to my involvement, the early stage of working on this project was the hardest. The working title one of the founders wanted was quite different than what others liked. The design sense in the beginning for the first mockups was a great lesson in communication, as was the icon-design process. I had to learned that making the client happy sometimes means designing something that doesn't look as good. Case in point: the founder wanted a 1990's style of mockup for the potential investors and I was able to deliver it as he wanted, but I was cringing inside. The good news is that they were a hit with the investors, the founder clearly knew what their preference would be, but the bad news is I couldn't face looking at them (however, the most recent round of wireframes are much better).

On a more technical level, the challenges the team faced with testing had to do with enabling smart phones to quickly report the biological conditions of produce and other biological matter by providing RGB ratios of the inspected ratios. Each phone model configures their camera slightly different. In addition, lighting in grocery stores (or warehouses) is not consistent. All of these factors impact the data from the photo unless the technology is configured to account for that. To account for consistent lighting, our latest round of testing involved taking photos of produce over time, with the pictures taken in a "black box" for the sake of consistency, and two different models of Android phones for comparison.

The scope of the project has changed and due to the new findings with the technology, it keeps expanding, so in order to secure a second round of funding this next phase of Poma will need to zero in and commit to a reasonable scope for the time being.