Google Maps

Proposal For: Current Restaurant Wait Time

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System Name: Google Maps

Abstract

Google Maps is an app that provides driving directions to users. Not only it provides driving directions, it also lists the length of time it will take to get to one's destination. Nearby restaurants are listed along the way. The problem is that it doesn't list the current restaurant wait time. I propose that adding a current restaurant wait time feature to the software will give the company a competitive advantage, save the customer's time, and provide all the needed information about the restaurant in one app.

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System Overview

Google Maps is an app that provides driving directions to users. Not only it provides driving directions, it also lists the length of time it will take to get to one's destination. Nearby restaurants are listed along the way.

The Problem

The problem is that it doesn't list the current restaurant wait time. Many people waste their time either calling the restaurant to find out the information, only to find out that most of the time, they are put on hold, or they travel to the restaurant to realize it is crowded, which wasted their time, gas money, and effort going to restaurant.

The Solution

Adding a current restaurant wait time feature to the software will give a competitive advantage, save the customer's time, and provide all the needed information about the restaurant in one app. People will also save gas money and effort on going to the restaurant.

Technical Section

Theory

Adding the new feature will make Google Maps more functional. The problem is that people don't know whether or not the restaurant is crowded at the moment. Adding the feature will be help people save time by letting them know how long is the current wait time is at the restaurant.

Benefits

There are three main benefits for including the feature.

1. Provides the company with a competitive advantage.

No other major company has this feature. "Through product innovation, companies are able to create new market and entry barriers, challenge market leaders and leapfrog competition [7]" (Edison). It is important to have product innovation. "But without innovation, the competitive advantage will decrease over time, and long-term productivity will drop to diminishing returns" (Gorschek).

2. Saves the customer's time.

People don't want to spend time calling the restaurant to know its current wait time. Many times, they would be placed on hold, which wastes even more time. As technology advances, there are more things to do like browsing on YouTube or chatting on a social media website. These things eat up more of one's time. Nowadays, people don't want to spend time on mundane tasks like calling a restaurant. "What is important and novel in the developed world is that time is increasingly **relatively** scarce" (Hamermesh). People don't want to deal with the traffic going to the restaurant. "Congestion has increased dramatically during the past 20 years in the 85 largest U.S. cities. During this time, the number of hours lost each year by an average driver to congestion has increased by 300%" (Haghani). If they took the time to go to the restaurant and find out that it is crowded, they have wasted time, gas money, and effort going over there.

3. Provides convenience to the user.

There is no need to open multiple apps. By adding this feature, all of the restaurant's needed information will be available to the customer. It will provide the customer information about the restaurant's reviews, driving directions, restaurant's meal price range, restaurant's hours of operation, and now including, restaurant's current wait time. This brings convenience to the customer. "With providing sufficient and convenience information through website, company can do lots of savings in customers valuable time. This action can attract lots of customer because customers neither want to waste their times searching in the website nor to be lost in difficulty which are existed in the web site. So attracting customers lead the company to gain better profit and it will help them gain success in e-commerce [22]" (Salehi). This convenience creates brand loyalty. "Brand experiences lead to brand loyalty, active referral of the brand and increased profitability for the brand (Morrison and Crane, 2007). Brand experiences encourage loyalty by creating emotional connections through an engaging, compelling and consistent context" (Sahin). More people will want to use Google Maps.

Feasibility

With the help from Project Team Lead of Google Maps, Jen Fitzpatrick, and a Ph.D. professor at University of California, Irvine, who specializes in machine learning, Erik Sudderth, implementing this project will be a moderately difficult task. Since Google Maps already have added restaurants, driving directions, and length of time it takes to get a destination, adding current restaurant wait time will be a minor update task to perform.

Market Size

According to IBIS World, software publishing is a $218.4 billion industry in 2017. In Figure 1 below, we can see that software publishing is the largest portion in software products development.

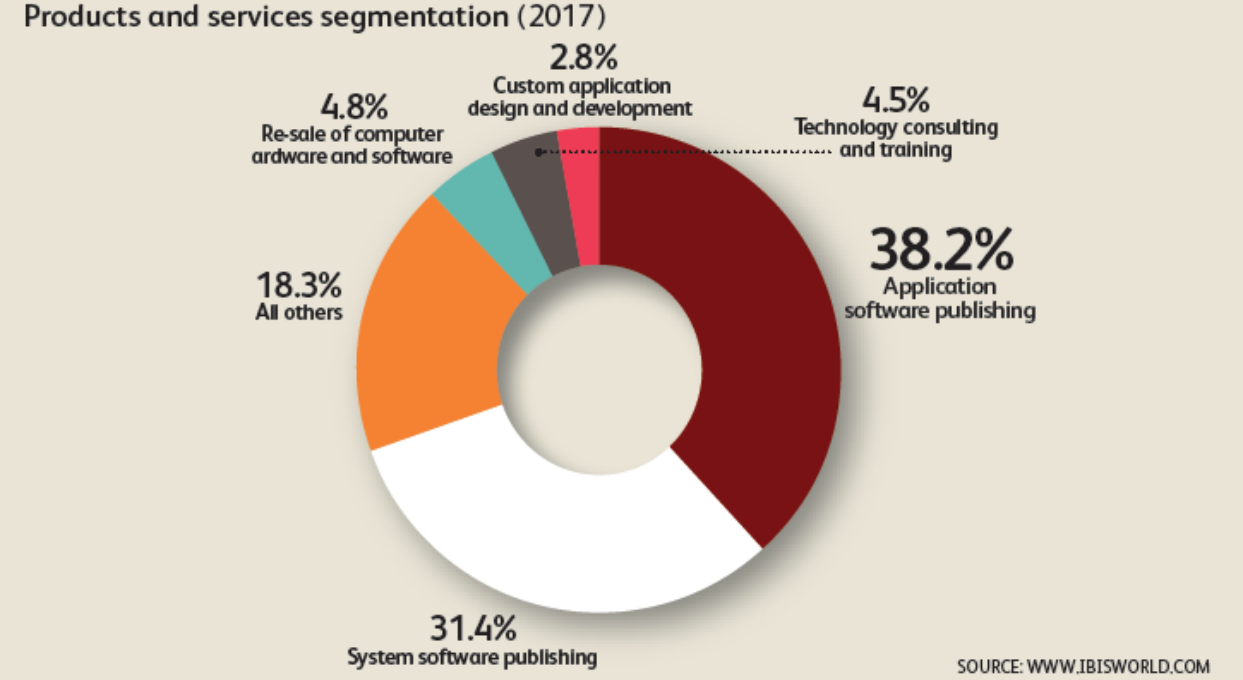

Figure 1 Software Publishing Chart

Method of Approach

Erik Sudderth, a UCI professor, will use statistical modeling to see how many customers are there at different times of the day in several similar type restaurants at once. Then after he found the customer flow trend, he will then determine how long the wait time is at different times of the day. The Project Team Lead of Google Maps, Jen Fitzpatrick will then implement Erik Sudderth's work into the Google Maps app. Figure 2 and Figure 3 show the mock-up of how the system would look like.

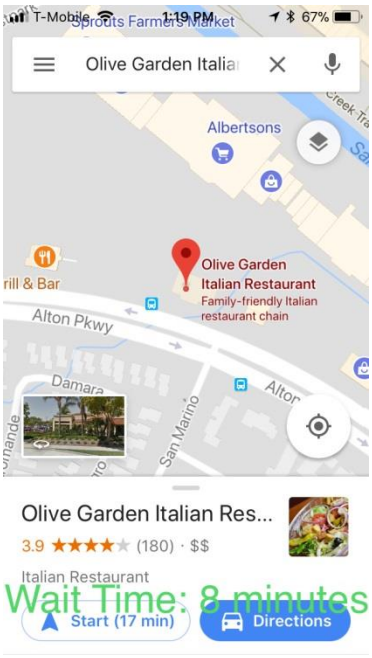

Figure 2 Mockup for current restaurant wait time on front page

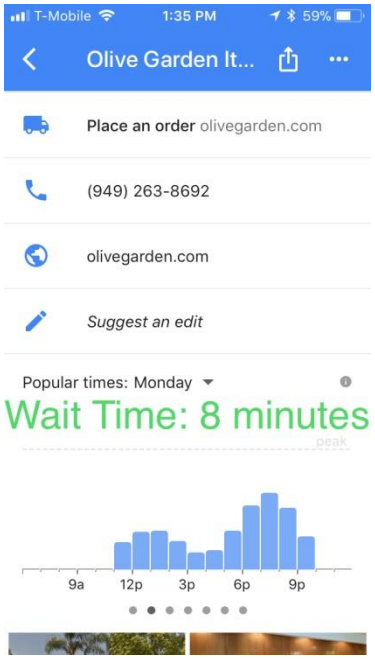

Figure 3 Mockup for current restaurant wait time inside the menu

The green font means a wait time of less than 15 minutes. The mustard yellow means a wait time of between 15 minutes and 30 minutes. The red color font means a wait time of 30 minutes or more.

Management Section

Team

Name	Organization	Qualifications
Erik Sudderth	UC Irvine	Ph.D. professor, who specializes in machine learning
Jen Fitzpatrick	Google	Project Team Lead of Google Maps

Figure 4 Table of Team Members

Erik Sudderth and Jen Fitzpatrick are qualified to perform the tasks of adding the feature. They have the experience to provide high quality work for this project.

Schedule

The project will take 12 weeks to complete. The project will follow an agile-development process. Figure 5 will provide the details on the stages of the development process and which team members are responsible for each stage.

Week	Phase	Description	Team Members
1	Planning	Plan out the process for adding the feature.	All team members
2	Modeling	Conduct the statistical work needed to implement the project.	Erik Sudderth and his team
3-5	Development, Implementation, and Integration	Software development of the update. Combines subprograms into one program. The project team checks whether the software product runs on various systems.	Erik Sudderth and Jen Fitzpatrick

6	Testing	Test the software for bugs and errors.	Jen Fitzpatrick and her team
7-8	Customer Response	A small user base of customers tests the software. The customers later provide user feedback.	Jen Fitzpatrick
9-10	Make Necessary Changes to the Software	Changes are made to the software according to the necessary customer feedback after the Customer Response phase.	Jen Fitzpatrick and her team
11-12	Testing	Final software testing before being released to the public.	Erik Sudderth and Jen Fitzpatrick

Figure 5 Project Schedule Table

Budget

According to Glassdoor.com, the project will cost $240,000. The team members will work a 40 hour work week. The figure below describes the details of the budget.

Position	Name	Hourly Salary	Total Salary (40 Hours/Week)
Data Scientist/Software Engineer	Erik Sudderth	$52.40	$109,000
Project Team Lead	Jen Fitzpatrick	$62.98	$131,000
Total			$240,000

Figure 6 Project Budget Table

Conclusion

Those are the main reasons for adding the feature. It will give a competitive advantage, save the customer's time, and provide all the needed information about the restaurant in one app. Google Maps will also be more functional. With adding this feature, Google Maps will benefit from it. I hope you find this feature to be a good idea.

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