Authors

- Nery Lara
- Angel Castro
- Jacky Zheng
- Sitao Chen
- Yuhao Zhang

Introduction

When a potential customer calls a business, the last thing they want is to be placed on hold. Everyone has had this experience and knows that it usually results in wasted time or hanging up before the hold is over. For the business this results in lost clients and a bad customer experience if people are left on hold for too long. This project aims to solve this terrible on-hold experience by providing a quick and easy way to have the business call the potential customer when they are ready and would eliminate this issue altogether. Our solution will eliminate the on-hold experience completely, which means customers could choose to hang up if they don't want to wait for a response and let the business call them back. We will setup a hosted service where a customer can call, hear a prompt, and hang up. We will also provide service to ask for a phone number to call. More specifically, we will use a cloud platform to deploy our application. We will be using Twilio or Freeswitch to help us connect the calls for business and customers.

Project Specifics

- Team goals/objectives
  - The project provides customers with a solution that enables them to hang up immediately if they would not like to wait for a long time. This eliminates the problem of frustrated customers due to long waits and reduces business losses due to callers hanging up and not calling back. Our goal is to minimize the customers' anger in this situation and help the businesses get back to them as soon as possible. For the customers who would like to wait, our stretch goal is to process their voice signal, detect what they like and provide them different ads and music based on the voice processing while they are waiting.
- Background

---

- ○ Most businesses still make people wait on hold if they are not able to answer the customers immediately. Some businesses place their customers on hold to complete silence or use the ubiquitous "your call is important to us" message.
  - ○ Customers are extremely unsatisfied by the long long waiting time.
- Assumptions
  - ○ Most customers do not want the on hold experience for wasting their time.
  - ○ Customers prefer business to call them back when they are available.
  - ○ Businesses do not want to take time to check customers' numbers and call back
  - ○ Business would lose their customers if they put their customers on hold.

System architecture overview
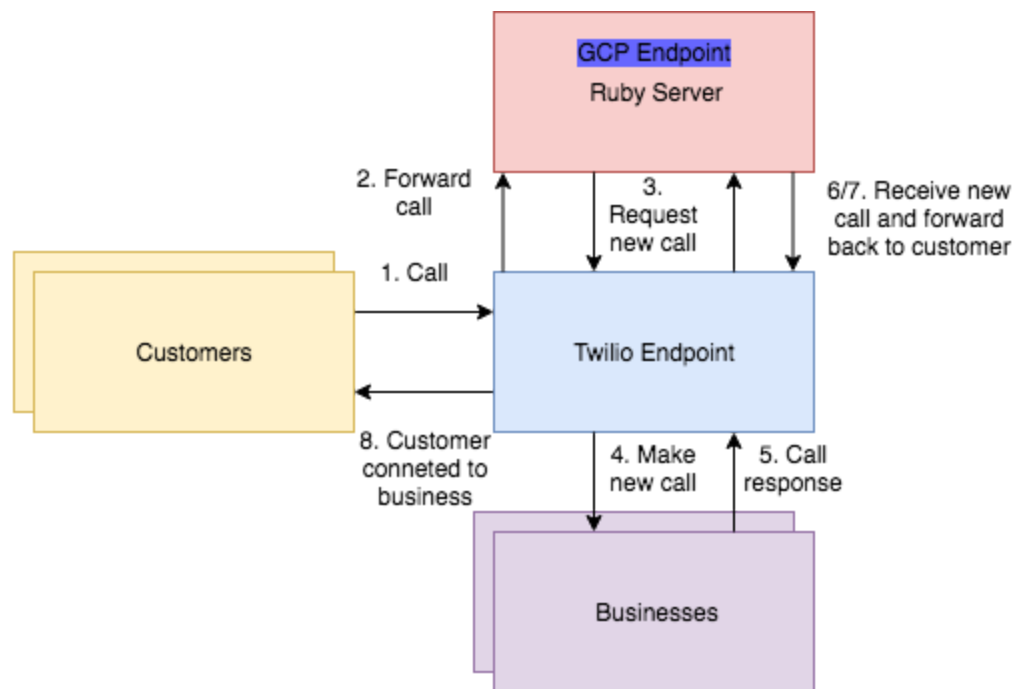
Non-Functional Requirements

- Performance
  - ○ The application shall call the company within N-seconds.

- ○ The application shall call the customer back within N-seconds after a business representative takes the call.
- Redundancy
  - ○ The application shall accommodate two failures without the user experiencing system failures.
- Scalability
  - ○ The application shall be able to scale horizontally to run N-copies of the application.
- Maintainability
  - ○ The application shall be developed using Test-Driven Development and a Continuous Integration Pipeline to run tests.
- Usability
  - ○ The application shall be usable by anyone with access to a phone line.

Functional Requirements

Use Cases

- Use Case
  - ○ Pre-condition
    - ■ user has phone readily available. User knows phone number for service ahead of time. User has phone number of business they want to contact
  - ○ Post-condition
    - ■ User is available to answer the call
  - ○ Case
    - ■ user calls phone number to access WaitForMe. WaitForMe asks the user for the number of the business they want to contact. User enters phone number into dialpad. WaitForMe tells user that they will be called back once they are connected with person from that business. When WaitForMe calls back, it informs the user that the business is on the line and directly connects the phone call with the user and the business.
  - ○ Success
    - ■ User is put in contact with the business
  - ○ Failure
    - ■ User is called back and notified that business was unavailable
  - ○ Github link: https://github.com/nery-lara/Waitforme/issues/1
- Use Case

- ○ Pre-condition
  - ■ User has an alexa product setup with voice activated.
- ○ Post-condition
  - ■ User is available to answer the call
- ○ Case
  - ■ Alexa sends request to WaitForMe. WaitForMe calls business and waits on hold until an agent answers. Then WaitForMe calls the user on their phone and connects the call.
- ○ Success
  - ■ User receives call from WaitForMe and is put in contact with business.
- ○ Failure
  - ■ User receives call from WaitForMe and is told that business was unavailable
- ○ Github link:https://github.com/nery-lara/Waitforme/issues/2

User stories

A user that wants to call a business does not have to wait on hold and deal with the phone call. Instead they are called back to directly speak with a person from that business

- ● As a WaitForMe user, i would like to call WaitForMe and be able to make a phone call request to a business.
  - ○ Github: https://github.com/nery-lara/Waitforme/commit/1ef3444a7a59764ac942b5290823a993d68a6bda
- ● As a WaitForMe user, I would like to be able to dial in the business phone number I would want to contact me.
  - ○ Github: https://github.com/nery-lara/Waitforme/commit/1ef3444a7a59764ac942b5290823a993d68a6bda
- ● WaitForMe, should be able to make a phone call request to a business
  - ○ Github: https://github.com/nery-lara/Waitforme/commit/556f266bbf61ab55f4ee7f3ba2af0eda3e541fd5
- ● WaitForMe, should be able to connect user with business
  - ○ Github: https://github.com/nery-lara/Waitforme/commit/556f266bbf61ab55f4ee7f3ba2af0eda3e541fd5
- ● WaitForMe, should be able to disconnect from the user's and business' call
  - ○ Github:

https://github.com/nery-lara/Waitforme/commit/556f266bbf61ab55f4ee7f3ba2af0e
da3e541fd5
- As a WaitForMe user, I would like to be notified if the business is unavailable.
  - Github issue:
    https://github.com/nery-lara/Waitforme/issues/4
- As a WaitForMe user, I would like to be called back by WaitForMe once the business is available.
  - Github issue:
    https://github.com/nery-lara/Waitforme/issues/5
- As a WaitForMe user, I would like to be able to request a call through alexa.
  - Github issue opened:
    https://github.com/nery-lara/Waitforme/issues/2

Appendices

- Technologies employed
  - Travis CI
  - Google Cloud Platform (App Engine)
  - Twilio
  - Ruby
  - Dockers