

**Innovation in Information Systems
67-475, Fall 2017
Final Executive Summary Requirements**

In the final executive summary document, your team will describe the background and outcomes of your project. This document consists of two major parts: the project abstract, which must be 2 pages long (and no more than two pages) and the project report which should be 12 pages long. Please use the format listed in this document when you prepare the executive summary.

Cover Page



QatarHelp

28/11/2017

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CMUQ 67-475 Innovation in Information Systems
Fall 2017

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PROJECT ABSTRACT

(QatarHelp)

Student Team

(Talha Anees), (Ali Abbas), (Ali Jafar), (Mohammed Zakaria), (Muhsin Warfa)

Fall 2017

Background

Everyday people are always busy as they're going around with their lives and people in Qatar are not exception to that. Life can be tough and hectic sometimes. Time and money is limited for everyone and they have to make the best situation they can. Any sort of help can make a huge difference. Some people need to get certain tasks done in a limited amount of time. The problem is that not everyone knows who to call for the job or resources to do the task. Even if they do, the people they call are usually the big, well-known companies and these businesses may be overpriced. They are spending money which they might not have.

Apart from regular people, even small businesses are struggling to get more customers. Usually these small businesses aren't even competing with big businesses in Qatar. The reason is because not many people have heard of these small businesses which also means that they don't get enough customers. These businesses need to make some profit but they struggle to break through monopolies. This is a big problem for newcomers, new businesses just established in the market won't make profit any time soon.

QatarHelp is a web application where users can find skill taskers to run errands for them, making life convenient every day. The skill taskers can either be freelancers or local businesses who can get more customers. The platform will have both online and offline features. If someone wants a certain task done, they can post their request on the platform. This request can be anything and they can choose who can take on the requests.

Project Context and Problem Statement

As mentioned above, everyday people in Qatar are busy and they have a limited amount of money to spend. Receiving help from local businesses or freelancers and paying at a reasonable price can be beneficial to the user. Small local businesses can take on these users requests as they can gain more customers and break the monopoly. Freelancers, looking for jobs to make extra money can take on these user requests if they are qualified in the field.

Project Vision

The team's vision is to make users lives more convenient and beneficial. Creating QatarHelp and deploying it can help users to complete their tasks with the help of others for a small sum. As similar apps exist in and out of Qatar, the team figured out the flaws of each application or website and improved upon it. The team created an offline feature that will be implemented in near future which will be the main distinction from these similar applications. In addition, the

platform has competitive advantage by having all tasks combined in one place with more accountable and evaluation features.

Value Proposition and Business Model

The team has created a web application that follows a Business-to-Consumer and Consumer-to-Consumer business model since users are connecting with local businesses and regular people with certain expertise (freelancers). With multiple features and functionalities in QatarHelp, the team has provided many products and services that are mentioned briefly in the Project Solution and Outcomes below. As people go through many problems, QatarHelp can help solve these problems.

Project Solution and Outcomes

The web application involves two major user groups i.e. customers (that can be expats and locals) and service providers (local businesses and freelancers). While the customers post for a request, the service providers can place a bid on it and perform the task on behalf of the customers. As the chores are completed, the customers pay up the service providers where the platform receives 10% of every transaction. There are separate features for both these users i.e. look at previous requests, evaluate customers and businesses, the report will identify more features.

Project Deliverables

Final deliverables include this report that explains the entire project and what the team looked into. The web application (coded using Node JS, SQLite3, HTML and CSS) that is deployed on Heroku. The screencast that gives an overview of the problem and solution, and how QatarHelp is used from the customer and business point of view.

Student Development Team

Talha Anees served as the lead programmer. He is a senior majoring in Information Systems and will graduate in May 2018. He is looking for a career in networking and security.

Ali Abbas served as the project manager and a programmer as well. He is a senior majoring in Information Systems, minoring in Business and will graduate in May 2018. He is looking to further his studies in Human Computer Interaction in graduate school.

Ali Jafar served as the head of testing, documentation and created the showcase presentation every other week throughout the course. He is a senior majoring in Information Systems and will graduate in May 2018. He is looking for a career based in UI design.

Mohammed Zakaria served as the UI programmer and also created the showcase presentations every other week as well. He is a senior majoring in Information Systems, minoring in Business and will graduate in May 2018. He is looking for a career in Business & Data Analytics.

Muhsin Warfa served as software testing and documentation. He is a senior majoring in Information Systems and will graduate in 2018. He is looking for a career in full stack web development.

PROJECT REPORT

(QatarHelp)

1. Project background

Everyday people in Qatar are always busy as they're going around with their lives. Life can be tough and hectic sometimes. Time and money is limited for everyone and they have to make the best situation they can. Any sort of help can make a huge difference. Some people need to get certain tasks done in a limited amount of time. The problem is that not everyone knows who to call for the job. Even if they do, the people they call are usually the big, well-known companies and these businesses may be overpriced. They are spending money which they might not have.

Apart from regular people, even small businesses are struggling. Usually these small businesses aren't even competing with big businesses in Qatar. The reason is because not many people have heard of these small businesses which also means that they don't get enough customers. These businesses need to make some profit but they struggle to break through monopolies. This is a big problem for newcomers, new businesses just established in the market won't make profit any time soon.

QatarHelp is a web application where users can find skill taskers to run errands for them, making life convenient every day. The platform will have both online and offline features. If someone wants a certain task done, they can post their request on the platform. This request can be anything and they can choose who can take on the requests. As similar applications exist in and out of Qatar, the team have created an offline feature that hasn't been implemented before. This is the standout feature of the application that could be beneficial to users.

2. Solution overview

2.1 Innovation and market analysis

QatarLiving is a platform that considers the Consumer-to-Consumer model that is available in Qatar. This platform focuses on buying and selling used items in Qatar. A customer can post a question if they're looking for buying a certain second hand item or look through other users who are selling their personal items. Personal contact details are provided for each user to perform a transaction. As there are many advertisements on the platform, revenues are generated solely by viewing of these advertisements and featuring other promoted items. This platform doesn't provide any trading services, no authentication or validation for registered users so there is no sense of security. The biggest security risk is that a user's personal information is displayed to everyone using the platform. A major problem in the platform is that there are redundant and spam postings regularly, advertisements usually block the main features of the page.

Pick and Drop is a platform that considers the Consumer-to-Business model that is available in Qatar. This platform is a delivery service that focuses on delivering products from businesses to consumer's locations. Revenue is generated via consumer per transaction depending on their location and the magnitude of task. Transaction can only occur offline via phone call. This offline transaction requires manual data processing which makes it time consuming for the employees. The major problem is that to order a pickup or drop-up service, users have to fill out a form. The form itself is too vague, you select either 'Pick' or 'Drop' and provide your contact details. No field to explain what you want to deliver or drop off i.e. you can't explain the magnitude of your request.

Mashaweer is a platform that considers the Consumer-to-Business model that is available in Qatar. It is another delivery service platform that once again focuses on delivering products from businesses to consumer's locations. Revenue is once again generated via consumer per transaction depending on their location and the magnitude of task. Transaction can only occur online through the website or their mobile app so you need a credit card in order to use this company's services. The form again is vague and no field to explain what you want to deliver or drop off i.e. you can't explain the magnitude of your request.

Syaanh and *EasyQatar* are similar platforms that consider the Consumer-to-Business model that is available in Qatar. Both of these platforms provide handy services and house repairing services e.g. cleaning, pest control, carpentry, plumbing etc. Revenue is generated with every transaction a customer makes online and the magnitude of the task. A customer can select many different options when providing a request and the form is more explicit. But these platforms have a limited number of sectors or services and they're only available for companies with a business license. There are workers who specialize in this field that cannot be considered in these platforms. Another problem is that there is no web application, only a mobile app for these platforms. But there are two different apps i.e. one app for the clients and another for the companies which is peculiar.

TaskRabbit is a platform that considers the Consumer-to-Consumer model that is available in the USA. This platform almost any task but focuses mainly on handy services and transportation tasks. When posting your order online, the form is more explicit and specific. The downside is that you can only select a limited number of services, there is no 'other' sectors in the platform that the user can select. This platform connects users and freelancers in the USA but doesn't connect with any local businesses or service providers in the country. Only freelancers can take on other user's orders, not businesses.

Since the platform the team is creating is to find skilled taskers to run errands for them, the platform will be a web application with online and offline features. If someone wants a certain job done, they can post their request on the platform, this request can be anything. The team took initiative to incorporate these businesses within their platform but to add more value to it. The user is free to request any sort of request and this doesn't limit or restrict the number of services available in the platform.

The teams project innovation framework is *incremental*. As the team's platforms ideas have already been existed by other businesses, the team has decided to incorporate the businesses together. And they have identified the flaws with each of the businesses and this gave a better understanding of how the platform should be designed.

The projects innovation framework is also *disruptive*. Apart from bringing these businesses together and removing the flaws, the team have decided to use another feature that hasn't been used in the market (this feature will be explained into more depth in 3.3). As all these local platforms are focused on online, there are no platforms that are offline. So the team are planning to use an SMS feature. If the user wants a request for a service, they don't need to connect to the platform and go online via Wi-Fi. They can just type an SMS in this format [service you require], [Location], [Time], [Price] and send it to the platforms private number. For example, [Coffee, CMUQ Qatar Foundation, 4:30pm, QR20]. Having this offline feature can help many users with no Wi-Fi access and their request will still be approved.

Another aspect that makes the project a disruptive platform is its business process. As there is a Consumer-to-Business model process, the team is also developing a Customer-to-Customer model process. Regular users (freelancers) can use this platform as well. They can follow up on customers' requests which they think is viable. They can make extra money from looking at requests on this platform around the country.

2.2 Stakeholder and user requirements analysis

Newcomers or expats

- If a newcomer or an expat comes to Qatar for the first time, they are unaware of where they can find any service in Qatar and since they don't know anyone who can help, they look online for help.
- This platform can help them post their service request and they have the ability to connect with businesses and freelancers in Qatar.

Customers/Locals

- This group of people have been living in Qatar for several years but they're still unsure about certain services they need that could be convenient for them.
- This platform can once again help them post their service request online and they have the ability to connect with businesses and freelancers in Qatar.

Local Businesses

- Businesses that include Pick and Drop, Syaanh, EasyQatar, Mashaweer and other small local businesses in Qatar that are looking for new customers and want to compete in the market.
- They can connect to the platform and they can search for customers that are looking for services and take on these requests that are suitable to the businesses skills.

Freelancers

- This can be any person who is willing to take on requests from other users.
- They can connect to the platform and as they have a certain set of skills, they can take on a request which they think they are qualified for.
- But taking on these requests, these people are making extra cash for themselves.

Before developing the platform, the team had to do research if the idea of the project was feasible and relevant. For the newcomers/expats and customer's/locals user group, the team sent out a survey to all the students in CMUQ since there are many international students and locals on campus. (*See appendix for the surveys sent*). For the freelancer's user group, the team sent out another survey with a different set of questions. The team sent the surveys to locals in and out of campus to see if they would use the platform and take on some service requests. (*See appendix for the surveys sent*). The local businesses group, the team decided to interview a couple of local businesses. The team interviewed the managers of an electronic shop that sells products and repairs broken products, carpentry shop and a mechanic shop. See figure 3 to see the questions the team used for the interview.

For the newcomers/expats and customer's/locals survey, the team received 119 responses. For the freelancer's survey, the team receives 11 responses. For the local businesses, the team interviewed 3 different local businesses for approximately 30 minutes each.

2.3 Solution features

As an **expat**/tourist, I want to be fully immersed in the Qatari culture and learn about the country from locals rather than international tour guide companies, I want to find locals who are willing to show me around Qatar.

- This user story has been implemented and written below are the features used.
- User signs up to the platform as a user and logs in to use the platform.
- The user has the ability to post their request and see who accepts the request.

As an **expat**, I want someone to fix my water problems in my apartment but if there are multiple people who can help me, I want to be able to choose the right person based on their expertise in order to fix my water problem efficiently and effectively.

- This user story has been implemented and written below are the features used.
- User signs up to the platform as a user and logs in to use the platform.
- The user has the ability to post their request and see who accepts the request.
- The user has the option to choose freelancer or business to carry out the request, by looking at the customer ratings and reviews.

As an **expat**, I need to shift second hand furniture from one place to another and this request needs to be carried out from 2 days from now and I should have an option to pay by cash or credit online because from 2 days online I may not have cash so I have to pay by credit card. I prefer to pay by cash but I can't be sure if I'll have enough cash in hand so paying by credit card is the next option.

- User signs up to the platform as a user and logs in to use the platform.
- The user has the ability to post their request and see who accepts the request.
- The user has the option to choose freelancer or business to carry out the request, by looking at the customer ratings and reviews.
- Pay by cash or online by credit card. As implementing a proper transaction where you enter your credit card details is too complex, the team implemented a form to demonstrate how the process works.

As a **local**, I want to sell my old university books online easily in order to reduce the number of books in my house and I want to reimburse my \$500 I spent on these books.

- This user story has been implemented and written below are the features used.
- User signs up to the platform as a user and logs in to use the platform.
- The user has the ability to post their request and see who accepts the request.

As a **local**, I want someone to carpool to work with every day until I can afford to buy myself a new car.

- This user story has been implemented and written below are the features used.
- User signs up to the platform as a user and logs in to use the platform.
- The user has the ability to post their request and see who accepts the request.

As a **local**, I want to post a request where I can hire someone to paint my house but I have no internet access (since I didn't pay my network bill) in order to make my house look aesthetically pleasing.

- This user story involves using the SMS feature of the platform. The user doesn't need to login to the platform. They send SMS in this format [service you require], [Location], [Time], [Price] to the platforms dedicated phone number.
- This feature hasn't been implemented because of time constraints.

As a **local businessman**, I've recently opened up my business for fixing electronics at reasonable rates and I'm looking for customers in order to thrive in the market and create some profit for my business.

- This user story has been implemented and written below are the features used.
- User signs up to the platform as a business and logs in to use the platform.
- The businessman, using the platform, has the ability to search through customer requests manually through the list or through the categories and take on requests related to their skills.

As a **local businessman**, I've signed a contract with the team and I'm responsible for most of the delivery requests on the platform, in order to honor the contract, I've accepted these requests so I can increase my business's reputation.

- This user story has been implemented and written below are the features used.
- User signs up to the platform as a business and logs in to use the platform.
- The businessman, using the platform, has the ability to search through customer requests manually through the list or through the categories and take on requests related to their skills.

As a **local businesswoman**, I have lost many of my international customers in Saudi Arabia from my Instagram business due to the blockade I need to find a new market my services/products will appeal to and I'm willing to pay extra so in the platform my company name will be at the top of the directory or list.

- This user story has been implemented and written below are the features used.
- User signs up to the platform as a business and logs in to use the platform.
- The businessman, using the platform, has the ability to search through customer requests manually through the list or through the categories and take on requests related to their skills.
- As the business payed for premium features, the platform will automatically send notifications of requests related to their business skills.

As a **freelancer**, I want to make some extra cash and I'm looking for jobs where I can deliver small products in order to make some pocket money so I can buy myself a new smartphone or laptop.

- This user story has been implemented and written below are the features used.

- User signs up to the platform as a business and logs in to use the platform.
- The freelancer, using the platform, has the ability to search through customer requests manually through the list or through the categories and take on requests related to their skills.
- As the business payed for premium features, the platform will automatically send notifications of requests related to their skills.

As a **freelancer**, I enjoy painting and I'm looking for jobs where I can paint people houses in order to make extra money and it can pass my time.

- This user story has been implemented and written below are the features used.
- User signs up to the platform as a business and logs in to use the platform.
- The freelancer, using the platform, has the ability to search through customer requests manually through the list or through the categories and take on requests related to their skills.
- If the freelancer payed for premium features, the platform will automatically send notifications of requests related to their skills.

As a **freelancer**, I need to make certain amount of money in a short period of time, I want to look for painting jobs and I'm willing to negotiate the price in order to quickly take up a job and earn a small amount of money.

- This user story has been implemented and written below are the features used.
- User signs up to the platform as a business and logs in to use the platform.
- The freelancer, using the platform, has the ability to search through customer requests manually through the list or through the categories and take on requests related to their skills.
- As there are many other freelancers taking on a request the freelancer has selected, he/she has the option to bid. He can lower the original price of the request in order to secure the request himself or he/she can raise it if the task is much more complex than the user indicated.

3. Business Model

3.1 Internet business model:

The team's platform follows the Business-to-Consumer business model because the platform connects businesses to customers. And it follows the Consumer-to-Consumer business model as well because the platform also connects freelancers to customers.

The internet business model is a combination of three categories. The first one being Commerce. The entire market place is online and customers can choose many vendors available online i.e. local businesses, freelancers. A transaction can be made online by entering your credit card details by the customer and freelancers have the option to bid/auction on requests as well.

The second one being Data i.e. user data in general. The platform contains user profiles of businesses and freelancers. This includes their names, contact details, skills and expertise but most importantly their reviews and ratings. The profile also shows an average of the ratings since there will be multiple ratings for these profiles from customers.

The third one being Subscription where the platform has add-ons or premium features. At first, the platform is free to sign up for any user group and they can use all the functionalities on the platform. The premium features include, businesses who provide a license, can set up a contract with the team's platform. Typically, for every transaction, the team takes 10% of every transaction but since the business is paying for a contract monthly, there will be no 10% cut from every transaction. If a freelancer or business pay for premium features, instead of them manually checking for requests that suit their skills, the platform will automatically search for requests related to their skills and notify them. This is possible because when they sign in as a business, it requires the business or freelancer to enter their skills and expertise.

3.2 Value propositions:

In terms of *products and services* provided, the team have developed a web platform where users can find skill taskers to run errands for them, making life convenient for them every day. In order for accomplish this, certain features and functionalities were implemented. A customer user creates an account to post requests and a business user, either a local business or freelancer, to take on requests. Each business user has a user profile with their 5 star ratings given by their employers i.e. customer users. When posting a request, choosing a category is mandatory but users who selected 'Other', data parsing algorithm will take place in case the request fits a specific category. The business users have the option to bid or negotiate if they think the offer the customer is offering is too low or high, and on the customer end they can choose a business user to take on their request. This can be done by viewing the user profile and ratings. Transactions can happen online as well as offline, in person. Premium features are included (mentioned in depth, 3.10 - Revenue model) that are beneficial to the business users. An SMS feature that can help customer users who have no access to the internet or to the web application. If they find it necessary to post a request in these circumstances, they can use the SMS feature to post a request and receive a confirmation to let them know their request has been sent out.

There are many *pains* that regular people face but the most important ones are the time and financial constraint. Everyone is busy going around in their lives and they don't have enough time. There are people who have jobs and there are other people who may not have a job, but either way they can only spend a limited amount of money every day. So buying products or hiring services at a cheaper cost is the feasible option for them. Another concern is that some people may not have the ability to do certain tasks and they might be on a tight budget. Finding a cheap provider can help them out greatly. Local people tend to know the well-known businesses but not the smaller businesses. In terms of small businesses, they may be new to the market and are looking for customers and they need to break the monopoly in the market.

To *relieve this pain*, the team has decided to create this platform that deals with the pains just mentioned above. The team will provide a platform for regular people and provide convenience at a suitable price. And local businesses to help them break the monopoly in Qatar and retrieve new potential customers.

There are many *gains* for this platform. Customers using the application can save a lot of money since they find cheaper businesses in the market to solve their problems or requests. Since any request can be posted on this platform, it is all done on this platform. By posting a request on this platform, it makes the process much convenient for the customer and it increases their productivity. As freelancers can do customer's requests, this creates job opportunities for them and therefore they can earn some extra cash. Finally, it helps smaller businesses reach new customers and allows them to compete with bigger businesses.

For *gain creators*, there is no middle management i.e. an agent to connect your request to these businesses. The platform connects directly with these businesses as they have the option to sign a contract with us. This platform saves users a lot of time and money which is already limited in their daily lives. Another benefit is that businesses can easily find customers and customers can easily find businesses in Qatar.

In terms of *customer jobs*, customer users register for an account, post a request for a service, choose the best person for the job by viewing their user profile and rating, choose the best negotiation if a business user bid on the request, pay online or offline. Business users register for an account as well and choose requests they want to take on. They can bid on tasks they feel the price is too high or low. They carry out the task from the provider and get paid in the end.

3.3 Customer segments:

There are two customer segments i.e. Customers and Service Providers. The customers provide a request online and set the details of the request i.e. what service, the location, the time when they want it done and the price. The service providers have two different categories i.e. the businesses and freelancers. They are taking on the requests that related to their skills and expertise so they are providing a service to the customers.

3.4 Customer relationships:

All the customer relationships happen through the platform so its highly automated. There is a relationship between the customers and service providers that doesn't really need any external contact. The customers can connect with the service providers through the platform and vice versa. But if necessary, the contact details are available for each user and they can connect outside the platform i.e. phone number, email. When a service provider takes on a customer request and if the customer is happy with the outcome, the customer has the ability to review and rate the user. By constantly giving an exceptional review and rating, this can help build the relationship between the customer and service provider. Another form of relationship between service providers and the team is through contracts. If businesses and freelancers decide to pay for premium features, this builds a relationship between the team

and service providers. The team can provide more features if they take on a contract very often in the near future.

3.5 Channels:

The distribution channel of our service is mainly the web application but once the customers have registered for their accounts initially then they have the option to also use the SMS feature to access certain functionalities of our web application, like requesting a service, through their mobile phones.

Marketing channel strategies include social media marketing. By displaying advertisements of the platform on social media i.e. Facebook, Instagram, Twitter, this can help bring in valuable customers. As social media is popular in this era, this can bring in a large group of people.

3.6 Key activities:

To execute this startup in the real world, the first step is to make sure the platform is working with no problems in the back end and deployed. All the features and functionalities should be working especially the algorithm for data parsing is working sufficiently. In order to get users or freelancers to use the platform, marketing plays an important role. The team needs to market the platform; this can be done through advertisements over the internet via social media for instance. The team needs local businesses to be involved in the platform and they need to reach out to them. This can be done by advertisements through the internet and reaching out to as many local businesses in person as well.

The team also has to make sure that the business licenses provided are accurate and legitimate. All the transactions that happen online and offline (in person), the team has to make sure that all the transactions are going through and recorded. They need to be sure to take 10% through each transaction, nothing more and nothing less. There needs to be a team to maintain the application in the background. This could be the team right now or they need to hire new people to maintain the application. To make sure transactions are working fine, check for any security issues, bugs in the platform, provide premium updates if necessary etc.

3.7 Key resources:

As mentioned above, the platform is the main resource of the project. The platform needs to be deployed and working with no technical issues. All the features and functionalities need to be implemented with no errors in the code. The algorithm for data parsing is the biggest functionality in the platform and needs to be exceptional and at an artificial intelligence level of complexity. The code is working on Node JS with programming languages like Javascript, HTML and CSS. Heroku is where the platform will be deployed and external API's like Twilio are used. SQLite is the database that is being used and Github is used to push and retrieve the code in case if someone wants to update the platform in the near future. In terms of hardware, only access to a laptop is sufficient that can run all of the software above.

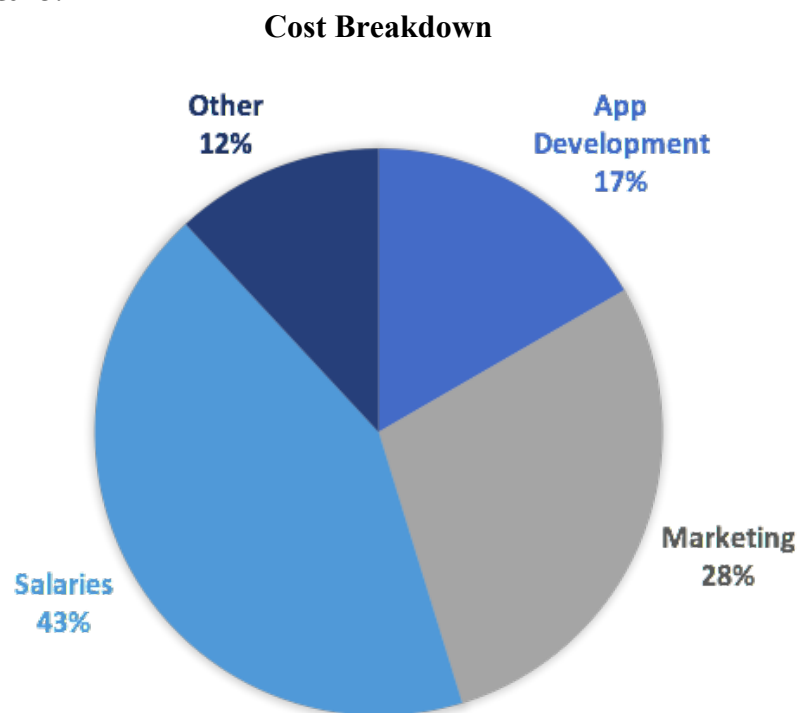
In terms of human resources, a group of people need to maintain the application and these people need some experience with programming. They need to verify whether or not the

algorithm is accidentally mis-categorizing the requests. Make sure there aren't any security risks or attacks and no spamming of requests. All the transactions are working properly and make sure every request, the user payed to the business or freelancer. Keep an account all the transactions that happened on the platform and in person via cash. Make sure the notifications for premium users are working sufficiently.

3.8 Key partners:

Key partners include the local businesses in Qatar. These can be any sort of business looking for new customers that want to break the monopoly in the market. These include small restaurants, electronic shops, mechanic workshop, car wash companies etc. Freelancers include anyone in Qatar who is willing to make extra cash and provide services that they are capable with. New comers and local residents who want a certain service done for them. A major key supplier that the team wants to connect with is PayPal. PayPal is a third party that can be used for the online payment processing services that is provided in the platform. As the team doesn't know how to implement a paying service without causing any security risk, connecting with PayPal is the next best option.

3.9 Cost structure:



Capital costs mainly includes development of the website, cost of servers and laptops and renting a small office space in Qatar. As we're at the initial stage of the project, so we won't be requiring office space at the initial stage. However, app development has been included in the project capital cost which starts of solely around Qr. 7,000 and another Qr. 18,000 for administrative costs which will be also be our fixed costs.

Fixed costs include application deployment i.e. using Node JS and SQLite database and paying extra incase the team needs more storage space. The initial marketing is vital since the team needs to bring in as many users and businesses to the platform. Platform maintenance is an important factor as well so a group of people need to maintain the platform. They need a monthly salary in order to maintain the application once the team decides to pass on the project to someone else.

For the variable cost, both administrative and marketing cost have been included. Sales and marketing costs will be around Qr. 12,000. The marketing will be mainly for market research and advertising through social media. As the platform is deployed on Heroku and as more used use the platform, the larger the database file. So this means that the storage increases over time and the variable cost is due to Heroku and how much storage space the platform provides on Heroku itself.

3.10 Revenue model:

QatarHelp Profit and Loss Statement 2018-2022

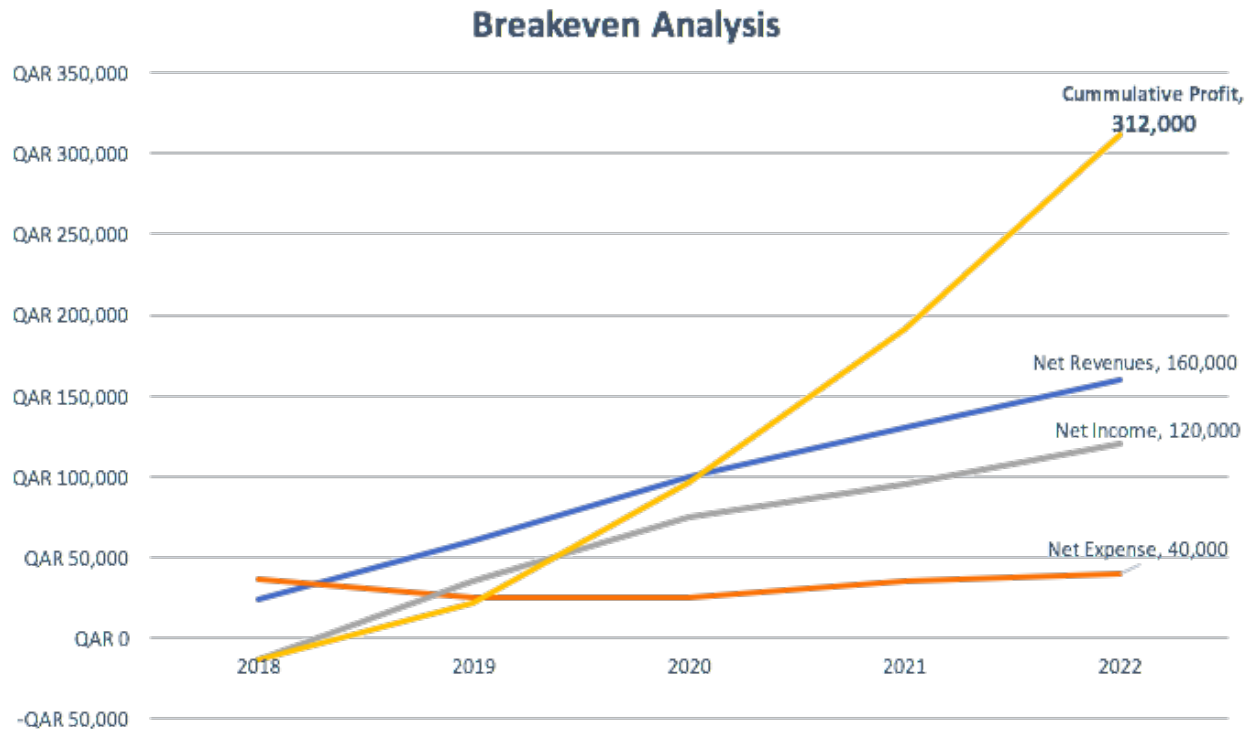
	2018	2019	2020	2021	2022
Net Revenues	24,000	60,000	100,000	130,000	160,000
Product Development	7,000	1,000	1,000	1,000	1,000
Operating Expenses					
Sales & Marketing	12,000	10,000	10,000	14,000	19,000
General and Administrative	18,000	14,000	14,000	20,000	20,000

Net Expense	37,000	25,000	25,000	35,000	40,000
Net Income	-13,000	35,000	75,000	95,000	120,000
Cumulative Profit	-13,000	22,000	97,000	192,000	312,000

In order to create revenue from the web application, whenever a freelancer or business take on a request, the customer has to pay these people for their services. Either they pay from the web application via credit card or in person, there is a log in the backend showing all the requests and who undertook each request, mainly the transaction of each request. For each of these transactions, 10% fee is extracted from the amount and given to the team.

Business users i.e. local businesses and freelancers can pay for premium features. One of these features include that the team will provide a business contract between the business users. The benefit of paying for this contract every month is that there will be no 10% cut from each transaction. Another feature is that according to the business user's favorite categories, the application will send notifications of requests related to their expertise. They don't need to constantly check the requests every day, they will be automatically notified of requests related to their expertise. Finally, another premium feature is the featured listings. The local businesses or freelancers will be displayed on the home page and this will generate more revenue for the company.

Just as forecast, with the worst case scenario of 50 transactions per month with an average of Qr. 10 fees, we will still be breaking even within 14 months of our website deployment. Then from second year onwards with a steady revenue we forecast our platform to generate more than Qr. 300,000 within 5 years through the transaction fees solely.



4. Technical aspects

4.1 Solution design

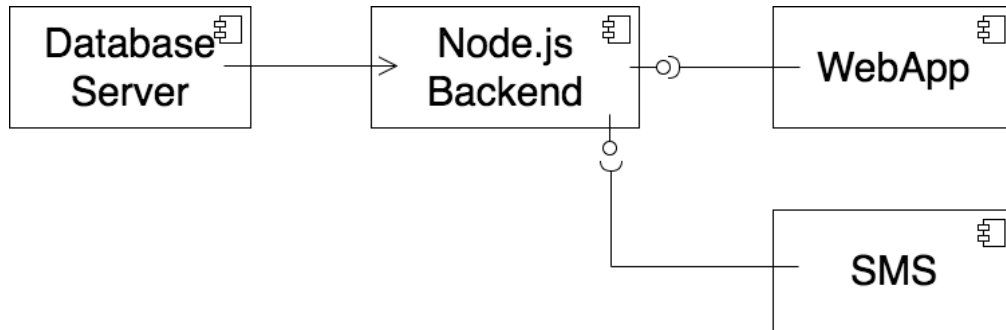
4.1.1 Components and external services/API:

There are four type of components in the platform. The first one being the database that includes all the user data. All the account details i.e. username, password, contact details etc. for the user and business signup groups are stored in the database. Along with the businesses and freelancers' reviews and ratings are stored. All the requests are stored in the database server and the database updates every time a request is taken on. As well as all the transactions that have been taken place are stored and the ones that need to occur i.e. if paying in cash is the option rather than paying online via credit card.

The second component being the back end of the platform. This includes all the code written for the platform i.e. the data parsing algorithm, user interface design code etc. that is stored in the backend.

The third component is the WebApp itself. This includes the user interface design, features and functionalities displayed in the front end. This includes the signup page for a customer and business, the login page. The page where you can post a request, a page to search for all the requests and take on any of the requests in the process. The option to bid on any request, the option to look through all the service providers to choose the right person for the request,

the ability to rate and review a service provider. The ability to pay by credit card on the platform and much more.

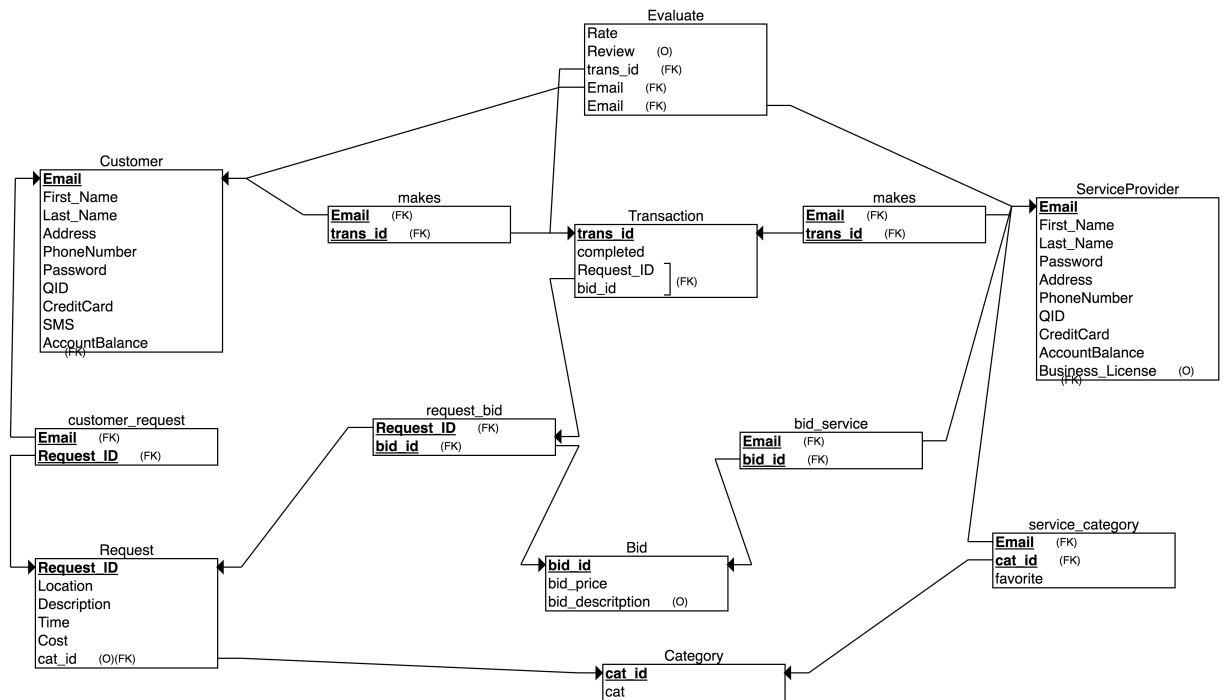
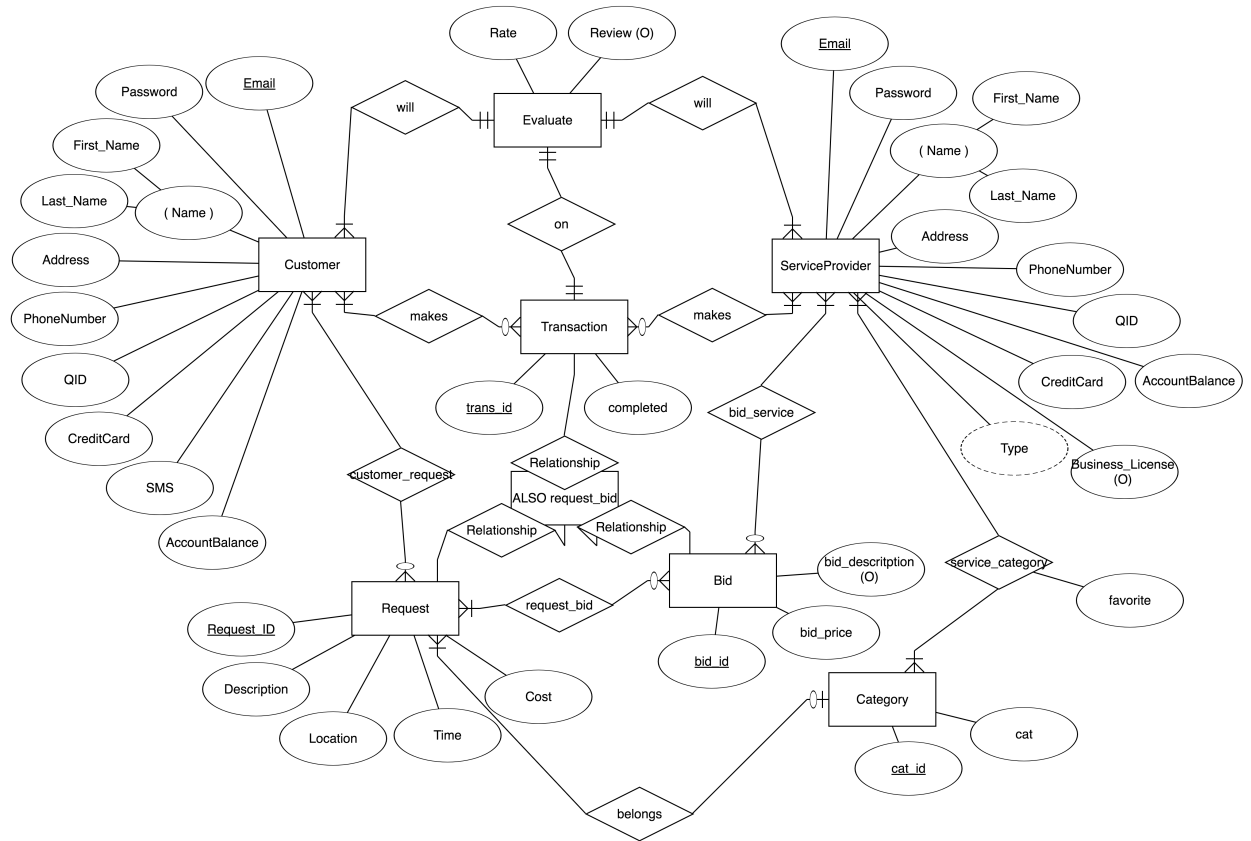


The fourth component is the SMS feature/component. This is where Twilio comes in the program where the user sends an SMS outside the platform, Twilio receives the message and it responds back with a certain message.

Twilio is the only external API used in the platform. The software used is Twilio Node Helper Library (twilio-node) to allow the SMS feature to function. The user sends an SMS to the platforms number in this format; [service you require], [Location], [Time], [Price]. Twilio receives the message and stores it in an external database. Twilio responds back with a message letting the user know if the request was sent successfully and the user receives a message.

4.1.2 Data model

There are two major entities, the Customer and ServiceProvider entities, these are related to our two main types of users of our service, these entities are the ones with the most attributes and all these attributes are the details of each user with the user being uniquely identifiable by their email addresses. There is also a Category entity which is to categorize the requests received and to allow ServiceProviders to be able to specialize in certain fields, i.e. make them their “favorite” categories. The remaining entities are mainly for each task the user can carry out, the Customers should be able to submit a Request, with certain attributes/details, and the ServiceProvider should be able to make bids on those several individual Requests. The bids that are accepted are then paired with their respective Request and moved into the Transaction process and once the Transaction is complete, both the ServiceProvider and Customer are asked to fill out an Evaluation of each other’s performance in the interaction/service. This all can be visualized in the following Entity Relationship Diagram (ERD) and its relational schema below.



4.1.3 UI design

In our initial UI design, the WIX mockup version (refer to appendix for screenshots), we kept a combination of light and dark with white and maroon, for the sole purpose of using the colors of the Qatari flag to symbolize the nationalism of this application and to empower local businesses. However, with feedback from users and stakeholders we found out that the maroon was so dark that it was basically considered to be black and it made the website appear as plain black and white and was not appealing enough.

The new UI design, the current version of the web application (refer to appendix for screenshots), was a revision of all our design choices such as color scheme and additional features. The landing page was made to be simplistic with the logo and our tagline being the most prominent features, with the blurred-out image in the background and options to sign up or log in. Our new color scheme became orange and white mostly as we believed that this color combination, especially the use of orange, would not only be memorable in the minds of the users but also according to color theory orange generally causes feelings of excitement for the viewer. We wanted people to always remember our UI whenever they think of our web application and we always wanted them to feel a sense of excitement using the service.

We added further features like testimonials and contact us sections on the landing pages too, to further encourage first time viewers to not only get in touch with us if they have any further questions but also be reassured of how great the application is through the words of our customers.

And for the frequent users like the customers and service providers, within their respective home pages, we simplified the designs and spaced out the elements to not have the same cramped feeling that was evident in our initial WIX UI and to allow the users to get straight to the features they want to use easily.

4.2 Solution development tools

4.2.1 Programming language and frameworks:

The software used for QatarHelp was Node JS along with Javascript, HTML and CSS were used as the programming languages. Node JS was used because it can easily handle a large database file since the team figured that the database file would expand at an exponential rate when used by multiple users. Also it is simple to make changes to the database that requires minimum effort. It is much simpler to deploy our application in Node JS to a server like Heroku as opposed to another programming language, this is something members of our team have known from previous projects and deployments. There were functionality problems in the program and certain design issues. It is an agile way of developing the application in Node JS with no migrations. The IDE's used are sublime text to edit the code and the terminal was used. We also used DBbrowser for manually checking the records in our databases and tables.

4.2.2 Version control and deployment:

For version control, the team used GitHub to push and pull all the work:

<https://github.com/qatarHelp/qHelp>. The team members have always used GitHub as they are

familiar with it and it is the best collaboration tool for developing and sharing an application's code.

The platform is deployed on Heroku: <https://possessed-witch-23283.herokuapp.com/>

4.2.3 Database:

The database the team have used is SQLite3 because the team is familiar with this database compared to others. This database is the most convenient for the team since it is stored on the web application itself, not on the server. So constantly updating the database is much faster and its easier for all the team members to access the database, which is through the application. There is no need to connect to the server manually every single time. The database is able to handle small and large amount of data and data requests, there is no limit to how big the database file is. SQLite3 doesn't cause any issues between Heroku and nodeJS when they are working simultaneously. The team's database is deployed on the web application, which is deployed on Heroku.

4.3 Solution testing

4.3.1 UI Testing:

In the process of developing the application, the team received user interface feedback from potential customers i.e. CMUQ students. The team let the students explore the web application, i.e. the home page, and told them nothing about what the web application was for. The team let them first figure out what the application was used for. In this case, the feedback received was generally positive so users knew what the web application was for but there were some bad design flaws specifically on the home page. So the team did some design changes in the home page to satisfy their needs.

The team used Morae, a usability testing tool, that records users and tracks their eye movements in the process. The team later asked these students if they were interested in posting requests for services they require and if they were willing to take on requests to make extra cash. The team gave specific tasks i.e. login and post a request for a customer user, login and take on a request for a business user etc. The users would Think-Aloud every step they were doing in order to signify if the application is easy to use. Using Morae, we can distinguish the time taken to finish a task and compare it with other users.

The team did a survey with specific questions and calculated the SUS score (Software Usability Score). The average score was 85.94 which is pretty high in terms of usability, with 8 participants. The team also used EyeQuant that measures how clean and clear the UI is and the results are shown in the appendix.

4.3.2 Software testing:

The automated software gems/libraries that we used for testing is MochaJS and ChaiJS. MochaJS is a Javascript testing framework for nodeJS and ChaiJS is an assertion library. For the unit module testing, we made unit cases for all the buttons to make sure it routes to the right routes. Therefore, if someone forgets and changes the route path name it fails the

expected result. We also added some integration tests to make sure the authentication system works. Therefore, when we test with wrong credentials it won't let the user into the system and displays a fail test. We make sure to run tests and make sure it passes all the test cases before pushing it to heroku production since we do not want any technical errors in our application.

4.4 Stakeholders feedback

The team talked to eight potential customers and/or business users to provide feedback for the application. The team pitched the idea to these users and let them explore the application. These users focused more on the design aspect of the application. For instance, they focused on the request page. As the request can be anything from delivery, tutoring, pick-up etc. they provided specific feedback on the form, to see if it was applicable to different type of requests. The request has a description box that can fit a lot of text so if a request is too complicated, it can be specified in this field. There are popups next to the fields so it helps the user understand what needs to be inputted in the field. Overall, the request form is applicable for most type of requests.

The team talked to three small local businesses like Star Tech, an electronic store that sell accessories and repair damaged electronics. Agadeer Furniture, a carpentry store that builds products from scratch. And More Speed, a store that sells car accessories. After completing the final solution and fixing small design issues, the team pitched QatarHelp to these local businesses. They then showed them the application and let them explore and figure out how the application works. In the end, the local businesses were pleased with what we were doing to help these businesses. They admired that it was easy to find more customers online and there was an option to pay online and offline. Usually these businesses prefer being paid in person so this option was viable. They found the application easy to use and they would use this application if it was deployed in the market.

5. Limitations and Future Plans

5.1 Limitations

One of the features that team initially planned on implementing was the SMS feature. This is the offline feature where a customer can post a request without logging in to the web application or if they have no access to Wi-Fi or 4G. The customer sends a request in this format [service you require], [Location], [Time], [Price] and send it to the platforms private number. The customer will receive a reply message indicating if the request has been successfully added to their account and the web application. As this was the last feature the team was planning to implement, due to the scope of the project and not enough time left, the team were not able to implement this feature.

When customers create a request and select 'Other' as their category, the team planned to parse through their requests and try to categorize them in case they fit into the pre-defined categories. Initially, the category field was optional and the customer had the freedom to input their request

without figuring out what category it belonged to. Due to time constraints as well, creating an algorithm to parse through each word and categorizing them is too advance for the team. The team would have to create an AI level data parsing algorithm in order to achieve this. Right now the team is planning on creating a dictionary with a fixed number of words that will parse through the requests and categorize each request. If the algorithm can't recognize any of these requests, it simply remains as 'Other' category.

5.2 Future improvements

In the future the team would possible create the SMS functionality initially planned. As this feature differentiates between other similar web applications in Qatar, this could be a major selling point to the team's application. The team would like to expand the data parsing categorization as an AI level as this would remove the mandatory field of selecting the type of category of the request. This would make the process easier for the users and save some time as well.

Another important factor that the team didn't have time to work on was the security of the application. Inputting credit card information is crucial and securing the website for any sort of hack is vital. And working with services like Paypal and local banks, features relating to electronic fund transfers and online transactions could be improved.

The team would like to deploy this application in the real-world and make it popular in Qatar. In order to do so, there are certain steps, i.e. conduct further user testing and improve on the design, create a simple and intuitive design, obtain funding, etc. Connecting more small local businesses to the application along with major businesses are the future plans. Involving major franchises for example, like Al-Fardan that can help the brand for the application and bring in new users. Considering how prominent the application would be, expanding and deploying the application to other cities and countries is what more the team would like to make happen in the near future.

6. Project Team

Talha Anees has the most programming experience out of the team. He is proficient in Python, Java, JavaScript, Ruby on Rails and C. He took lead on the programming aspects the web application in this project. Furthermore, he has designed various applications/software's as well, hence, he helped with the design of the application.

Ali Abbas also has proficient programming language in Python, Java, Ruby on Rails, C#. So he programmed the web application alongside Talha, he focused on the implementation of the database in the backend. He is also pursuing a minor in Business Administration so the courses he has taken gave him an advantage at strategizing an efficient and beneficial business model for the long term and created the product's appeal to the public within this market.

Ali Jafar has taken many courses that involves a lot of writing and so he has advanced his writing skills. He has also taken a couple of design courses and his aspect of design is great.

So he took lead on the documentation aspects of this project. Whenever the team meet up together and are discussing certain aspects of the project, he took notes and providing the notes to everyone after the meeting. He helped in the design aspects of the project. He also created certain presentations in the project and did the UI testing and updated the UI designs.

Mohammed Zakaria Maruf has a minor in Business Administration and has taken many design courses throughout CMUQ and out of the team, his design skills are exceptional. So he took lead of the business and design aspects of the project. He mainly focused on the competitive advantage and generating revenue of the web application with its design and he took lead and modified the design after user feedback. As there are many presentations during this project, he designed and structure the presentations as well.

Muhsin Warfa worked on the sprint reports and the automated testing throughout the project.

References

- Lecture slides from Blackboard

Appendices

Surveys & Interview Questions

The team sent out two surveys, one for potential consumers and freelancers. This shows the questions the team sent out and the interviews questions used for initial stakeholder analysis. A picture file is zipped within the folder, showing notes taken in the interviews with the stakeholders.

QUESTIONS RESPONSES 119

QatarHelp App (Consumer)

Senior Project website development for 67-475. Thank you for filling out the survey :)

I'm a

☐ Male

☐ Female

Age:

Short answer text

Occupation:

Short answer text

How long have you been living in Qatar?

Short answer text

How well do you know where to get things fixed?

1 2 3 4 5

No idea at all ☐ ☐ ☐ ☐ ☐ Very well

Do you have issues with transportation & getting things delivered?

1 2 3 4 5

No issue ☐ ☐ ☐ ☐ ☐ A lot

Do you have enough time to do your daily chores & run errands?

How well do you know where to get things fixed?

1 2 3 4 5

No idea at all ☐ ☐ ☐ ☐ ☐ Very well

Do you have issues with transportation & getting things delivered?

1 2 3 4 5

No issue ☐ ☐ ☐ ☐ ☐ A lot

Do you have enough time to do your daily chores & run errands?

1 2 3 4 5

Not at all ☐ ☐ ☐ ☐ ☐ I manage my time well

How expensive do you find the services in Qatar?

1 2 3 4 5

Really Cheap ☐ ☐ ☐ ☐ ☐ Really Expensive

Would you like to have someone else run errands for you?

☐ Yes

☐ No

☐ Other...

Are you willing to try out an app that would let you order any service?

If yes, provide your AndrewID:

Short answer text

QUESTIONS RESPONSES 119

QatarHelp App (Freelancers)

Senior Project website development for 67-475. Thank you

I'm a

☐ Male

☐ Female

Age:

Short answer text

Occupation:

Short answer text

Are there many opportunities to have

1 2 3 4 5

Not at all ☐ ☐ ☐ ☐ ☐ A lot

Will you run errands for someone to earn

1 2 3 4 5

Never ☐ ☐ ☐ ☐ ☐ Sure

List 5 top skills

For example: cooking technology repair delivery

Short answer text

Do you have

☐ Yes

☐ No

Will you use a platform to provide service for

☐ Yes

☐ No

☐ Other...

Interview Questions for local businesses

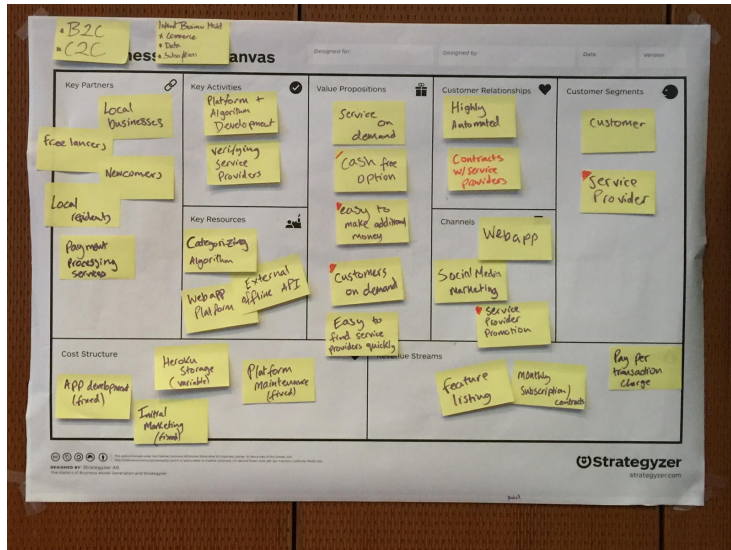
- What is the name of your business?
- How many customers on average do you get in a day?
- Do you feel like not enough people can find your business easily?
- Who are your main competitors?
- Do you feel threatened by large international businesses?
- Has the blockade affected your business? If yes, how?

Explain to interviewee the idea of the app

- How do you think an app like this could help your business?
- Will you be willing to test our app?

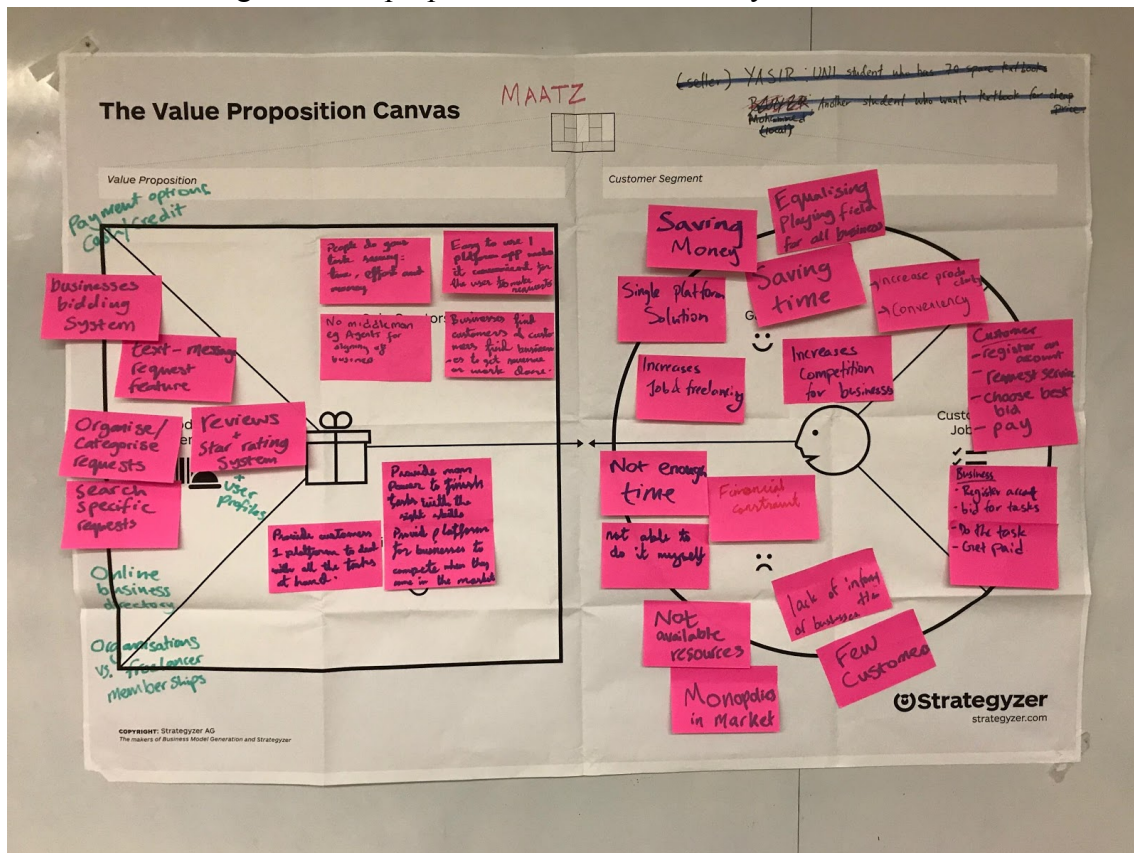
Business Model

Picture showing the business model created by the team.



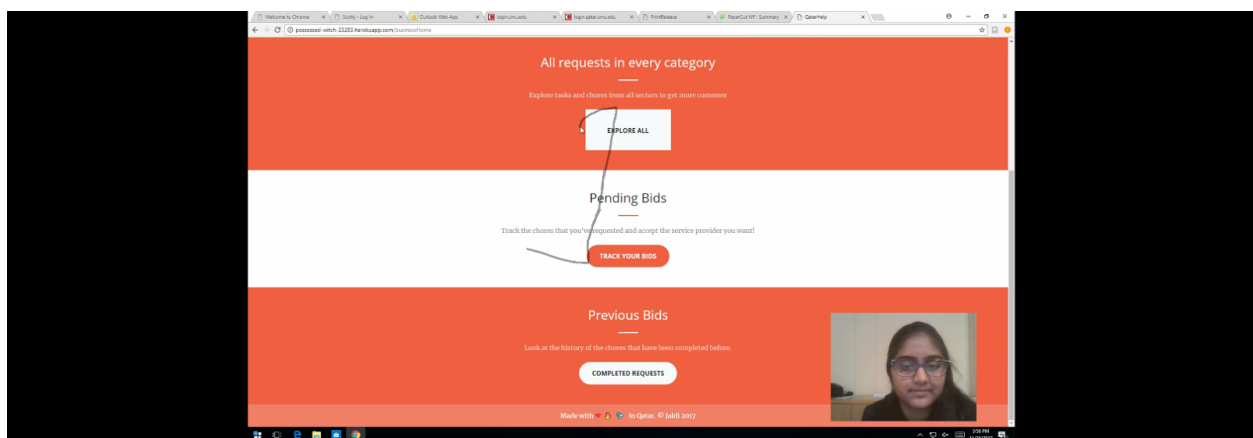
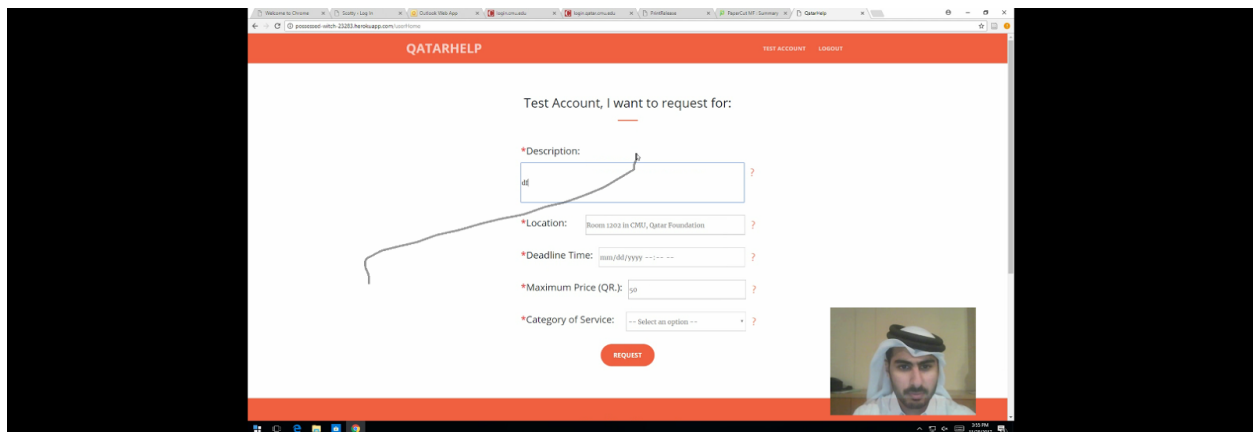
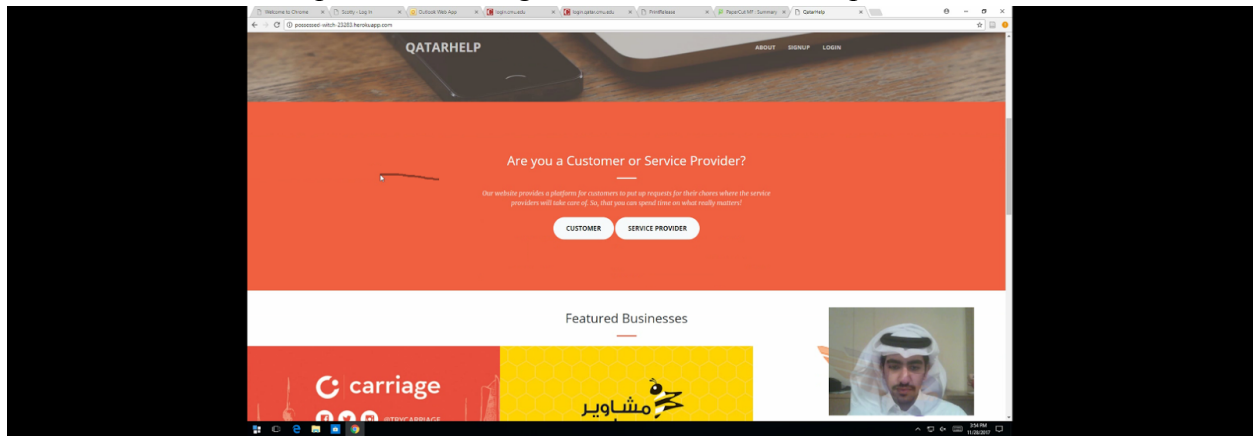
Value Proposition Canvas

Picture showing the value proposition canvas created by the team.



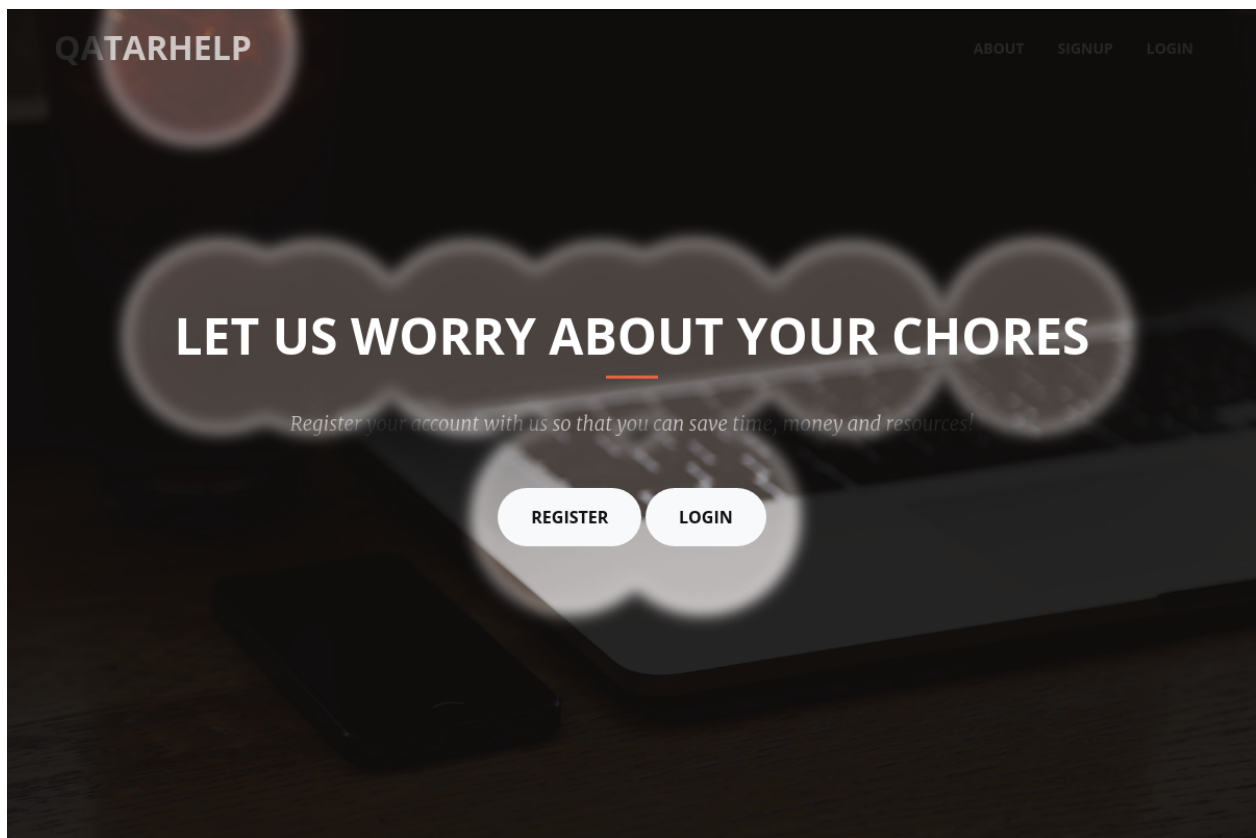
Morae Testing Evidence

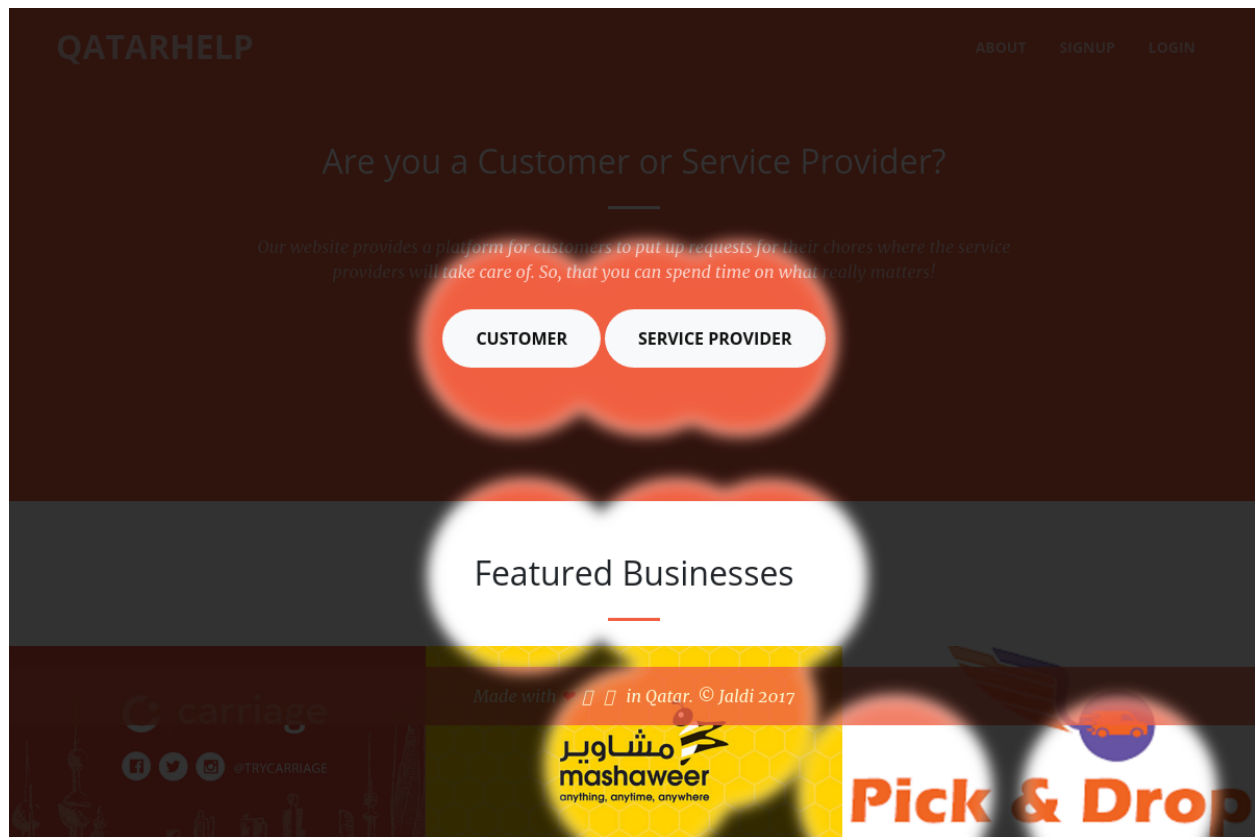
Carried out Morae testing on users (students) in terms of UI feedback and stakeholder's feedback. Below are pictures showing a few individuals in the process.



EyeQuant Evidence

Shows how the resulting pages look using this program. This indicates what new users are likely to look at when visiting the web application, the first time.





Stakeholders Recording files

Recorded stakeholder's feedback (small local businesses) when the application was complete. Short recordings from Star Tech and Agadeer Furniture where they talk about QatarHelp and their opinions. These recording files are included in the zip folder.

Old UI design (WIX mockup)



QatarHelp

We Redefine Convenience

I WANT

VIEW THE TOP

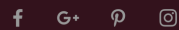
FREELANCERS

BUSINESSES

OUR OFFICE

Address: Education City, Al Luqta
Street, Ar-Rayyan
Phone: 123-456-7890
Email: mzakaria@qatar.cmu.edu

SUBSCRIBE



[Log out](#)

QatarHelp

We Redefine Convenience

I WANT TO CHECK

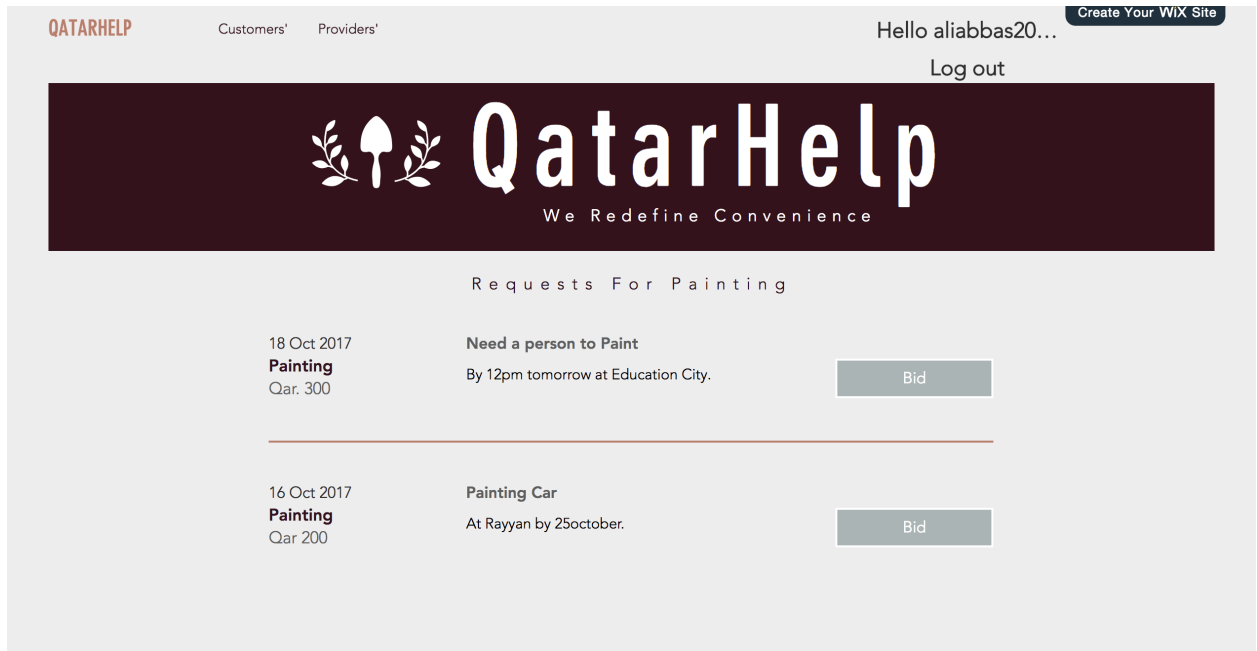
[My Favorites](#)[All Requests](#)[Log out](#)

QatarHelp

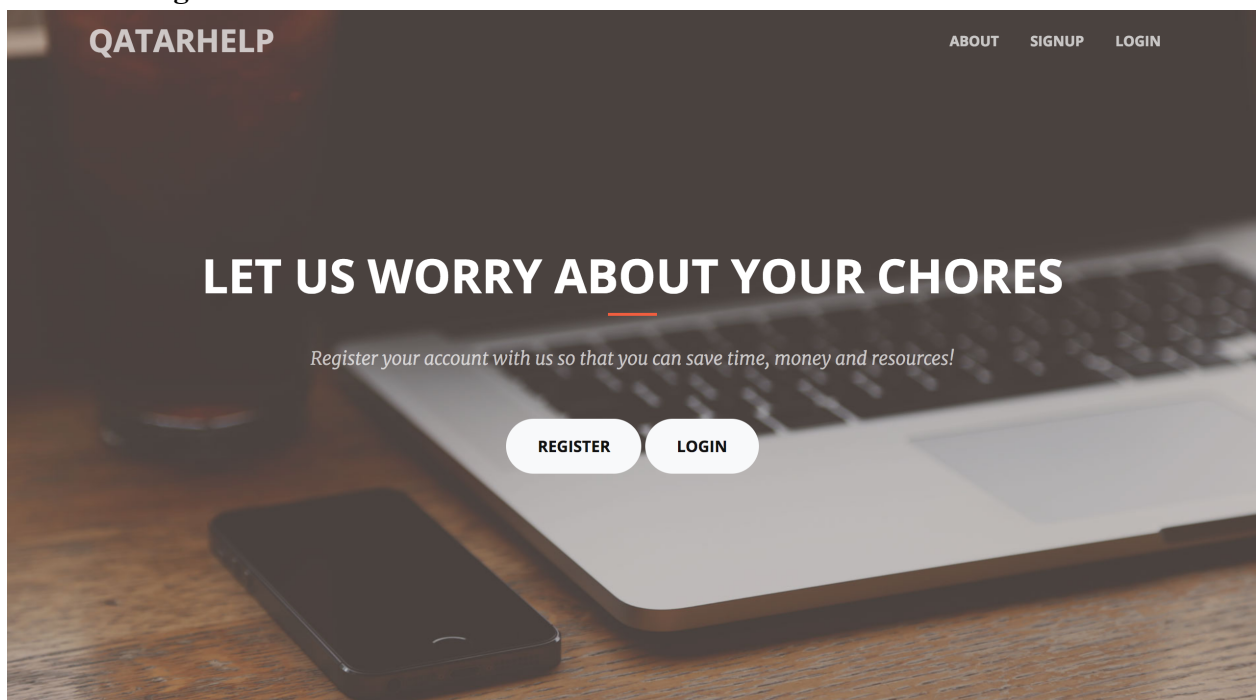
We Redefine Convenience

Here are all sectors

[All Sectors](#)[Household Repairs \(10\)](#)[Tech Repairs \(23\)](#)[Cleaning \(7\)](#)[Cooking \(13\)](#)[Food Delivery \(42\)](#)[Tutoring \(33\)](#)[Decorations \(27\)](#)[Others \(37\)](#)



New UI design

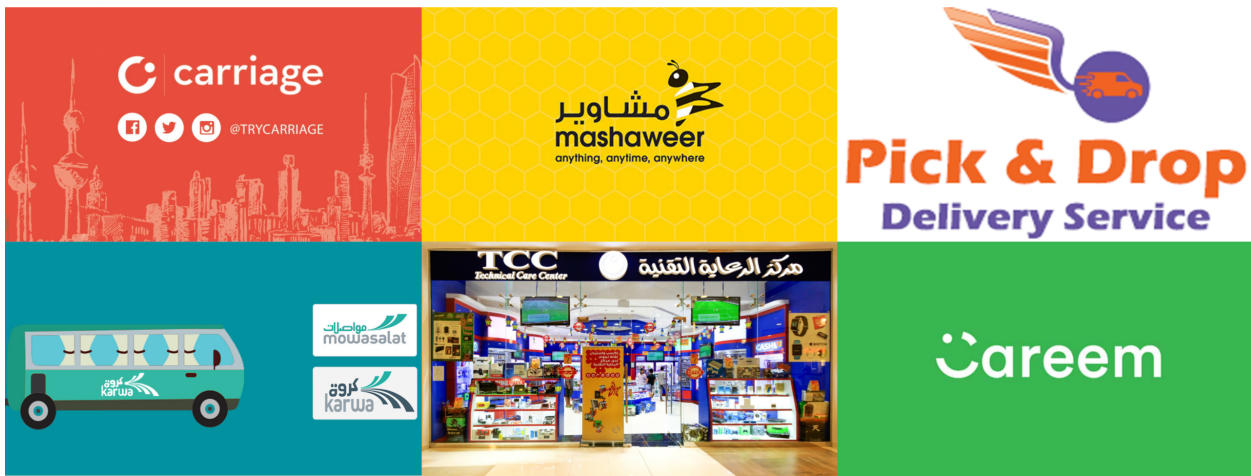


Are you a Customer or Service Provider?

Our website provides a platform for customers to put up requests for their chores where the service providers will take care of. So, that you can spend time on what really matters!

[CUSTOMER](#)[SERVICE PROVIDER](#)

Featured Businesses



Featured Freelancers



Testimonials

"One of the best app to exist! Kudos to the great team!"

Aenean A., Justo Cras

Register right now!

CUSTOMER

SERVICE PROVIDER

Contact Us!

Have any question? Great, just contact us by giving us a call or email us!



+974 3038 6760



info@jaldi.com

Made with ❤️ 🌈 🇶🇦 in Qatar. © Jaldi 2017

Test Account, I want to request for:

*Description: ?

*Location: ?

*Deadline Time: ?

*Maximum Price (QR.): ?

*Category of Service: ?

REQUEST

Pending Requests

Track the chores that you've requested and accept the service provider you want!

TRACK YOUR REQUESTS

Previous Requests

Look at the history of the chores that have been completed before.

COMPLETED REQUESTS

Made with ❤️ 🌍 🇶🇦 in Qatar. © Jaldi 2017

QATARHELP

ABOUT LOGOUT

Pending Requests

🔍 Type to search...

Req # #	Request Name #	Address #	Time #	Price QR #	Category #	Status #	✓	✗
25	Talha	Talha	2	908	delivery	Pending	View All Offers	✗
32	Abc	abs	123	12	delivery	Pending	View All Offers	✗
36	Van ice	Room 1992	12 pm	345	foodDelivery	Pending	View All Offers	✗
37	new new	fsa	fas	21	education	Pending	View All Offers	✗
38	checking time	dasda	2017-10-27T12:20	50	electronic	Pending	View All Offers	✗
39	dsadasdasd	dasdas	2017-11-30T16:30	50	painting	Pending	View All Offers	✗
40	dsa	eqw	32321-02-13T14:13	23	education	Pending	View All Offers	✗
41	dasdqweqw	dasd	213213-02-13T16:12	231	education	Pending	View All Offers	✗
42	ad	dasdas	12312-02-13T01:13	32	electronic	Pending	View All Offers	✗

Welcome to Business Page, Test ServiceProvider

Favorite Categories

REPAIRING

PAINTING

DELIVERY

All requests in every category

Explore tasks and chores from all sectors to get more customer

EXPLORE ALL

Pending Bids

Track the chores that you've requested and accept the service provider you want!

TRACK YOUR BIDS

Previous Bids

Look at the history of the chores that have been completed before.

COMPLETED REQUESTS

Made with ❤️ 🇪🇦 🇶🇦 in Qatar. © Jaldi 2017

Food Delivery

Request ID #	Customer Name #	Request Desc. #	Address #	Time #	Price #	✓
29	Ali Abbas	7up	Dukhan	Wednesday 9:30 pm	12	Accept Make An Offer
36	Test Account	Van ice	Room 1992	12 pm	345	Accept Make An Offer