

Interactive Coffee Vending Machine

Advanced Human Interface Design 2016

Author

HSRW

M. Sc. Usability Engineering

Pimchanok Sripraphan 20982

pimchanok.cmu@gmail.com

List of Figures

Figure 1:	Nico Dworrak interview	3
Figure 2:	Remi Sultan interview	4
Figure 3:	Let your table take your order (Pizza Hut, 2014)	5
Figure 4:	Greeting and suggesting coffee interface	6
Figure 5:	Design your own coffee interface	7
Figure 6:	Coffee menu interface	8
Figure 7:	Real-time pricing	9
Figure 8.1:	Flow chart - part 1	10
Figure 8.2:	Flow chart - part 2	11
Figure 8.3:	Flow chart - part 3	12
Figure 9:	Persona - Jonathan Schroth	13

Abstract

This document describes and illustrates the idea of Interactive Coffee Vending Machine for Advanced Human Interface Design course. The idea points out problems and relationship between human and the current Coffee Vending Machine. Also, defines goals, Inspirations and explains how the system works.

Introduction

“Even bad coffee is better than no coffee at all.” — David Lynch.

Coffee has become an important part in most people’s life. Nowadays, they tend to use coffee not just to drink but also as a medium to connect, interact and socialize with others. Drinking coffee in the morning to be fresh and get the day started. Drinking coffee at work place not only to stay awake and energetic, but also to socialize with people. Drinking coffee to relax from all the stress they may have.

Coffee vending machines are acceptable and widely used in many countries. They are usually placed in a public places where people can easily reach. However, many people still choose to go to cafes instead because of the variety of choices, good atmosphere and they can actually interact with others there. Meanwhile, Coffee vending machines only let them order within limited options and hardly ever make them feel comfortable buying coffee from the machine. This new Interactive Coffee Vending Machine will allow people to have variety coffee options, to be creative, to interact and to feel it is worth the money they are spending.

Current Coffee Vending Machine

Interviews

Nico Dworrak, a 19-year-old Chemical Technician who usually drinks coffee at his work place in order to stay awake and socialize with his colleagues. He mostly drinks quick and simple coffee like Espresso but also would love to have something fancy like Frappuccino. He expects nothing too expensive but also not too low in quality from the machine. However, he would prefer going to a cafe with a real barista to talk or interact with.



Figure 1: Nico Dworrak interview

Remi Sultan, 23-year-old Software Developer, got influenced by his family and friends to drink coffee and now it has become a part of his life. However, he has mentioned problems and things he does not like about Coffee Vending Machine such as less options are provided, when he had no small money to buy a coffee from the machine etc. Less options problem is the main reason why he only uses Coffee Vending Machine only when he is in a hurry, because he does not have to think too much. Customization is the ability he wants to have in buying a coffee most. As he said "Everything should be an option, like choosing toppings on a pizza." In addition, he would feel better to use cups that are not going to harm the environment.

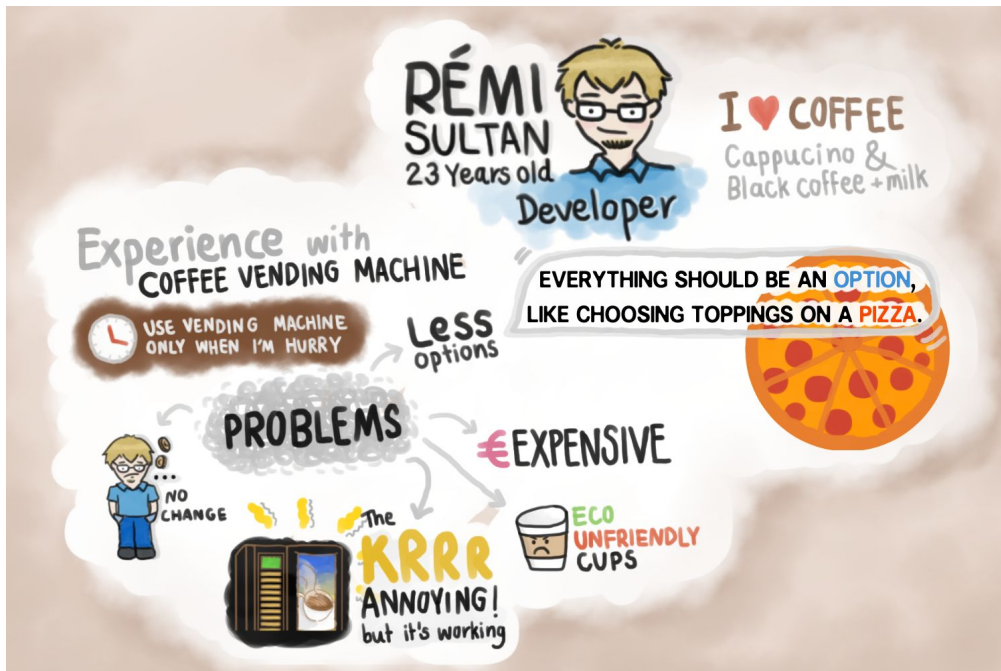


Figure 2: Remi Sultan interview

Issues

- Excessive price
- Limited options
- Absent of small money
- Unpleasant interaction
- Producing waste for environment

Motivation & Inspiration

“Everything should be an option, like choosing toppings on a pizza.”

– Remi Sultan

Remi, my second interviewee, had given me an interview and his speech inspired me to think about how pizza provides people an ability to customize on their own.

Let your table take your order

A famous pizza company, Pizza Hut, has created a new technology to improve customer experience in ordering process. It allows customers to design their own pizza by dragging and dropping toppings on it just from their fingers tip. Moreover, by just placing their phones on the table, users will be recognized by the system and able to pay via credit card. Also, users can play games from the device while waiting for the ordered pizza.



Figure 3: Let your table take your order (Pizza Hut, 2014)

Goals

- More human-like interaction between the machine and users
- Provide more options or ability to customize coffee
- Allowing users to be aware of pricing
- Provide more payment options
- Help and motivate users to care more about environment

The Interactive Coffee Vending Machine

Stress Level Detection and Greeting/Thank you Message – Recognizing people and be friendly like a barista

Isn't it feel good when you get a nice greeting in the morning, or when somebody tries to make you feel better when you are in a bad mood? This Interactive Coffee Vending Machine will not only greet you every time you standing in front of it, but also detect the your mood and suggest several coffee menus just for you in that particular time.

"Good morning! What coffee would you like to have today?"

"Oh, you seem tired. Try this. It will definitely keep you awake!"

And obviously, a thank you message every time the purchase is done.



Figure 4: Greeting and suggesting coffee interface

Design your own coffee - like choosing toppings on a pizza.

The Interactive Coffee Vending Machine allows you to have unlimited creativity towards your coffee. Design one by dragging and dropping ingredients and toppings you like into your virtual cup. You can undo or restart the process anytime something goes wrong. Moreover, you can also save your marvelous recipe in the system for the next time or share it with others.



Figure 5: Design your own coffee interface

Got no time to design? – Check out our and other people’s menus

Do not worry if you are in a hurry and appreciate the fact that there’s no need to think much but just pick the coffee you like. There are plenty of choices provided just like the same old coffee vending machine. Also, you can explore bizarre coffee menus other people have designed.



Figure 6: Coffee menu interface

Real-time pricing

It would be terrible if at the end you realize your coffee is more expensive than you have expected because you enjoy putting toppings too much. Real-time pricing will help you keep track of the price every time you add an ingredient. The system also allows you to undo the previous action in case you would like to control your budget. Moreover, to solve the small money problem, you can pay your coffee with your credit card.



Figure 7: Real-time pricing

Bring your own cup, or pay.

This idea is raised to encourage people to reduce waste for the environment by using their own cup. Otherwise, there will be cups that made from eco friendly elements provided for them to purchase.

How it works

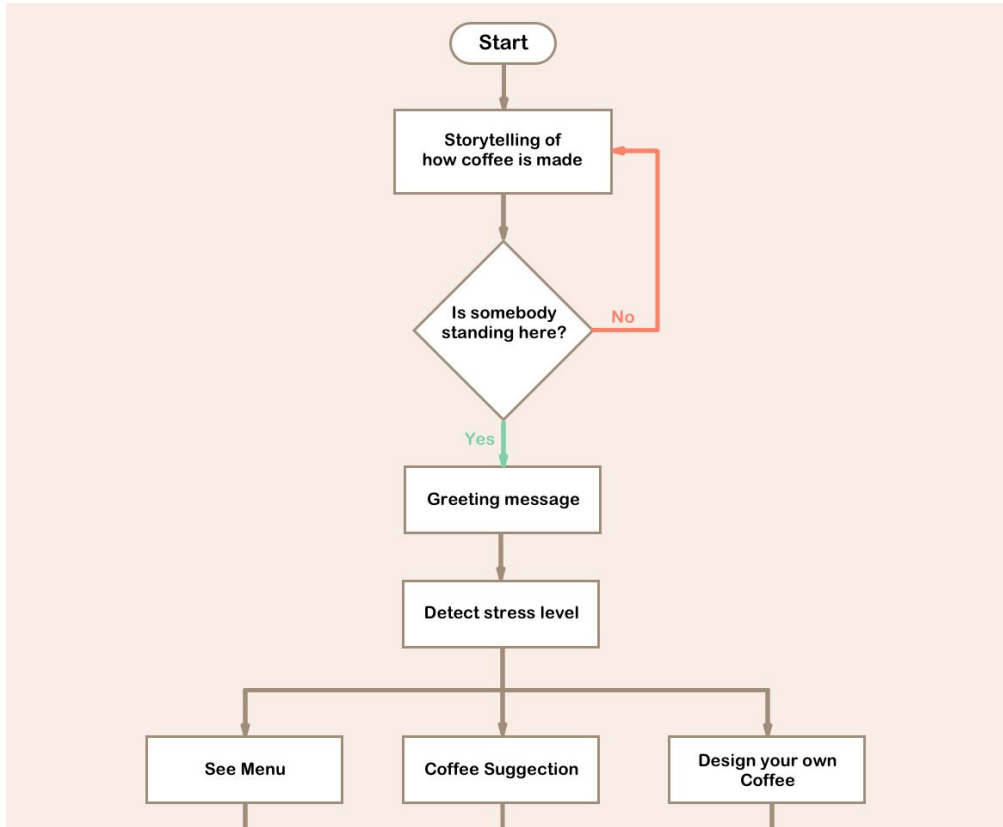


Figure 8.1:Flow chart - part 1

The Interactive Coffee Vending Machine will approach people by having a media eg. videos of how coffee is made in order to catch people's attention. When somebody stands in front of the machine, it will display greeting message according to the time of the day and at the same time detect the person including the stress level that person is having. After the system analyze information perceived, it will provide coffee suggestion according to the stress level. Rather than providing those suggestions, there will be two more options for the user to choose, which are "See Menu" and "Design your own Coffee"

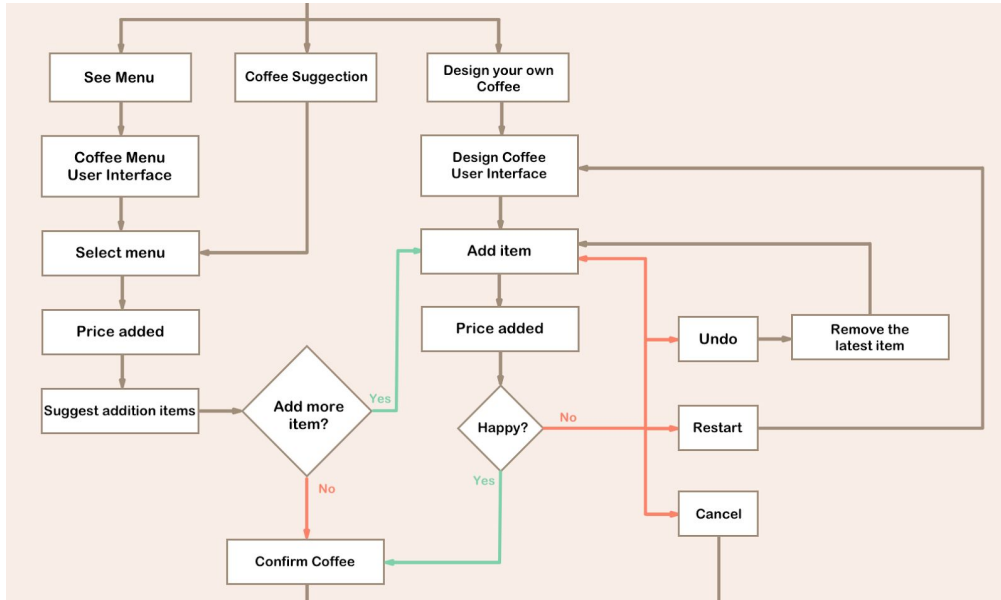


Figure 8.2: Flow chart - part 2

When the user select “Design your own Coffee”, the system will provide an interface with an empty coffee cup in the middle and various ingredients for the user to design. The price will be added automatically every time the user add an ingredient, on the other hand will be subtracted if the user undo the action. After the design is finished and confirmed, the user will be asked to weather he/she wants to save this recipe to the system and share with other people or not. Meanwhile, if the user select “See Menu”, the system will show list of different coffee options including ones people have designed and shared.

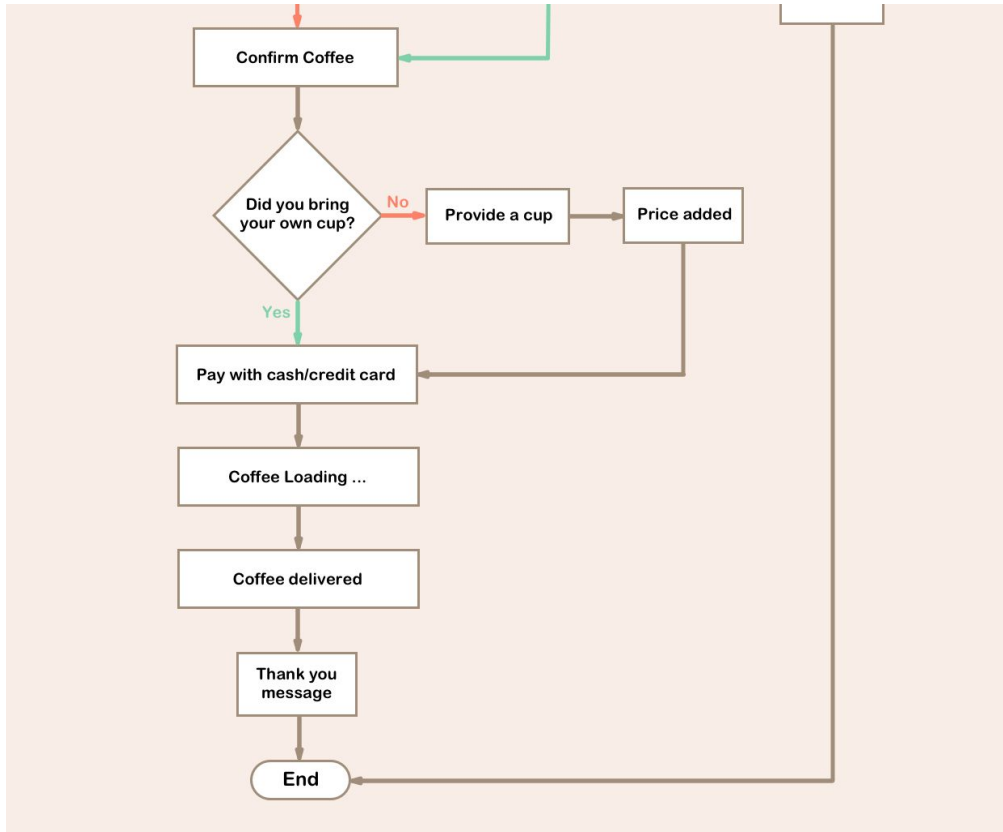


Figure 8.3: Flow chart - part 3

Then, after confirming the coffee, the system will ask whether the use has brought his/her own cup or not. If not, the system will unlock the channel that contains eco-friendly cups for the user to get one, and the price will be added. After that, there will be an indicator around the payment area to notify the user that he/she has to pay. The user can either pay with cash or credit card. While coffee is being prepared, the system displays and interface showing that the coffee is preparing with a minimum noise. And finally display a thank you message after the coffee is delivered.

Scenarios

Persona: Jonathan Schroth



Figure 9: Persona - Jonathan Schroth

Background: Jonathan is a 21-year-old German volunteer teacher living in Thailand who loves spending his energy exploring new places and socialize outside. Unfortunately, he does not earn from his current teaching job and money is quite an important factor to do what he loves, travelling. For this reason, he optimizes his skills and work as a part-time photographer and graphic designer. Opportunely, since his works have gone viral online, he got a big project that worth his effort to complete within only a week. Coffee is always the first thing comes into his mind when he wakes up. He usually go to a store called "Seven-Eleven" to get his black coffee every morning. He is bored of black coffee but he does not have many choices. He prefers having fancy coffee in a café. He likes to go there, work, relax and appreciate different kind of coffee. Since he is a lightweight traveller, he prefers carrying only his credit card rather than cash. He hates it when he cannot find an ATM to withdraw cash.

Scenario 1

Task: Design your own coffee with real-time pricing

It is the first day of his designing project. He woke up in a warm beautiful morning. He is excited and motivated to be creative. Later, he goes out to get himself a morning coffee as usual. However, this morning is unusual. He found a big Coffee Vending Machine in front of Seven-Eleven. He got attracted by an animation playing on the machine showing how coffee are made, which is what he unconsciously has always wanted to know. One step closer to the machine and suddenly a message appears, "Good morning! What would you like to have this morning?" He got surprised and begins to look all over the screen. "Design your own coffee. That sounds fun!" said Jonathan. He chooses this option by touching the screen and the system brings him to the design coffee page. He notices that there is an empty cup in the middle, and ingredients and toppings provided. An indicator appears to approach him to drag each ingredients or toppings in to the cup.

"Ummm, a shot of espresso and milk seems good. Okay, 1,00 euro, I can pay. Ummm, what if I add one more shot of espresso and caramel sauce on top ... 2,5 euros!? That's too much ... I'll undo that!"

The system undo his latest action and the price goes back to 1,00 euro.

Then he confirms his coffee to the system.

"Would you want to save your recipe and share with other people?" asked by the machine.

"Yes, why not. My coffee is awesome, people would love it!"

Therefore, not only Jonathan gets his own customized coffee, but also gets to share his creativity to other people who use the machine.

Scenario 2

Task: Did you bring your own cup?

After Jonathan is satisfied by his coffee design, he got asked by the machine whether he brought his own cup or not. Unfortunately, he did not bring it because he expected to get his coffee at Seven-Eleven and had no idea this awesomeness exists! Therefore, he answered no. Suddenly, the coffee cup door that was locked had opened and then he got his own eco-friendly cup.

Scenario 3

Task: No change, no worries.

“Oh crap, I have no small money and I don’t want to use my 100 euros banknote just for a 1,5 euros coffee...” said desperate Jonathan. Few seconds later, he realized there is an option to pay with his credit card, which will be so much convenient for him to pay. “Wow, this is cool. I don’t need my whole wallet but just my credit card to get a coffee!” said happy Jonathan.

Scenario 4

Task: You look so tired. I’d recommend you to have this!

His project goes on and on, and it’s now the fifth day. It seems to be more intense day by day. He has not been getting a good sleep since the last 3 nights. His alarm clock rings saying it is six in the morning. He is exhausted and walking just like a zombie. He grabs his credit card and key to the coffee vending machine again. As soon as he steps in, the machine immediately says “Good morning! Oh no, you seem really tired. Would you like to have Triple Espresso? I’m sure it will help you to be awake and energetic.” Jonathan was impressed because he would not have a brain to think or design a coffee at that moment. He accepts the recommendation and feel more awake again after the first zip.

Scenario 5

Task: I want a fancy coffee but I’m too lazy to think.

His project is finally done. It’s time for him to chill and relax again. He would love to get a nice coffee from the Coffee Vending Machine. Since he is a creative guy, normal things seem to be boring for him. In this case, he wants a fancy coffee. However, his brain is dead after his work, so he does not want to think much for just a coffee. This time he chooses to see all the menus that exists.

“Espresso, Americano, Latte ... sound so boring ...”

“Milky coffee, Schokoladen coffee, Thai coffee ... hahaha sound cool!”

Jonathan is having fun and excited exploring all the bizarre coffee menu people had made. Finally, chooses Schokoladen coffee because he likes chocolate and the name.

References

1. Pizza Hut. 2014. Let your table take your order. Retrieved June 1, 2016 from <http://blog.pizzahut.com/flavor-news/let-your-table-take-your-order/>
2. Abdul Hameed. 2014. Cool Pizza Hut concept table: Design your own Pizza and connect your iPhone [Picture]. Available from: <http://www.thegadgetcode.com/2014/03/pizza-hut-concept.html>. Viewed June 1, 2016.