



CS3216 Group 7

User Centred Design & Customer Contact Report

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#1 Preparation

Step 1: Big Idea / Concept

What is your big idea? A big idea that can be launched in the market like for eg. a new clothing website etc. Write down a unique name of your big idea of a product/services and what is it about.

Unique Name: BigSpoon

Idea: Personal Waiter on the Mobile Phone.

Allow customers to get their orders to the restaurant immediately without the frustration of trying to grab the attention of the waiter and waiting for a waiter to take their orders. It is to allow instant gratification.

Allow restaurants to receive orders seamlessly and reduce the number of waiters they need to hire for taking orders. Provides a full-fledged restaurant ordering, inventory, and analytics system

The goal is to:

- Reduce manpower required and hence costs.
- Increase productivity for existing manpower.
- Increase satisfaction of the customers.

Step 2: Target User/User Persona

Identify your target user. Target users can be anyone of any age, gender or status. Talking to the user about your new idea helps gathering feedback. Write down who is your target user for this new idea and talk to them to gather feedback.

There are 2 target users. The restaurant manager and the customer. There is also a target beneficiary, the restaurant owner.

The restaurant owner has received complaints from customers about the waiting time, especially during peak hours. He wants to reduce the waiting time and it will require the hiring of more waiters, but he does not have the money to do so. It is also difficult for him to hire extra waiters for only the few hours during the peak hours.

The restaurant manager is a 38 year old employee of a restaurant who is used to taking orders from pieces of paper that waiters pass to him.

The customer is a 27 year old white collar worker who visits restaurants during the peak hours.

He faces long waiting times between sitting down at a table in the restaurant to having a waiter take the order from him. He often has to try and get the waiter's attention for the

waiter to take his orders.

He also faces long waiting times between having his order taken and receiving the food.

He also notices that the waiter walks around to a few other tables before passing all the orders to the kitchen, because other customers also called for the waiter to make requests for things like water, napkins.

Step 3: Collecting Feedback

Talking to your users helps giving a boarder idea about your idea being introduced to the market. Talk to your users and write down their feedbacks.

These are the findings after 12 restaurants were contacted and pitched the idea.

The restaurant owners liked the fact that people can order on their own, which can help them save manpower costs and also avoid frustrations that the waiters currently face.

Very often, the waiters are busy and have a lot of things to do. At the same time, they often have many people raising their hands. Frustration of the waiter. A lot of things to do, so many people raising hands. Get flustered.

They would also love to have information on the diners. A CRM of the diners.

However, they are not sure that the app can be incorporated into their operations, because it involves changing their processes. It will be unfamiliar territory.

There are also some restaurants that want the waiters to take the order. Hence, they are hesitant to use the app in their operations.

Step 4: Content/Requirement

Based on written feedbacks from the user, what kinds of products/services do you wish to offer with your new idea in the market? List it down.

Refine your user persona if required based on the feedback gathered

Many of the restaurants have an existing process of taking orders: (1) customers try to get the attention of the waiters, (2) the waiters take orders on paper and (3) the paper order is then keyed into to their existing POS system.

Their existing POS systems often cost a considerable amount of money and they are unwilling to change them.

Given the circumstances of the restaurants as well as the duration of this project, our aim is to replace the first 2 parts of the process, where customers flag waiters and waiters take the orders.

This is to enable us to focus on refining the apps serving those processes, to allow BigSpoon to scale to the maximum possible number of restaurants in the given timeframe available for the project, because there will not be sufficient time to integrate with the individual POS systems of each and every restaurant.

As such, we have decided to offer a web app made for the tablet for the restaurant owner, and a mobile app for smartphones for the customers.

The mobile app will allow customers to send orders to the restaurant if they are within the vicinity of the restaurant.

The tablet app will allow the restaurant manager to do 4 things. (1) He can view the list of new orders that he has yet to key into the POS system, which replaces the pieces of paper that the waiters give him.

Refining of Persona

We are adding one more Persona. The waiter. He is a 25 year old employee of the restaurant who struggles to handle the overwhelming number of customer requests, and gets frustrated as a result of that.

#2 Design

Step 1: Visualization/Rough Diagram

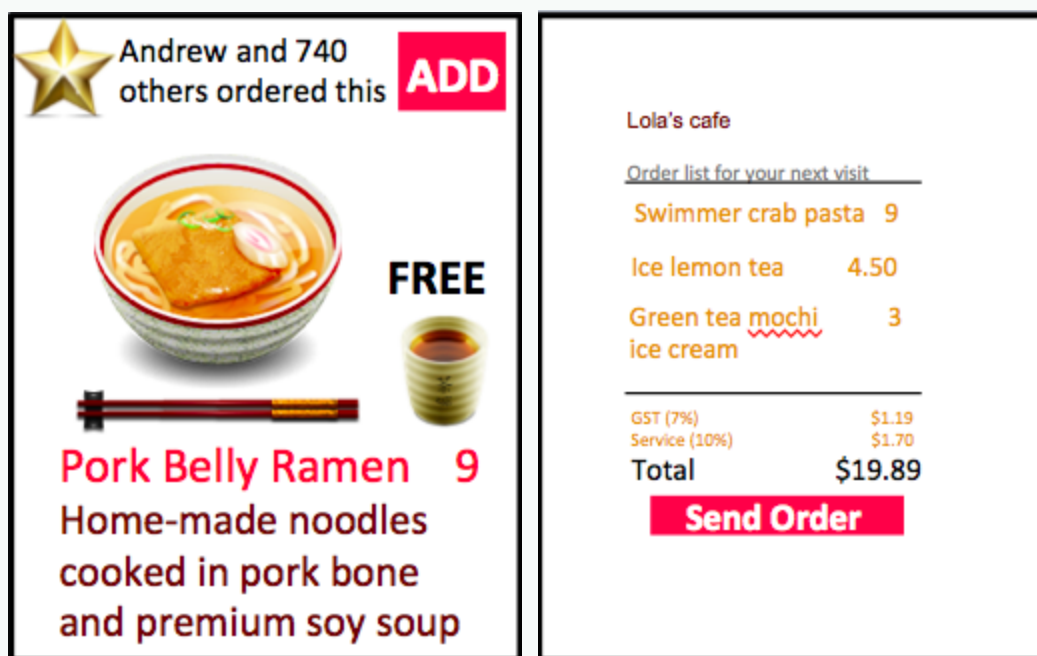
Take a separate paper and illustrate rough mockups in a flow. The mockups should suit your target audience according to their feedbacks. Make sure they're not polished as they're just the initial stages of the design which will gradually improve.

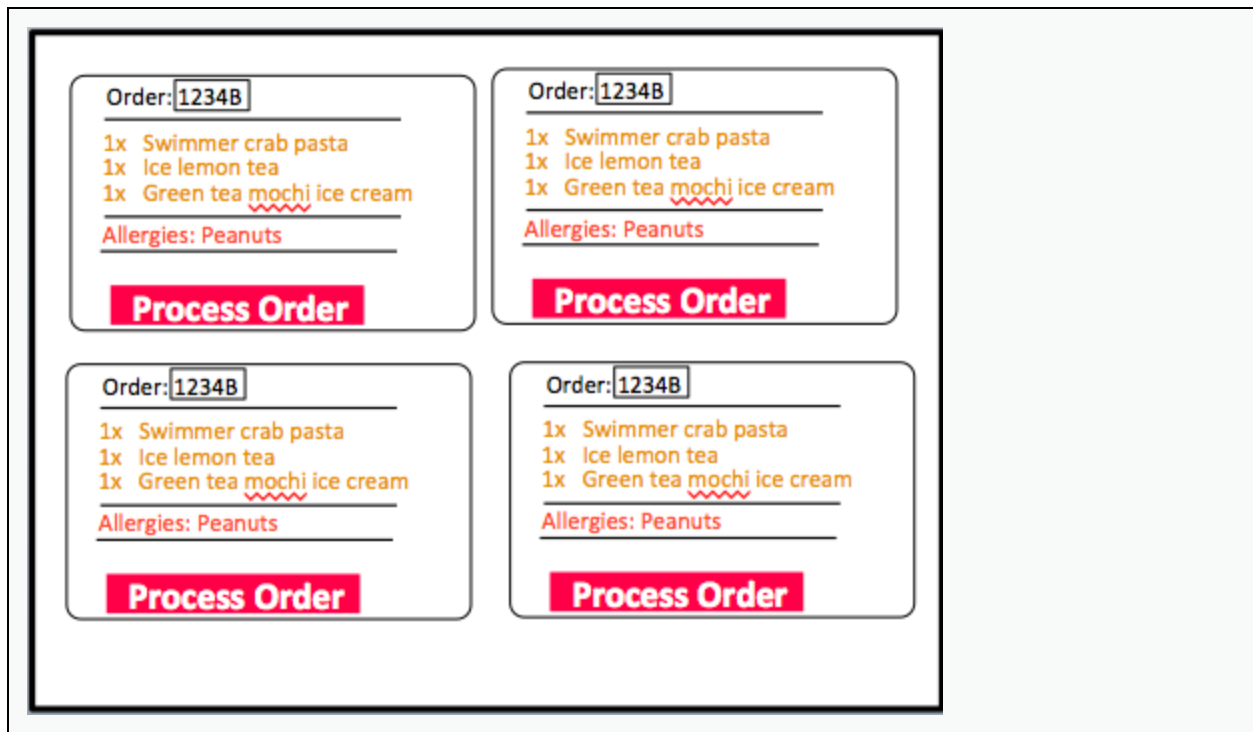
Done

Step 2: Wireframes

After understanding the flow of your sketches, illustrate them in wireframes. Make sure that the target users can understand them during the "Wizard of Oz Prototyping".

Our Input:





Step 3: Prototyping

Conduct the wizard of oz prototyping to the target users, and gather their feedbacks. Make sure the data you will gather should help making the UI/UX better for the users.

Details of Customer Contact

Number of customers met:

- 3 customers matching the personas of Diner, Restaurant Owner, Waiter

When and where:

- 27 September, at Lola's cafe

Summary of findings:

- The idea of indication of the total is a good feature. It helps them calculate how much they are spending.
- Order and Request should be both sorted by waiting time. That's how restaurants work.
- Each card should include customer information.
- Each view is not clear enough of what is shown, maybe add some help text.

Step 4: Gathering Feedback

Feedback is essential if you want your design to be successful in the market. Gather the data from the users and note down the features that can be added or removed to your wireframes.

On top of just having order details, it will be helpful to have an indication of the waiting time that the customer has endured since placing the order, so that the restaurant manager can know whether he needs to make the service faster to provide a pleasant dining experience.

If the waiting time is over a certain time limit, the color of the indicator should turn red. This will allow a more attention-seeking indicator that can better alert the restaurant manager.

We were thinking about the types of restaurants that would be the customers and felt that the time limit threshold, should be set by the individual restaurant because various restaurants have different settings, ambiance and requirements for customer satisfaction.

Step 5: Polish Your Work

It's time to make your wireframes better. A good design visual is essential for successful communication to the user. Think according to the users feedback on how you want to implement the designs on your wireframes. Write down what are the colors and theme will you use and why.

We have chosen to use white as the background color, which is neutral and most versatile with fitting with the various different colors that the many different food or restaurant themes may have. It is also does not take away too much attention from the colors in the food.

For the indicators, we have chosen the colors green and red.

For the buttons, we have chosen blue as that is the standard color for a positive input.



Step 6: Test Again

Same as before, after completing polishing your wireframes and design, go out and work on gathering feedback from the users by using the “Wizard of Oz Prototyping”. Write down your new feedbacks.

Details of Customer Contact**Number of customers met:**

- A Restaurant Manager and a Waiter

When and where:

- 4 October, at Lola’s cafe

Summary of findings:

- Should allow some way for restaurant manager to see the orders that each table has made.
- A report page with tables and graph charts may be useful.

#3 Implementation

**Step 7: Polish Again &
Step 8: Implementation**

Repeat polishing your work after gathering feedback to improve your design and UI/UX. How many times have you repeatedly gathered feedback and improved your mockups?

Start implementation and developing a working prototype that users can use. This step is taken after making the final improvements on the mockup designs as well as the UI/UX.

Repeat the steps over and over with different people until you have truly valuable and useful product for your target users.

Details of Additional Customer Contacts and Improvements that We Made**Customer Contact #1****Number of customers met:**

- A Restaurant Manager and a Waiter

When and where:

- 22 October, at Lola’s Cafe

Summary of findings:

- Lack of feedback when adding/updating menu items
- Diner application dish order button is not easy to click
- Text of dish and restaurant information was cut off due to length

Improvements we made:

- Feedback is given with a message when menu items are changed.
- The order button was made bigger, to match the finger size.
- We made the information area scrollable.

Customer Contact #2 (Consultation with Colin and Kaizhi)**Number of customers met:**

- Colin and Kaizhi

When and where:

- 23 October, at NUS

Summary of findings:

- Restaurant should have full control of Menu Updating, such as categories, even though admin part of adding dishes is going to be handled by BigSpoon initially.
- Avoid developing an app that's customized to one restaurant.

Improvements we made:

- Added all the possible fields that the restaurant manager would need to edit.
- We wanted to speak to other restaurants but BigSpoon's Jay has only met most of the restaurants once and he is somewhat uncomfortable with having us do a live demo and ask the restaurant owner for feedback on a second meeting.

Customer Contact #3**Number of customers met:**

- Qiao Liang as Restaurant Manager

When and where:

- 24 October, at NUS

Summary of findings:

- Menu is extremely long and uncomfortable to view as the forms are all fully expanded, do some basic collapsible element which makes it much easier to find the item you're looking for (even worse to navigate on mobile).
- New staff may find themselves lost in terms of what each page does.
- Menu page performance is sub-par

Improvements we made:

- A search and filtering system is added to the menu system.
- Tutorial messages outlining what each page does.
- We refactored the menu page code, using AJAX as opposed to default django formsets, improving performance significantly
- A long list of UI improvements

Customer Contact #4**Number of customers met:**

- Qiao Liang as Restaurant Manager

When and where:

- 31 October, at NUS

Summary of findings:

- The order cards should indicate the diner's profile and allergies.
- Sometimes, the restaurant manager may not be around the Restaurant Management App when a new order or request is made. Hence, we decided that we should add a sound notification so that the manager can hear it from a distance away.

Improvements we made:

- We added a clickable link to the profile.
- We added a sound notification to let the staff know whenever a new order has been placed.

Customer Contact #5 (Class Presentation)**Number of customers met:**

- 45 Classmates

When and where:

- 4 November, at SoC, NUS

Summary of findings:

- The diner may accidentally click on the plus button. He will not be able to remove the items in that case.
- Some people may decide to abuse the app and create trouble for the restaurant.

Improvements we made:

- We decided to add a notification on the other tabs as well.
- We initially thought of a few solutions, such as geolocation, one time password at signup, table ID and a physical QR code.
- But we dropped QR code later because it was too troublesome for diners to use.
- After further discussion, we decided to take this approach.
 - When the diner signs up, we send one time password (OTP) to the user's mobile phone. So that the diner is trackable.
 - When the diner orders meal, we use get-location to detect the diner's location. The diner needs to input the table ID. If the diner is not at the restaurant, the diner is not able to place any order.
 - If the diner maliciously placed too many orders, he/she can be trackable by the phone number provided during sign up.
- However, as the solutions are not 100% foolproof (eg troublemaker can stand outside restaurant to make fake orders, or go inside restaurant to make order and

then run off), we will also advise the restaurant manager to make a quick visual inspection. This is because the restaurants we are serving are small enough for all its tables to be inspected by the manager in just one glance. That would be the most foolproof way until further technological advances. We also gave the manager with the ability to check on the diner's profile, which can help him verify whether the diner who made the order is a regular customer or a suspicious person.

Customer Contact #6

Number of customers met:

- A Restaurant Manager

When and where:

- 5 November, at Lola's Cafe

Summary of findings:

- We had a short meeting with the owner of Lola's Cafe
- We demonstrated the app at that stage
- The owner was quite happy to see the progress

Customer Contact #7 (Consultation with Colin and Su Yuen)

Number of customers met:

- Colin as the Restaurant Manager and Su Yuen as the Diner

When and where:

- 13 November, at NUS

Summary of findings:

- The restaurant manager may also be viewing another tab other than the "Home" tab when the new order is made and may not see the new order appearing.
- Diner need to know the status of the order in real time as well. For example, there should be some feedback in the iOS app when the order/request is processed by the restaurant staff . Otherwise, the diner gets confused.

Improvements we made:

- We decided to add a Facebook-style notifications on top of sound notifications for the other tabs of the Restaurant Management app as well.
- Diner now get an instantaneous feedback when the restaurant manager clicks to acknowledge the order.

Customer Contact #8

Number of customers met:

- A Restaurant Manager

When and where:

- 15 November, at Lola's Cafe

Summary of findings:

- The name of the first page that listed all new orders, Home, didn't make sense.
- The order cards in Home looked gaudy and very cluttered.

Improvements we made:

- Home was changed to "New Orders".
- We revamped the color scheme and various sizes of the New Orders page.
- Removed the huge blue acknowledge button that looked as if it was the top tab portion of another order card.
- Changed green table cells of the Paid/Unpaid Indicator to a very light shade of teal, so that it stands out less.
- Made background of page grey so that white card is clearly defined.

Customer Contact #9**Number of customers met:**

- Qiao Liang

When and where:

- 16 November, at N-House, Prince George's' Park Residences

Summary of findings:

Qiao Liang gave us some feedback on the iOS app. All changes are implemented.

- There should be a discount info bar in outlet list
- There should be button click effect on the 4 tabs on top and the 4 tabs at the bottom
- Should display Menu list properly:
 - info shouldn't get cropped
 - price should not get cropped
 - no need to be 2 digit precision, one digit will do
 - no need to show dollar sign ("\$\$") at the menu page
- Plus button a bit too big and not nice: for both list view and menu. Consider changing the buttons.
- Consider font awesome to give the app a better UI.
- Water popup a bit too greyish. button not nice, ok colour too bright. Need to change the color scheme.
- Item View: similarly, +/- button too, "place order" button too bright
- Need to add Logout button.
- Fix the orientation support: the app should support only portrait mode.

Customer Contact #10 (After Steps Showcase)**Number of customers met:**

- Qiao Liang

When and where:

- 21 November, at N-House, Prince George's' Park Residences

Summary of findings:

Qiao Liang gave us some feedback on the iOS app. We will implement these fixes in the coming couple of days.

- Some typos in headings
- The dish category button pane looks cramped, fatter fingers cannot press. Need to put more space before and after the word and make the header horizontally scrollable.
- Some mis-align issue in the menu table view.
- Footer bar should be made less translucent as it overlaps text of menu items.
- Under "Request Water":
 - "Okay" and "Cancel" buttons should switch places (i.e. "Okay" on the bottom right)
- Under "Orders":
 - "Place Order" button is too small and too close to the "Add notes" text box
 - "Add notes" text box should also be aligned to the left, not placed centrally
 - Typo in "Add notes" prompt: it should be "no peanuts".
- Feedback form:
 - When I enter my feedback, the keyboard covers the text box
 - There should be an acknowledgment after I submit my feedback, like, "Thank you, as a valued customer, your feedback is important to us and we will take it into consideration."
- Under "Settings"
 - No Order History recorded despite ordering and asking for the bill
- Under "Profile":
 - Favourite Items > Should not be clickable and be able to type in it
 - Facebook profile picture is stretched horizontally and is pixellated
- User should be able to log in using the facebook button. Now user can only sign up using facebook, but subsequent log in can only be done through typing in username and password, not through facebook

Final Improvements

We made a number of final changes to improve on the design.

In this final design, we have a very clean interface, with white and grey backgrounds that match the blue and green buttons well.

Here's a screenshot of the iOS app at the current stage:

