Project: ServeMe System (SMS)

CSE 5325 – Spring 2022

Project Management

Module: Project Scope & Feasibility

Deliverable: Scope & Feasibility Document

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1. Introduction and Executive Summary

The SMS (ServeMe System) is a web, android and IOS based application. The objective of this application is to provide service based on request for user for their home or small business. Users can track their service request status (Request accepted, in-progress, completed). The website or app has a google location which can help in finding the near service providers. The applications will have the categories of services which can be sorted by option like graphical display or text which can be further explored by selecting the option of requirement, there will be a search option as well where a user can directly go and search for the required service instead of browsing through the menu or selecting one of the categories on home page, user can change the setting according to their preferences.

The website and mobile (Android/IOS) application must be ready in Three months (i.e.) from February 1, 2022, to May 1, 2022. In these 90 days trainings will be given so that developers can start working on the project.

- Allowing users to apply for various on demand service and additional features like location of the service providers and search options and user rating and reviews for the past services, discounts and helpful tips and updates are more appealing to the users, making it a good marketing strategy resulting in greater profit.

- This project helps with advertisement of the brand moving to service industry.

- The project ensures that the profit is more than the amount invested during its construction phase.

The tentative date of the project is May 1, 2022, it can be more or less because of the lifecycles, iterations, and testing process of the projects. The project is open for in between updates from the clients.

2. Objectives

2.1 BUSINESS OBJECTIVES

The following is the list of business objectives:

Objective 1: **Login** – We have two types of users, customers (service requestors) and vendors (service providers). Users will have to login before requesting service and the login will be secure with email verification.

Objective 2: **Payments** – All payments (paid by the service requestor and delivered by the service provider) will be handle via registered credit cards. A designated commission amount (e.g. 20%) will be deducted from the service provider. For example, if the customer is charged $100 for a delivered service, $80 will go to the service provider and 20% go to the client (i.e., the web and app owner)

Objective 3: **Service Categories** – Following areas of service are initially supported on the website and the Mobile App. Initially supported service categories are:

- o Appliances
- o Electrical
- o Plumbing
- o Home Cleaning
- o Tutoring
- o Packaging and Moving
- o Computer Repair
- o Home Repair and Painting
- o Pest Control

Objective 4: **Vendor Registration**: Vendor will have to register to become an approved vendor (service provider) for one or more of the service categories. Vendor must provide contact info including phone, address and e-mail. They can optionally provide rate samples (e.g., how much to fix something, or per hour of labor). They must also agree to pay a small portion of money received (e.g., 20%) as fee to the application holder.

Objective 5: **Customer Registration & Login**: Customers (i.e., Service Requesters) can optionally register and login to the system. They can also order place a Service Request (SR) without registration and login, this can be done as a guest. If they choose to register and login, they will be able to receive points, they will also be able to review Service Providers quality of Service, could get discounts, and receive helpful tips and updates. To register, they must provide full name, email, and phone number.

Objective 6: Setup: There will be following setup control fields such as: Sounds **on**/off, receive communication **yes**/no, use points toward a service yes/**no**, dark mode on/Off/**Default to system.** If a customer cancels before 24 hours, there are no deduction of points, but if the customer cancels in the last 24 hours of the service to be provided, points will be reduced.

Objective 7: Place a Service Request (by Customers): The customer will be able to select a service category and place an order soliciting for bid by the service providers. They will be able to finalize the selection after reviewing all bids.

Objective 8: Cancellation and Change: Allow customers to cancel or reschedule service dates.

Objective 9: Accept a Service Request (by service provider)): Provide bids for Requested services to customers. After the bids are provided, customer will be able to select the service provider based on the bids.

Objective 10: Review and Rating (by customers): We are providing with star-based review system, the customer will also be able to upload a picture in the review and rating section (this field will be optional). They can also provide a brief comment in the comment box in the rating and review section.

Objective 11: Order History: Customer will be able to review their order summary and past order history in this section.

Objective 12: Search: Requestor will be able to search by "Service by type", "Service by Provider availability date", "Search by Rating", "Search by Price", "Search by urgency" and other search types.

Objective 13: Map: Both the vendor and customer will be able to know each other's location by the help of integrated google map.

2.2 SYSTEM OBJECTIVES

The following is the list of system objectives:

Objective 1: The application will be Android/IOS based app, available free on Google Play/App store and a web application.

Objective 2: Search functionality will be included in the application for quicker browsing of service types based on various criteria.

Objective 3: The app will be functioning 24x7 and the database servers will be setup at a datacenter for continuous working.

Objective 4: Customer will be able to contact the service provider and vice a versa.

Objective 5: Number of Users – Able to handle 500 simultaneous connections at any time. This can be achieved by using the concept of Concurrency in Operating Systems as well as in Database.

Objective 6*:* Guest users can browse through the application without the need to create an account but features such as keeping track of diet, notifying the users to take a drug will be available only for signed up user accounts.

3 Project Feasibility, Risks and Metrics

Project feasibility and metrics are summarized below:

3.1 PROJECT FEASIBILITY CONCERNS

Technological considerations: We need some environments like Android Studio/Swift and Visual Studio code and databases. The above environments are open-source tools, so they are not included in the cost.

Cost: The application will require initial investment for trainings on Android/IOS application development. This is because certain developers in teams are not aware about android/iOS app development environment.

Existing Marketplace: The service industry is booming because of COVID-19 people are avoiding going places in person and getting the job done. There are many Service providing applications in the market, but SMS is different because its unique and a one stop solutions for all kinds of people and services. Also, due to high usage of internet and mobile phones everybody has an equal access to the application.

Resources: To accomplish the project within given period, there will be quite several people to be involved in the project such as IT Analysts, Application Analysts, Developers, Designers and Managers. Other resources include separate machines for every developer to carry out software development.

Technical Issues: There might be issues sometimes in the environments because they are third party objects, in that case all we can do is report them. The other issue which could rise is android developers they could be very slow when implementing the project due to in-experience in the Android development.

Time to market: The project shall reach to market in given period for that, quite a sum of budget would also be spent in marketing the application so that people are aware about it.

3.2 PROJECT RISKS

Some of the project risks and their mitigation actions are as follows:

RISK	MITIGATION ACTION
• **Scheduling issues of the overall project.**	We can hire trained employee or increase the number of employees early in the project, more employees surely don't mean faster deliveries but if we already have some trained people will reduce the time of production.
• **Risk of cost over runs**	To overcome this, we can keep track of the costs by the phases and keep some amount safe for later and not use all the funds and
• **Resource Allocation Risk**	We should make sure we are using the space and time allocated are optimal and have highly skilled programmers which can perform such operations.
• **Information Security Risk**	Use of secure HTTP protocol (https://) and 256-bit AES encryption for data transmission.

3.3 PROJECT METRICS

We can determine the success of the project by metrics system, and evaluate the project status, foresee risks, and assess quality and productivity of teamwork. Objective and metrics differ with the managers style of management, each manager chooses the style which works with their terms. However, below mentioned metrics cover a major part of Product development

1. **Productivity**- Productivity allows to evaluate the use of resources. It associates the total effort to the budgeted effort, which has a direct impact on the bottom line. Delays in the timeline, underperformance by staff or vendor and unavoidable circumstances can all impact the productivity metric.

2. **Scope of Work** – A project's scope is typically established right up front, but changes and additions can impact the success of project. Tracking about the development is necessary and to control them and keep the project in line with the estimation.

3. **Quality**– Assuring low defects and quality throughout the project, should be part of every project. Catching defects early can also prevent the project from losing track.

4. **Cost** – Cost management is related to factors, such as, scope, productivity and quality. Hence, variations with respect to the projection may cause the project to suffer. This is monitored throughout the project so if change occurs, variables such as scope or time are adjusted, the project can still achieve its objectives.

5. **Utilization**– Utilization of the product by the users is important as many people using the application satisfies the main scope of the application. If many people start using the application, more advertising can be generated which can result in some profit for the application and more feedback can be received which can be used to better the application.

4 Project Scope and Process Model

Project scope includes the following:

1. The default landing page for the user will be the welcome page, any user be it service requestor or service provider will land on the same page.

2. Users will settle their payments by using registered credit card.

3. Users order history and payment history will be maintained in order history tab.

4. Customers (service requestors) ca access the application in guest mode, but the service provider will have to register and get verified to be able to provide the service.

5. Customers search history will be preserved; they can decide to delete the search history.

The following is a list of items out of scope:

1. Post project maintenance

2. Customer recommendation and data analysis post project completion.

3. Customer's complaints should be addressed by the owner of the application post release.

4.1 PROJECT PROCESS MODEL

To ensure that the project is completed effectively, it is best to develop it using the Waterfall process model, which is most suited for the idea and team size. As we know the waterfall project management approach is separated into phases with the outcome which is mostly dependent on previous phases

Waterfall Methodology is selected because it is the best suited in this situation as there are people working in the team and each teammate can be assigned a specific task in a phase and can be closely monitored and can rapidly adjust things as needed, throughout each task. Also, with the current budget allotment this model is the best suited model.

Below are the phases of Waterfall Methodology

- Requirement Gathering and analysis

- System Design

- Implementation

- Integration and Testing

- Deployment of system

- Deployment

- Maintenance

4.2 PROJECT CONTEXT
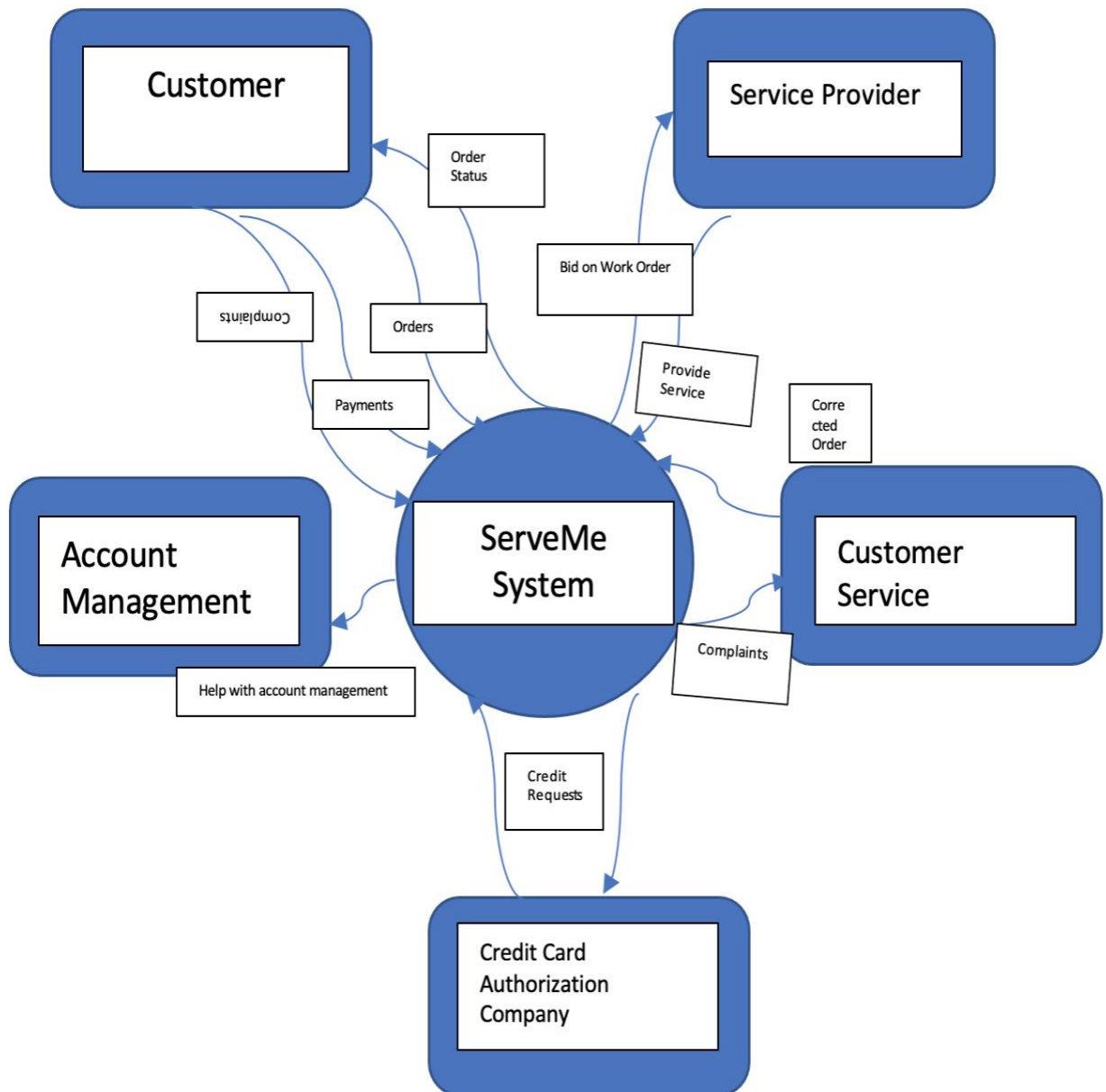
5. Assumptions and Constraints

5.1 ASSUMPTIONS

The following is a list of assumptions:

- All users of the website/app are over the age of 18.

- Ignore any TAX issues.

- Ignore any vacation and social and health insurance costs.

- Ignore Post project maintenance issues

- Ignore any contract negotiation and legal concerns. Keep in mind, in real life; this is one of the most important aspects of the project. Try to maintain the full control over the source code whenever possible.

- Internet Connection: Both the customers and the employees have access to a reliable internet connection.

- Payment: Customers can pay only through registered Credit cards.

- Website Availability: The website is available whenever there is an internet connection.

- Payment: Customers can pay only through registered Credit cards.

5.2 CONSTRAINTS

The following is a list of constraints:

- Our developers are not trained in Android/IOS programming

- Project schedule too short, application and web application are supposed to be developed only in 87 days

- If there is a similar website/application with relatively similar concept, then the project should survive the growing demand in the market whilst competing with potential competitors.

- If there is no internet connection, our website/android application is not accessible.

- If there is a maintenance cost involved, then that must be taken into consideration if there is not enough cost allocated for it and an unforeseen incident result in more expense than what was planned earlier.

6. Project Tasks, Schedule and Cost

Level No.	Tasks	No. of units	Cost/hour	Total cost
1.0	Project Management			
1.1	Project Manager	1	$100	$69600
1.2	Resources	6	$50	$208800
2.0	Health insurance (50% extra surge)			$220,000
3.0	**Hardware**		**Cost**	
3.1	Servers	4	$1500	$6,000
3.2	Monitors and Desktops	7	$4,000	$28,000
3.3	Other Devices	7	$500	$3,500
4.0	**Software**			
4.1	Operating systems License	7	$60	$420
4.2	Database License	1	$250	$250
4.3	Other Software/Security licenses	7	$100	$700
5.0	**Testing**	7	$100	$700
6.0	**Training**			
6.1	Creating backups	7		$10,000
6.2	Learning and Features development	7		$80,000
7.0	**Deployment**			
8.0	Recreation and Team outings	7		$20,000
9.0	Project Reserve for Emergencies	1		$150,000
	Total Project Estimate			$797970

The project cost estimate without any profit is $797970. The profit margin is 50%.

The project cost estimate along with the profit margin is $1196955.

7. Conclusion and Recommendations

Thus, the project has been planned and implemented in phases to ensure that the most important functionalities of the project are implemented and made available to the customer. It is ensured that every module has been implemented with high quality and very less defects/bugs within the duration of 3 months. We can finish the remaining modules if we get some extended duration of up to 2 – 2.5 months

Although there were some potential risks like,

- Project Deadlines

- Funding the Project

- Promotion time

- Quality of the product

- Market Release of the Product

My recommendation to the board of directors would be to increase the number of resources involved in the project as this will assist in finishing the project well within the deadline and could also ensure that, more additional features to be included in the application, thus making sure that the profit margin estimates increase for the company. This will be highly useful in investing in company's future projects. This would also pave the way for other potential customers in the field of dealership market to invest in the application. Having a big group of customers would make us increase our market share. This would be a steppingstone to meeting our business objective of becoming #1 in the market. We can also create a nice market for this application by having a really good marketing pitch.

Appendices

- https://www.projectpractical.com/20-project-risk-examples-and-their-mitigation-strategies/

- https://www.simplilearn.com/feasibility-study-article

- https://www.wrike.com/project-management-guide/faq/what-is-a-feasibility-study-in-project-management/

- https://www.edrawmax.com/context-diagram/

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- https://www.guru99.com/what-is-sdlc-or-waterfall-model.html

- https://online.visual-paradigm.com/repository/images/9392add4-3638-48b6-aa67-b0bd9493dbbd/system-context-diagram-design/system-context-diagram-sample.png