

# TechFix

BRD

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# Introduction

## Executive Summary

TechFix is an online solution offering technicians and services to everyone. This solution should offer a great number of technicians in all fields. It should offer experienced technicians for different regions in a fast and safe way. TechFix can be used by everyone like landlords, housewives, employers and even technicians themselves. TechFix can be viewed on any computer, mobile or tablet. TechFix should be considered as a helpful tool for any crises happening within your area or company.

## Document Overview

This document introduces TechFix product study plan. It introduces general description, technical description, development plan, operation plan and marketing study.

## Business Objectives

- Offer easy and effective online technician services.
- Offer huge database of contact information for various types of technicians.
- Offer an easy way for searching, selecting and contacting a technician.
- Offer an organized and secured way for profiling and interacting.
- Offer free and self-growing service to everyone.

# Background

## Introduction

Today, Online technician service is considered an efficient method because of its easiness and speed. It is also a free way to get accurate and reliable information. Almost all technicians today, are holding cell phones and managing their work through them. Some of them may also get connected to the internet for many reasons. TechFix is offering them another reason to get connected to the internet, where they can manage their work too and expand it, since it reduces both client and technician time to reach each other.

Organizations can also find a new way to handle any problems happening in their infrastructure. Because of this, the problem is solved in less time. It also helps diminishing the need for service companies. Online technician services are very useful to learn, it is significantly important to individuals and companies to get the needed technicians and handle any problem in hand, saving the time and effort that is required to reach any workshop or search within your community for a good technician. Online technician services help the technicians to monitor their feedback and rating and keep eyes on their progress. The best use of this system is in houses and companies because it helps in solving any problem in the infrastructure and get the results in easy and an efficient manner. Until today contacting technicians was performed randomly, this required more chances to be successful.

Since the traditional methods have many drawbacks such as time consumption, difficulty in getting the required technician, and results are not accurate since the choices were limited. The chance of getting an unexperienced technician in the traditional methods was high, TechFix will assure you the experience of the technician through feedbacks and ratings, Limitation on a few numbers of technicians is not a problem when you use TechFix.

With the development of information technology and use it in an orderly and properly manner helps to overcome the existing error in the traditional system. Online technician services save the technicians information in a database, and this make it easier to get this information and technicians can add their information too, also customers can recommend technicians in a totally automated system.

## Survey

Many different researches have focused on the subject of an online technician services these works can be represented as following:

**Commercial Technician Services (CTS):** is proud to serve commercial kitchens across the Pacific Northwest region. They understand that open communication, trusted service, and quick results are critical for their clients. Their technicians are knowledgeable, highly skilled, and deeply committed to providing the highest quality of work and best solution possible to get your back in service. From brand new restaurants to supermarkets and school cafeterias, rest assured, no kitchen is too small or too large for them to support.

CTS provides installation, preventive maintenance, and service of hot- and cold-side food preparation equipment. Their technicians have an average of 10 years of experience in industrial kitchen equipment diagnostics and repairs.

They will help you get back up and running with world-class and timely service. With a preventive maintenance program, they can help reduce your overall costs by avoiding costly emergency repairs.

**SPIE:** in-house technicians are your contacts on the ground – in your building or in your property. In addition to carrying out all types of repairs and maintenance, their technicians also act as the interface to the suppliers and subcontractors that provide services in your building. They coordinate and monitor the service delivery and are your point of contact to all companies. Their in-house technicians are not only your service provider – they are also members of your team. This is how they view themselves and their role.

Their technicians are responsible for ensuring the proper condition of the building or even an entire site. They carry out regular inspections of the technical systems and processes and of areas inside the property as well as the grounds.

**All World Machinery's service:** team of engineers and technicians are committed to fast, cost-effective repairs and innovations for your mechanical setbacks. Whether from their 47,000 sq. foot service center or in the field, they have the capabilities to get your machine up and running again.

**FIXAWY:** holds special experienced craftsmen for Plumbing works - Electricity - Carpentry - Air Conditioning - Gypsum Board - Aluminum Works - Tiling Works - Painting Works and much more.

**TASKTY:** the first online home services market, owned and operated by Taskty company, their goal is to connect customers with the best service providers and offer them very special offers. They offer various services including home cleaning, laundry cleaning, insect control, plumbing, carpentry, electricity, air conditioning, Aluminum works and more than 14 service in maintenance and home services. By dealing with a company that will include a secured workforce, excellent quality, competitive price.

Taskty is an Egyptian joint stock company registered with the Investment Authority. The company was established in 2012 with investments from different countries of the world and has succeeded in obtaining many awards locally and in the Arab world.

## Accounts Types:

When someone try to sign up, there will be an option for his / her to choose between a technician account or normal client account, so there are two types of accounts:

1. Client account
2. Technician account

### Client Account:

After the client enters all the required information to make an account he / she will be able to see all the technicians in his / her living area. He will be able to search for the technician he / she wants, also he/she will be able to make requests, give feedbacks and even recommend a technician.

### Technician Account:

After the technician enters all the required information to make an account he / she will be able to specify his / her contact information, the area where he / she works and the average time he/she works every day. He / she will be available in the list of technicians which appears to the client who makes a search for technicians in specific area.

## Types of Technician:

1. Carpenter
2. Plumber
3. Electrician
4. Mechanic
5. Craftsman

- **Carpenter:**

A person who makes and repairs wooden objects and structures.

- **Plumber:**

A person who installs and repairs the pipes and fittings of water supply, sanitation.

- **Electrician:**

A person who installs and maintains electrical equipment.

- **Mechanic:**

A person who repairs and maintains machinery.

- **Craftsman:**

A person skilled in creating something with a specified material.

## Fixawy

Fixawy is the best platform to search home service craftsmen in Egypt.

Fixawy helps users find the best technician suitable for their problem, by giving them previous feedbacks about him/her from other previous clients.

Fixawy provides all maintenance services (Plumbing works - Electricity - Carpentry - Air Conditioning - Gypsum Board - Aluminum Works - Tiling Works - Painting Works) with the cooperation with specialize craftsmen across Egypt.

Fixawy was originally developed by Khaled Gamal who is now Chief Executive Officer -CEO- of Fixawy. Fixawy aims to help in finding trusted technicians and to help both the technician and the customers to get their needs. In the beginning, they started in a small zone to try the idea after asking people and researching about it, and then in June 2016, they covered the whole government of Alexandria with a team consisting of 11 members.

Clients of Fixawy are asked to make their own free accounts to make it easy to communicate with technicians. Also, Fixawy helps its clients by classifying its services into some categories and also for simplicity the developers of the website made a label in the website interface called categories to make it easy to be reached for clients.

Also, Fixawy helps clients by providing them with the reviews of technicians to make it easy for them to choose the suitable technicians for the problem.

At the end of the process, clients are asked to leave their feedback about the technicians, they are asked to leave a comment and a rate about technicians' commitment and about the quality of the work done and also to leave an overall rate.

Here are some features of Fixawy listed in details:

### **1. Professional Fixers**

Fixawy doesn't accept any fixer except the ones who pass Fixawy interviews, quality assurance and safety. Every fixer on Fixawy has a file that includes a copy of national ID and clean criminal record.

### **2. Pricing System**

Fixawy has made it comfortable instead of exhausting price negotiation after every process, as after the job done the system sends a message with the process price.

### **3. Fixer Rating**

The system gives you an opportunity to make a review on the fixer after your job done so that the fixer could enhance his services.

### **4. Calculate your needs**

If you are willing to finish your apartment, you will find a calculator that helps you to calculate your materials needs like Floors, Paint, Bricks and Cement.

Clients of Fixawy are not suffering from the problem of prices as Fixawy provides them with a fixed pricing system which we will discuss in details.

The system of pricing for light maintenances (less than 3 working hours for plumbing, carpentry and electricity) is calculated by the point system, the cost of one quarter hour in the first hour

by one point and the second hour by only two points so as to ensure that the technician does not benefit from exaggeration in working time.

Also, there are some points can be added in case of special work or dangerous work.

Any work takes more than three hours pricing system will not estimate its cost and it will be estimated by the client and the technician.

## **How It Works**

### **Search**

Search through hundreds of fixers to get the perfect one for you.

### **Reserve Fixer**

Reserve the fixer any time you want then you will get confirmation within short time

### **Getting Served**

The fixer will come to you at the defined time, after his job done the app will take your review about the provided service to help the new users to pick up fixers.

## **Why This Fixer Is Fixawy?**

In order to ensure the interests of the users of the application will remain a priority of the company to ensure the acceptance of technicians after passing their tests and personal interview to ensure that he will provide a good level of service knowing that the technicians are not employees in the company.

- personal interview
- Tests or certificates of experience
- A copy of his/her ID card is in the company
- Certificate of Criminal/ Police Record.



# System Description

Have you ever been in the position where any of your home gadgets or furniture got broken, and you don't know who exactly you should call to fix it, or maybe you need something to be fixed as quickly as possible, and

it's the weekend and only a few technicians are working, and you don't know exactly how to contact them. TechFix offers a simple and efficient solution to your problems. As TechFix contains the database for plumbers, carpenters, electricians...and many many more technicians to help you fix almost anything at any time. TechFix helps you find the best technician suitable for your problem, by giving you previous feedbacks about him/her from other previous clients. TechFix also informs you about the working hours of that technician, and his/her address if you want to go to the workshop yourself.



## Client

In order for anyone to enjoy the services of TechFix all he/she needs to do is to make a TechFix client account, where he/she will enter his/her username, password, contact info, and address. And that's it, whenever any service is needed, just open the website, and choose the best technician for that job. You can then rate your experience with that technician and write a comment about him/her. And you can even recommend technician to be added to our database.

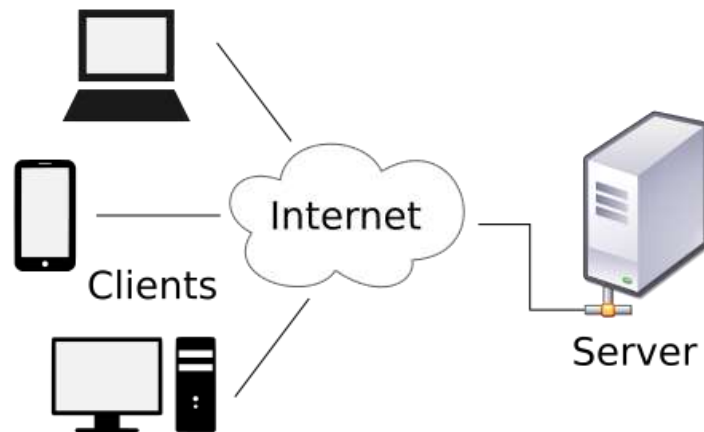
## Technician

If you are a plumber, carpenter, electrician or any other types of technicians, TechFix is offering you an easy and efficient way to run your business. Just make a Technician account on our website, where you will enter your username, password, type of service, available working hours, you contact info and your workshop address. And TechFix will handle your business from there, and send viable clients flying your way.



## System Architecture

TechFix System introduces a huge number of technicians to the users and many services the contents and services to both desktop users and mobile users via the web. The system consists of the following modules:



1. Storage
2. Data processing
3. Data analytics
4. Indexing
5. Technician area
6. General user area



## Storage

TechFix storage are divided to many parts

- Core storage for the data of the technicians
- System storage for the user data and fresh logs
- Indexing storage to support full text search
- Analytics storage to store the analytics and reviews of the technicians

All the storage in TechFix will uses MySQL database which will allow the flexibility needed for the system to add or remove user or technician at any time easily, MySQL database will also speed up the queries compared with raw data storage format.

System storage uses traditional structured database which provide better queries and data processing over structured contents.

## Data Processing

Data processing module is responsible for providing all data related services like the ratings and feedbacks for the technicians, the nearest technician to you and choose the technician from the category you want.

Data modeling is required to edit and add any data for the user or the technician.

Data classifier is required to classify the data according to location, rating and the category of the technician.

## Data Analytics

Tech fix holds a huge amount of contents including technician data, user interaction and logs This module is important to study the contents and produce a very useful result Basically this module support following data analytics.

Similarity analysis to determine similar technician accounts it's important to avoid that the same technician have more than one account

Review analysis to study the rating given to the technician and give the result of the average rating for this technician

Security analysis to study user behavior to avoid future attacks. Basically, this analysis users logs to study user behavior.

Statistical analysis to produce a set of statistical studies regarding contents and user's interaction. For example, this analysis can study the distribution of technician between the districts and the categories.

## **Indexing**

This module is responsible on indexing textual contents to allow internal full text search queries. Full text search is used by final users to find certain contents. Also, it is used by other modules like data processing to locate contents in a fixed time regardless the overall contents size.

## **Technician Area**

This module provides the Technician with the tools required to build an account for his business, technician can create account, add his phone number, add his location and his working hours he also can be reviewed and see the results and read the feedback about his work

## **General User Area**

This module provides user with main system activities like creating an account, add his location, add his phone number and search for Technicians in specific location, search for a Technicians in specific category and may be mix of both he can also write a feedback for the Technician and give him a rating about his work

## **Security**

Security module is responsible for user authentication and communications security. User can register/login using internal accounts or via their phones or common social accounts. The portal access is made using https protocol in order to secure the communication. Security module also, responsible for managing the permissions and roles. Users are either Technician account or User account.

# System Features

## Technician

### Create Account

Technician can create an account in order to participate in the website. Technician can sign up by providing his/her forename, last Name, date of birth, name of business and type of service. The technician can also add a thorough description of his/her provided services. Technician will provide his/her email, password, telephone number, Fax number (If available) in order for the clients to be able to contact him/her. He/she will be asked to set the workshop address, average working hours and days, in addition to his/her country, city and region. By doing so, the technician is ready to join TechFix community and expand his business online. TechFix will then show that technician's profile to any viable client. By then the technician can immediately practice his works through the website.

### Managing Working Hours

After the technician sets his/her average working hours at the beginning when setting the account, he/she will always have the option to edit these working hours according to their needs, circumstances and national days off. By this the technician is free to determine his/her flexible work hours and can let his/her clients know of any sudden or unprecedented closing of the workshop or suspension of his/her services temporarily at any given time for any problem that might occur. So that the clients may know at any given time the technicians and services available for them.

### Support Introduction Video

The technician can provide an introductory video presenting himself/herself, which services are provided and show some of their skills and samples of his/her previous works. The video will always be shown at the technician profile for all the clients to see. That video will help the technician to attract more clients and inform them of his/her experience in the field, which makes the clients more persuaded to request his/her services. This will help TechFix newcomers to get new jobs immediately even with their few numbers of jobs done on the website.

## **Badge Ranking System**

TechFix offers a smart and innovative way of evaluation of technicians, to make it easy for the clients to choose the right technician for the right task. The badge ranking system is a new and simple way to indicate the level for each technician by providing each one with a badge that shows his/her experience level based on his/her previous jobs done. When a technician first joins TechFix community he/she is given the badge (Newcomer) to indicate that he/she is new to the website, after some number of jobs he/she is given the (junior) badge, indicating that he/she is more experienced, and after another number of jobs, he/she is granted the final (senior) badge which will indicate that he/she is one of the most experienced technicians on the website. These badges won't only help the technician attract more clients as he gains more jobs and experience, but will also make the technicians eager to increase their badge rankings, and for the clients to find the best technicians.

## **Penalty System**

TechFix is focused on offering to the clients the best technicians possible in every field. That's why TechFix will perform a punishment system for the technicians who act badly. When some number of clients report a certain technician to TechFix, TechFix will then punish that technician by freezing his profile for a certain time period. That will prevent the technician from getting new jobs due to his profile is not available for clients during this time period. And if these reports were repeated, TechFix will suspend that technician's profile permanently.

## **Incremental Building of Jobs done**

As TechFix is eager to rise up with the technician along his/her career path. TechFix has an incrementation job system to show the clients each technician's experience. Whenever a job is done the client is asked to give a rating and feedback for the technician, by doing so that rating and feedback is added to that technician profile as well as his/her jobs counter is incremented. And as that job counter increases, the badge ranking rises and more clients are swayed into choosing that technician for future jobs.

## **Multiple platform Support**

TechFix will be available to open on any mobile devices also, as the website will be able to scale to any device size whether it's a pc, laptop, android mobile, android tablet, iPhone or iPad. That will help in achieving our goal in making TechFix services available for everyone anytime and anywhere.

## **Delete Account**

Every Technician at TechFix website will have the ability to deactivate and delete his/her account to be deleted from TechFix databases. But that deletion is permanent and can't be undone once the technician goes through with it.

## **Client**

### **Create Account**

The clients can create an account to participate in the site through which he can see the technicians and the type of service they provide and describe their services. The client creates an account by providing name, email, phone number, city and region where they can find technicians closest to their area.

### **Forgetting Password**

If you have forgotten your password and you previously entered an email address when signing up for the account or in your preferences, and you still have access to that email account, then this feature can help you recover your access to your account. Just choose password reset, where you can enter either your username or your email. If you are certain of your email, but not your username, only enter your email. The system will send a temporary password to your saved email address that will allow you to retrieve your account. You can change the password after you log in.

### **Change Password**

The system provides the clients the ability to change the password. If the client chooses to change his/her password, he/she will then be asked to enter his/her old password to confirm his/her identity, after the identity of the client is confirmed he/she are then asked to enter the new password, then save it. Once the new password is set, the old password is useless and that step of changing the password can't be undone.

## Searching Box

As TechFix cares about the speed for which the services are provided to its clients. TechFix is creating an easy way for any client to search and find the right technician for the job in as little time as possible. TechFix offers search by many filters such as:

- **Search by Name**

If a client is searching for a specific technician, who he/she is familiar with, TechFix is offering a filter for the search to search for a specific name directly, without the need for the client to scroll along the whole TechFix database for that specific name.

- **Search by Location**

Because sometimes the clients need something to be fixed as fast as possible. TechFix offers to filter the search results by your location, providing your city or region. In order for the clients to get a technician from the nearby regions to fix his/her problem as quick as possible.

- **Search by Category**

As TechFix is offering a huge number of different types of technicians including (Carpenters, Plumbers, Electrician, Mechanic ...etc.), it also offers a smart way to search among these categories to make it easier for the clients to find what they need. TechFix supports searching by category, as the client can choose which service does he/she needs and then the search will show only the technicians who provide that service.

## Clients Feedback

The clients' feedbacks offer information coming directly from the clients themselves about the satisfaction or dissatisfaction they felt with the technician or the service. Clients comments and complaints given to TechFix are an important resource for improving the technicians and addressing the needs and wants of the clients. After a job is done by one of the technicians provided by TechFix, the clients are asked to provide comments, feedbacks and ratings about that technician.



## Recommendation

If the clients know a technician, who they see fit to join the TechFix community, they can recommend him/her to join our website by sending his/her name, mobile number, his/her city and the service he/she provides. From there, TechFix will contact that technician and ask him/her to join the database, and if all goes well, that technician will then be added to TechFix technicians and TechFix will manage his online work.

## Delete Account

Every client in the website will have the ability to deactivate and delete his/her account to which will then be deleted from TechFix databases. But that deletion is permanent and can't be undone once the client goes through with the process.

# System Development and Operation

## Overview

The system development is performed using Agile methodology. Initial R&D activity should be applied to experiments tools and techniques. Later continuous R&D activity will run beside the system development activities. The first version of the system should take 12week. After release, the system will enter an initial operation phase for four weeks. During that phase the whole development team will communicate directly with the operation and business team. Later the system will enter the final operation and maintenance phase. During that phase a minor development team will provide an indirect technical support.

## Development Plan

	1	2	3	4	5	6	7	8	9	10	11	12
Study Requirements												
Management Planning												
Preparation												
Test Planning												
Implementation												
Research												
Testing												
System Testing												
Final Release												

## Operation Plan

	1	2	3	4	10 weeks later
Marketing					
Operation					
Maintenance					

Full time allocation of team members.



Small team or part time allocation.



## Team

Team	Role	#
Documentation team	Team leader	1
	Team Members	3
Front-End & UX Team	Team Leader	1
	Team Members	3
Back-End Team	Team leader	1
	Team Members	3

## Tools

TechFix will be developed using open source tools, languages and servers. Commercial tools will be used in case there is no open source alternative. This will decrease the cost especially for long term operation.

While development only online tools will be used for management, tracking, testing and source control. This will increase the collaboration between team members even they are not located at the same place. Also, this will allow external teams and members to participate.

Operation	Recommended Tool
Source Control and Versioning	GitHub/Git
Tasks and Issues Tracking	GitHub
Structured Database	MySQL
Programming Languages	HTML, CSS, Java Script, PHP Native.
Operating Systems	Linux (Centos/Ubuntu) ... Windows (Commercial, Single License)
Documents	Google Docs, Microsoft Online Word ...
Planning	MS Project (Commercial, Single License), Project Libre ...
Software SRS/SDA/SDD	Visio (Commercial, Single License) ...

## Cost

The system completely depends on free open source tools and languages. So there will not be many expenses before the production or launching phase.

The main cost will be

- Local Backup Server
- Online Production Server
- Online Backup Storage

## Assumptions

- The system completely depends on free open source tools and languages.
- The system is not responsible of the quality of the technician it's only showing his information.
- The system is totally free for users. The profit will be only from advertisements.

## References

**1. Commercial Technician Services (CTS):**

<https://ctsxpro.com/>

**2. SPIE:**

<https://www.spie.de/en/solutions/tech-fm/technician-services/>

**3. All World Machinery's service:**

<https://www.allworldmachinery.com/us/>

**4. Fixawy:**

<https://www.fixawy.net/en/>

**5. TASKTY:**

<https://taskty.com/>