Techsy – AI services market place

System analysis & Design Capstone Project Preliminary Study

Team members

Our group has 3 members:
1. Nguyễn Vũ Thiên Trang
- ID: 20194459
- Email: trang.nvt194459@sis.hust.edu.vn
2. Nguyễn Văn Thanh Tùng
- ID: 20190090
- Email: tung.nvt190090@sis.hust.edu.vn
3. Chu Hoàng Dương
- ID: 20194429
- Email: duong.ch194429@sis.hust.edu.vn

We are under the guidance of: PhD. Nguyễn Nhật Quang
- Email: quang.nn@soict.hust.edu.vn
- Subject: System Analysis & Design
- Subject ID: IT3120E

Executive summary

We are going to develop a marketplace called "Techsy". Sellers, administrators are our team. We provide the platform, the management, and the tools. Our target clients are businessman who are looking for AI tools to help them in business work. The platform allows customers to pay and directly use AI tools easily and effectively.

Platform overview

Objectives

The platform is designed to meet people's business purposes. In detail, customers are those who are in demand for tools to boost their business productivity and effectiveness.

Business objectives

The project aims to develop a complete marketplace for the clients who, in this case, are customers. This platform should attract a large number of customers, bringing profits to the team. Besides, this creates a premise for our team to build a reputation with products. A prototype of the platform will be developed, tested, and deployed in time for this semester of 20221.

User roles and responsibilities

Customer: they can access the platform and directly pay and use our products online. Detailed instructions, operations, business tasks are all included to help customers adapt quickly to the platform.

Interacting with other systems

Currently, the system works integrated with customers' payments related parties.
With the AI models, the development team may use API from third parties.

Production rollout considerations

Design and development of all features will be completed after phases within 3 months before the platform is put to test and released. During these stages, we will have specific discussions and report to our representative, Mr. Nguyen Nhat Quang.

Functional Analysis

The platform

The platform will be a web app. By development the web app, user can easily approach the platform through browser instead of download an mobile app or desktop app.
We have considered some frameworks to develop this kind of web-app platform like express, rails, or Django. But because all 3 members of our team are familiar with python, so our choice is using Django web-app development framework.

The AI services

We will develop AI models, that are integrated into our platform. In the case absence of sufficient resources, we could integrate the API of third parties instead.

User information

User can register, login account by authenticated username and password.
The personal information of user should be saved to the database: phone number, name, email.

User packages and payment methods

Customers will have a wallet and they will have to top up this wallet through different payment methods like momo, vnpay or internet banking.
Therefore, after each service use, customers will be deducted money directly into this wallet.
Customers can choose different service packages: by turn, by month or by year.

Order a service

When the customer orders a service, the system will process the order by the back-end API and return the response to the customer: model's output, state of order.

Security

For customers: we provide customers with a business license or a business account.

For related parties: we will coordinate with customers to deploy copyright security methods and avoid the appearance of rampant crack versions on the market.

Technical Feasibility

Time Synchronization

Our platform stores the request information of the customers, including input, output, process time, request state (success/false).

Data Storage & Synchronization

We have a basic database as follows: the customers schemas containing features of an account, the transaction schema contains the purchasing features, the product schemas having the tools information. All of the schemas are broken down carefully following normal forms.

The system will update the data from each request of users.

Automatic Notifications

The system will send notifications to the user about the system, update, activities, …

Security

Confidentiality is maintained to ensure the integrity of the data, although beneficial or harmful modification is not expected.

It should be noted that the final system delivered to the customer may be different from the technically viable system described in this template report.

Focus on future system requirements will be implemented and an optimized architecture will be adopted.

Risk Analysis

The team will analyze the risks that they may encounter in working. As with any project, it is possible to take risks. Three main types of risk have been identified: **time**, **resource**, and **functional**.

Time risk

Since the course requirements state that the project must be completed within one semester, any extension is impossible.

This leads to the risk that the system may not be completed with the full functionality the customer wants within a given time frame of a semester.

In this case, there is also a second risk of the system being delayed in deployment if the customer chooses to wait until the system is fully operational.

Resource risk

Resource risk relates to the technologies the team has available to use. Due to cost and other external constraints, the team may not have the necessary or best resources to complete parts of the system.

For example, a resource identified as team members will need laptops running the Windows operating system. In addition, there are inherent risks in resources, such as software and hardware, that the team decides to use.

To keep costs to a minimum, the team is looking at free, open-source software. The hardware to implement the actual system also depends on the hardware on which the library is available.

Resource-borne risks include hardware failure, system crash, bugs in code, etc., which can cause accidental data loss.

Functional risk

Functional risk is related to how the system works.

Issues that fall under this category include developing user interfaces that are not user-friendly or unpopular with customers or producing functions with limited sustainability.

The most considerable risk comes from developing a system that doesn't do what the customer wants.

Of the three types of risk, the functional risk is the easiest to reduce because functional constraints are more flexible than time or resource constraints.

However, functional risk reduction is often accomplished by omitting specific parts and/or functions of the system, as reducing functionality naturally reduces its associated risks.

The team wanted to avoid doing this as much as possible. Customers must be aware that this can be done to deliver the system by the due date at the end of the semester

Risk management/ Mitigation

Having outlined the primary risks associated with this project above, the team prepared to take preventive actions to reduce these risks.

Principal planning is the development and practice of sound management strategies. As discussed in the previous sections, the team intends to divide the project into a series of iterative phases that have specific milestones.

These milestones will provide project visibility and allow clients to see the team's progress at each stage.

Multiple simulations will allow customers to assess usability, increase familiarity with the system, and shorten the time.

Conclusion

The team will give a conclusion and general feasibility of the group's project. From the feasibility study results, our team found that the TECHSY marketplace project was feasible in terms of technique, team members' skills, and time.

With the time limit of one semester, the team believed that the project's scope was manageable and that the mentioned requirements could be satisfactorily met upon completion of the system.

Team members are also skilled enough to implement the system and are familiar with the hardware and software used in this project.

The conclusion of the feasibility report is to continue with this software development project