

# FEASIBILITY STUDY REPORT

*DATE: 21/01/2023*

*COURSE TITLE:  
SOFTWARE  
ENGINEERING (CS301)*

*TEACHER'S NAME: Dr.  
UMA S.*

# TEMPUS

*(A time tracking and  
invoicing app for  
freelancers and small  
businesses)*

## **INTRODUCTION:**

*The app will be designed to help freelancers and small business owners easily track their time and create and send invoices to clients, and end users. It would include a timer function and the ability to manually enter time worked, customizable invoice templates and the ability to accept payments online, project management tools, reporting, and user management.*

*The target market for the app would be freelancers and small business owners who need a simple and efficient way to track their time and manage their finances. With the rise of remote work, the market for this type of app is growing rapidly.*

*Instead of creating different pages for each type of user, information and privileges will be restricted or granted depending on the type of user that logs in.*

*Much of the understanding of the requirements and feasibility of this report is dynamic in nature and will be made more accurate and optimal as the project goes on.*

## **BUSINESS PROFILE:**

*As this app is targeted towards a market and not a single company, it is irrelevant to have the profile of a single company.*

*This application is designed for small sized businesses and individuals that could benefit from digitizing their records and workflows to enable greater productivity and cost-saving.*

## **SCOPE OF THE PROJECT:**

### **1. Stakeholders:**

- 1. Small business owners: Businesses with a small number of employees that need to track time and bill clients for their services. These are the stakeholders with the most influence as they are the intended main market.*
- 2. Freelancers: Independent contractors who need to track time and bill clients for their services. This group of individuals is tech-savvy and would freely embrace any technology that is intuitive, convenient and optimizes their workflow. They are the secondary stakeholders.*
- 3. Agencies: Businesses that provide services to multiple clients and need to track time and bill clients for their services.*
- 4. Consultants: Individuals who provide consulting services and need to track time and bill clients for their services.*
- 5. Solo entrepreneurs: Self-employed individuals who need to track time and bill clients for their services.*

*The end users will have different needs and use cases, but generally, they all need a tool to track time, create invoices, and manage clients and projects.*

## **2. Main use cases intended on preliminary analysis:**

- 1. Time tracking: The app will allow users to easily track their time spent on specific tasks or projects, with the ability to track billable and non-billable hours.*
- 2. Invoicing: The app will include a feature for creating and sending invoices, with the ability to track payments and send reminders for unpaid invoices.*
- 3. Project management: The app will include tools for managing multiple projects, including the ability to assign tasks, set deadlines, and track progress.*

4. Client management: The app will include a feature for managing multiple clients, including the ability to store client information, track communication, and create reports.

## **METHODOLOGY:**

*The methodology used for this feasibility study was:*

- a. Interviews: We interviewed local freelancers and small business owners (who are the end users and stakeholders) to better understand their problems corresponding with the project scope. The goal of the interview was conveyed to the interviewees in advance. All the interviews held were planned with a predefined set of questions that were designed to facilitate the research. This helped us understand the problems faced by the stakeholders, their requirements, needs and interests and the importance of time-tracking and invoicing in their work. The results can be found in the methodology section.
- b. Research on the internet: We looked up several online platforms offering services similar to the ones this project required and found some like MinuteDock and actiTime. It was noticed that these apps either focus on freelancers(the developers) and have no functionalities for business owners. We also looked at some applications for business owners but they suffer from a lack of features for more tech-savvy freelancers. Links can be found in the glossary.

## **INTERVIEW WITH A LOCAL FREELANCER:**

*The following are the amalgamated results we got from the interviews. It includes the questions asked and the answers to them.*

*Q. How do you find clients to work for?*

A. The best way to find clients is to improve and expand your network. Another way is to hire middlemen to get clients, who receive a concession fee for each client that they connect the freelancer to. Freelancers are ranked on the basis of the reviews the clients give to them which provides credibility to their work. The client's positive feedback for a project thus helps attract new clients.

Q. What is the criterion on the basis of which you are paid and how much are you paid?

A. Whenever we get a new project, the client and the freelancer discuss the expectation of the client. After getting an idea of the project, the freelancer recommends features to include in the website/app. The client chooses the features after which the fee is negotiated on the basis of hours required by the freelancer to complete making a feature as well as the price the freelancer quotes for each feature. The fee is decided when both parties agree to it.

Q. What happens after the freelancer finishes his part?

A. Then the Quality Assurance is done where the product is tested and the errors/bugs are to be fixed. However, the freelancers aren't paid to fix the bugs. After all the bugs are fixed, the project is deployed.

Q. How is the product maintained then?

A. The freelancer can be asked to maintain the product for 3-4 months but not longer than that.

Q. Do you use invoices?

A. Yes, the invoice we use is a document with all the features made and the hours taken to make each as well as the price for each feature based on the hours. All invoicing is done through GST and it is extremely important to

*include the import details in the invoice like GST number, name, products, price, etc.*

## **CHALLENGES FOUND IN THE PROJECT STUDY:**

*The challenges faced are:*

### *1. Lack of accuracy in tracking time:*

*Freelancers must often track the time of multiple clients and projects. They need to ensure that they are accurately tracking the time they spend on each task, to ensure they are billing their clients correctly. Without appropriate software, it would be difficult for freelancers to accurately track their time. This leads to problems in classifying billing and non-billing hours, sometimes under payment or overpayment.*

### *2. Managing multiple invoices:*

*Creating and sending invoices to multiple clients are often time-consuming and difficult to keep track of. They should also deal with different billing cycles and payment terms for each client.*

### *3. Maintaining multiple projects at once:*

*To maintain multiple projects at once, it is important to prioritize tasks and stay organized. Tracking and maintaining multiple projects at once can be challenging because it requires a high level of organization, planning, and time management skills. Some of the difficulties that may arise include difficulty priority tasks, lack of focus, difficulty in keeping track of progress, etc.*

#### 4. Staying Organized:

*Freelancers often work on multiple projects simultaneously and need to keep track of deadlines, deliverables, and client communications. This can be challenging if they are not using appropriate tools to keep everything organized.*

#### 5. Staying compliant with time tracking and invoicing regulations:

*Freelancers have to comply with different time tracking regulations and also comply with different tax and legal regulations depending on their location and their client's location. Keeping up with compliance can be challenging and may require additional resources.*

#### 6. Handling disputes:

*Freelancers may face disputes with clients over billing or project deliverables. This can be time-consuming and difficult to resolve, and may negatively impact the freelancer's reputation.*

#### 7. Limited Scalability:

*Limited scalability in time tracking refers to the difficulty of tracking time effectively as the number of projects or team members increases. This can happen for a few reasons including lack of automation, insufficient reporting, limited access to data, limited data security, etc.*

#### 8. Privacy Concerns:

*Privacy concerns in time tracking software refer to the potential risks to personal and sensitive information that can occur when using these types of tools. Some of the specific concerns include data collection, data security, data sharing, location tracking. The users are generally concerned with cloud based softwares and their data shared with the third party.*



#### 9. Finding the right invoicing and time tracking tools:

*There are many invoicing and time tracking tools available, but freelancers may have difficulty in finding the right one that meets their specific needs and budget. Freelancers may need to integrate time tracking with other tools such as project management, invoicing and billing software to ensure they have a complete picture of their work and client billing.*

#### 10. Omitting important details from the invoice:

*An invoice does not only comprise of the description, quantity and prices of the products and services given but also other necessary details such as the company/business's legal name, invoice number, seller's GST number, payment mode, payment terms, payment date, tax added, etc. However, a lot of small businessmen are unaware of this and do not add the above details to their invoice.*

#### 11. Delay in sending invoice:

*Some business owners/ freelancers forget to send the invoice to the client, this may cause a delay in getting paid or in some cases, lead to not getting paid as invoice is necessary to be sent to the buyer in order to get paid. This also acts as the proof of earned income when paying tax.*

#### 12. Theft:

*When business owners don't track the products/goods, they may face losses if these products are stolen. A digitalised inventory will help keep a track of the products and avoid any unknown thefts.*

## **THE RESULTS OF THE FEASIBILITY STUDY:**

### **Technical feasibility:**

We will be developing a user-friendly web based application. The following aspects need to be considered:

- Platform and Technology: The application will be developed using Python(FLASK) for backend, JavaScript(ReactJS) along with HTML and CSS for front-end and MySQL as our databases(since ours would be a small database)
- Integration: Ensuring that the application can integrate with any existing systems that the small business or freelancer may already have in place, such as accounting software, to ensure a smooth and efficient workflow. Our app would have to have features allowing for this. This aspect would have to be considered during the design phase seriously.
- Security: The application should be secure to protect sensitive data and financial information of the clients. Our application would have authentication done while logging in and information and privileges would be granted or restricted based on the type of login.

### **Financial Feasibility:**

Being a web application, it would have an associated hosting cost. In the beginning we would use heroku, a free hosting service and this would later be changed to a more secure server once it gets up and running. Since the system doesn't consist of multimedia transfer bandwidth required would be minimal.

The system will follow the trial model, meaning no cost will be charged for customers until a certain user base has been established then each customer will be given a free trial for a limited time period after which payment would be required.

Bug fixes and maintenance would have its associated costs and would need a dedicated team at the later stages of the project. Besides the associated costs, the benefits provided to the customer would be huge and would include portability, digitisation and security along with relevant data analysis tools.

*So in the long run, this project would be financially feasible.*

### **Resource Feasibility:**

*Resources required are as follows:*

- a. Hardware(Computers capable of programming i.e laptops and desktops along with required peripherals such as data drives, keyboards etc)*
- b. Hosting Space(Heroku, freely available, will be used in the beginning but a secure server will be required at the later stages)*
- c. Programming tools(Text editors, DBMS, compilers and interpreters. We shall use the open source versions of these softwares)*
- d. Human Resources(People capable of programming the relevant tech and all the associated costs such as healthcare, vacation, salary etc that comes with it. Currently, we are a team of four)*

*Granted the resources in question(\$2 million) it is safe to assume that this project is feasible at least in terms of resources.*

## **RECOMMENDATIONS:**

### *1. Identify and define the key features:*

*The first step in building a time tracking and invoicing software is to identify the key features that are required to meet the needs of the target users. Some of the key features may include time tracking, invoicing, project management, and reporting capabilities.*

### *2. Consider scalability:*

*As the software will be used by the different types of business, it is important to consider scalability design. Software can be easily adapted to meet the changing needs of users, regardless of their business size.*

### *3. User-friendly interface:*

*Success of a software can also be defined by its user-friendly interface. A user-friendly interface needs to be intuitive and easy to navigate with*

*clear instructions and the ability to guide users through the different features.*

4. *Integration with other software:*

*To maximize efficiency, the time tracking and invoicing software should be able to integrate with other software that include accounting software, project management tools, other business applications.*

5. *Advance reporting and analytics:*

*Advanced reporting and analytics capabilities are important for businesses to understand how their employees are spending their time, and how to optimize their workflow. The software should provide real-time insights and historical data for accurate tracking and invoicing.*

6. *Security:*

*Security should be a top priority when building the software. The software includes security features to protect user data and prevent unauthorized access.*

7. *Test and refine:*

*Before launching the software, it is important to thoroughly test it and get feedback from users to identify and resolve any issues. This will ensure that the software is effective, secure and user-friendly.*

**TEAM NAME : “TEMPUS”**

**STUDENTS :**

1. Shaikh Ammar (21bcs105)
2. Shriya Patore (21bcs115)
3. Karan R Naik (21bcs051)
4. Nithish Chouti (21bcs074)

**GLOSSARY/REFERENCES:**

- *GST Tax Invoice:* <https://www.cbic.gov.in/resources//htdocs-cbec/gst/tax-invoice-efliers.pdf>
- *Website for actiTIME* - <https://www.actitime.com/>
- *Website for MinuteDock* - <https://minutedock.com/>
- *Website for invoicing mistakes:* <https://keap.com/business-success-blog/business-management/10-invoicing-mistakes-small-biz-owners-make>

--- X ---

