Information System Practice(PRT 547)

Assignment I
Project Proposal

CHARLES DARWIN UNIVERSITY

"Developing Job Portal Management System for IT Code Fair"

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Table of Contents

List of Figures

List of Tables

List of Abbreviations

CDU	Charles Darwin University
NPV	Net Present Value
ROI	Return on Interest
SWOT	Strength, Weakness, Opportunity, and Threat

1.   Executive Summary

The Territory Labor Government has initiated its International Education and Training Strategy to accelerate the growth of its share of the profitable international student market. The seven-year plan is a critical component of the NT's "roadmap to economic recovery through economic diversification, population growth, and local job creation."

"By 2025, it aims to increase the number of international students in the NT from 2500 to 10,000, doubling the market's current economic contribution of $91 million to more than $300 million," the report states. - The Northern Territory Government (Asia 2019).

a. Current situation and Problem

Students and prospective employers must wait for the actual event in NT to talk about employment opportunities, exploring projects done by CDU IT students. Moreover, networking opportunities are not about only at the event, it should be done frequently.

This project proposal explains the importance of developing a management system that will improve the job portal and networking between IT students and companies in the NT. CDU IT Code Fair Portal is an attractive project regarding estimated costs, benefits. Additionally, it validates the preceding case by considering the project's purpose, requirements, budget, and schedule before the actual event in November.

This platform will be developed with the following aim:

- To enhance the employment opportunities and its method in the Northern Territory
- To create a user-friendly platform that will encourage students to build their profile to be listed for employer's contact.
- To encourage interaction between students, government, and companies.

b. Project Management Methodology

As per the project's requirement, AGILE methodology would provide the accessibility to modify the scope or gradually improve the service. During the SDLC (System Development

Life Cycle), in case of issues, phase testing, and deployment, the system will have fewer bugs at the end of the development phase.

2. Organizational Overview

a. Introduction of Organization

Charles Darwin University (**CDU**) is one of the best universities in Australia in terms of graduate employment and earnings. This creative, sustainable, innovative, and inclusive new world university, which ranks highly in global university rankings, educates about 20,000 students from 68 countries on 11 campuses and training centres in over 100 regional and remote areas.

CDU is the only university in Australia's Northern Territory region and the closest Australian institution to Asia. Due to the university's long history of educational delivery in northern Australia and its history of innovation, it is well-positioned to enhance lives and contribute to the region's and more extraordinary Asian continents' future growth (CDU 2019).

The proposed system will focus on students, employers (Companies offering IT Jobs), career and placement opportunities within the Northern Territory. This proposal will focus on integrating a platform in the existing CDU IT Code Fair web system. Furthermore, it is also about the accessibility which students and potential job providers seek for. The benefits from the actual event can be received from the site itself, where prospective job seekers and providers can enjoy networking sessions with local government and other IT Professionals.

b. Organizational Structure

Currently, Sami Azam, Bharanidharan Shanmugam, Cherry Narumon Sriratanaviriyakul, and all the faculty members from IT Discipline are managing the CDU IT Code Fair along with project officers and brand ambassadors. The Code Fair has risen in popularity each year, with

hundreds of IT students anticipating the event made possible by the NT Government and local IT sector (ITcodefair 2019). The targeted users of this system are the users involved in CDU IT Code Fair with the structure as follows:
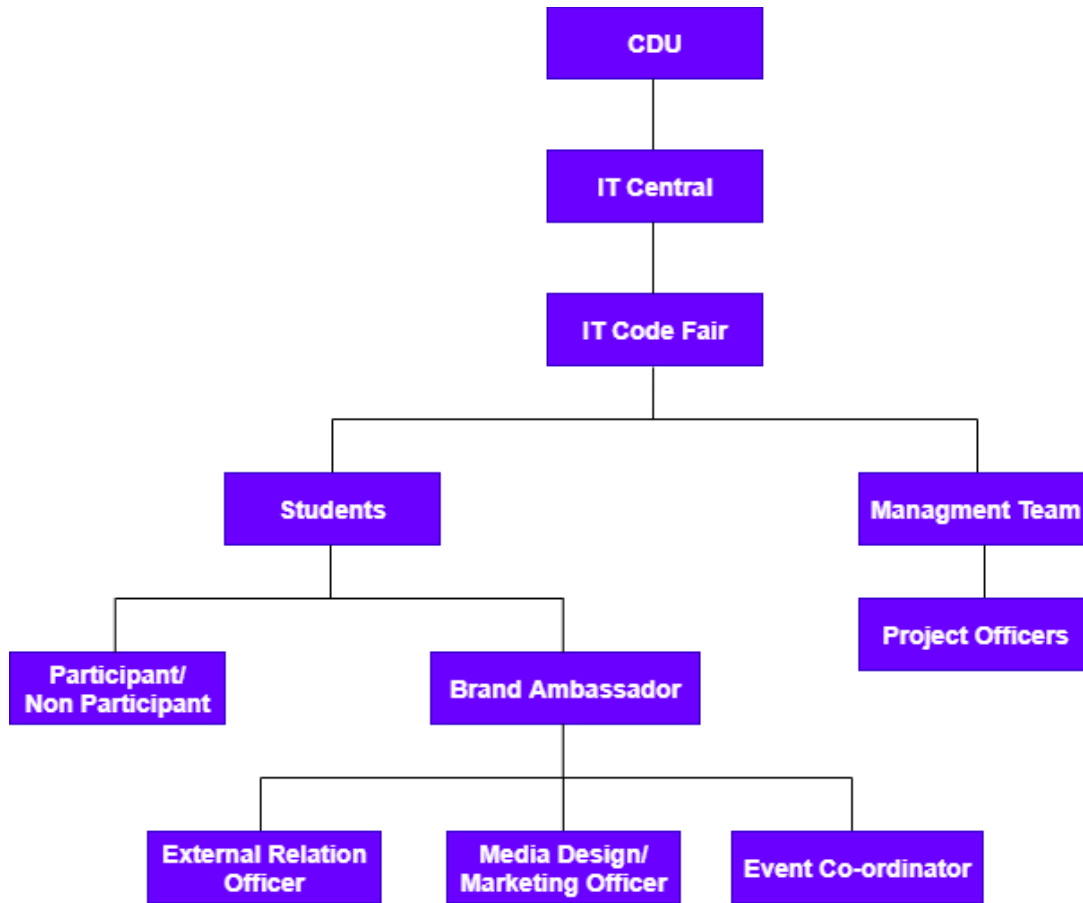
Figure 1: Organizational Chart

c. Products and Services

CDU IT Code Fair provides the platform for IT enthusiasts. It provides a chance to recognize and promote students' skills by exhibiting their work to the University and industry communities. This annual event helps raise awareness of information technology education and training among local middle and high school students, including female and indigenous students.

d. Competitors

CDU IT Code Fair doesn't have any competitions as of now in the Northern Territory. However, its competitors are the external portals in Australia that provide similar functionality.

3. Issue and Opportunity

SWOT method is commonly considered a technique for evaluating the performance inhibitors and enhancers that an organization deals with in its internal and external environments (Pershing 2021).

a. Context & Analysis

i. SWOT Analysis

	SWOT ANALYSIS	
	STRENGTH	**WEAKNESS**
INTERNAL FACTORS	1. Larger market in NT 2. Catered to students and potential employer 3. Easy integration to existing CDU website 4. Low implementation cost 5. Between 2016 and 2021, the market size of the Online Recruitment Services industry in Australia increased by an average of 0.4 percent per year.	1. Technical Bugs and Issues 2. System will have new experience to the user, meaning user may need assistance or guideline to access it
	OPPORTUNITY	**THREAT**
EXTERNAL FACTORS	1. Expansion of portal to other states or universities 2. Implementation of Monetization procedures 3. Companies completely relying on the portal for recruitment purposes 4. The bond between company and university will be stronger, meaning ease of getting a job or an internship would increase the satisfaction level of both company and students	1. Entry of potential competitors into the market 2. Our technology may be obsolete, or newer technology may render it obsolete. 3. Unable to keep up with the trend will result in less people using it

Figure 2: SWOT Analysis

ii.   Porter's Five Forces Model

+Integration to current CDU IT CodeFair Website
would be cheaper than competitors
+Knowledge of technology, Programming is a must
- Anyone could develop similar services
via other existing portals

Threat of New Entrants

+ There is no rivalry factor
+ Loyal users like CDU students
- Switching costs is less

+ Niche availability, as consumers are
students and employers within the NT

Supplier Power

Competitive Rivarly

Buyer Power

-Switching between suppliers is convenient

- Other Job portals are present in the NT
+ No IT specific portal is there

Threat of Substitute

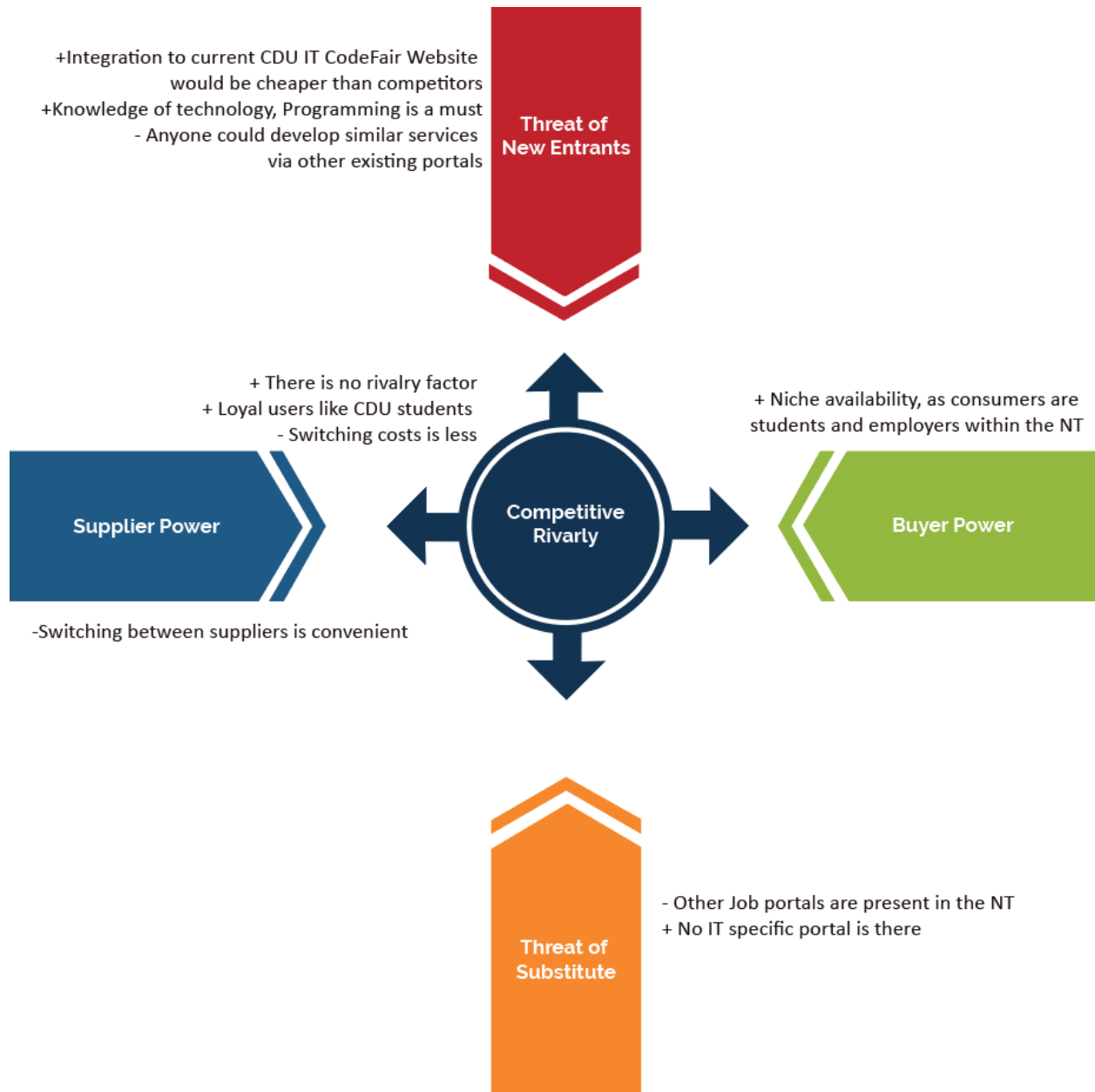*Figure 3: Porter's Five Forces Model*

b. Quantitative Analysis

i. Net Present Value (NPV) and Return on Investment (ROI)

Description	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Total
"Developing Job Portal Management System for IT Code Fair"							
Outflow	41,116						41,116
Total Cost	41,116	8000	8000	8000	8000	8000	81,116
Discount Rate at 10%		0.91	0.83	0.75	0.68	0.62	
Dicounted Costs	54,540	7280	6640	6000	5440	4960	84,860
Inflow							
Yearly Income		25000	25000	25000	25000	25000	125000
Discount Rate at 10%		0.91	0.83	0.75	0.68	0.62	
Dicounted Income		22750	20750	18750	17000	15500	94750
NPV							9,890
ROI							1.54

Table 1: NPV and ROI Calculated Value

Therefore, the NPV is $9890, and the ROI is 1.54%.

ii. Weighted Scoring Model

We use a weighted scoring model to identify the major attributes and viability.

		External Portal		Proposed Portal	
Criteria	**Weight (%)**	**Raw Score**	**Weighted Score**	**Raw Score**	**Weighted Score**
Strategy	15	30	4.5	70	10.5
User Satisfaction	20	40	8	80	16
Resources Usage	15	40	6	90	13.5
Difficulty	20	60	12	60	12
Success	15	50	7.5	80	12
Future Scope	15	40	6	70	10.5
Total			44		74.5

Table 2: Weighted Scoring Model

c. Breakeven Analysis

The ROI is dependent on the decrease of the traffic in external portals from NT and the increase in employment rate within the NT due to user satisfaction.

The Breakdown Point = (Total Fixed cost/ ((sale/revenue per unit) - Variable cost per unit)). However, this cannot be calculated directly (Cafferky 2010).

4.   Do nothing Scenario

In case if the project is not implemented, the potential effects can be as follows:

- Students have to rely on external job portals for vacancies, which, if provided by the CDU itself, would be effective for upcoming freshers and students seeking internships. This procedure will be lacking in the first place.

- Since the actual event happens only once a year, this platform will keep users active throughout the year, meaning students and NT recruiters can be engaged on events online via this portal.

- Students tend to seek references and are desperate to clear their doubts on any subject matter, so the system having interaction features will not be available.

5.   Project Requirements Proposal

a. Requirements for the Project's Execution

The general requirements to carry out this project are as follows:

i.   Documentation/Reports required:

- Proposal/ Business case,
- Contract signed by involved parties, sponsors, and developers as well as CDU (IT Code Fair).

ii.   Technical

All the required tools, licenses, and technologies available in Database management.

iii.   Hardware

- Computers
- Workspace
- Servers

- Network Equipment's

- Internet Access

iv.　　Human resources

With the timeline of 3 months, people required:

• Business Analyst

• Project Manager

• Developers

• Quality Assurance Engineer

b. Required System Architecture

The respective users feed the data in the landing screen, which is developed by the frontend team. The frontend developers will be using HTML, CSS, and Javascript. Similarly, the requests will be handled by web servers from the backend via MYSQL.
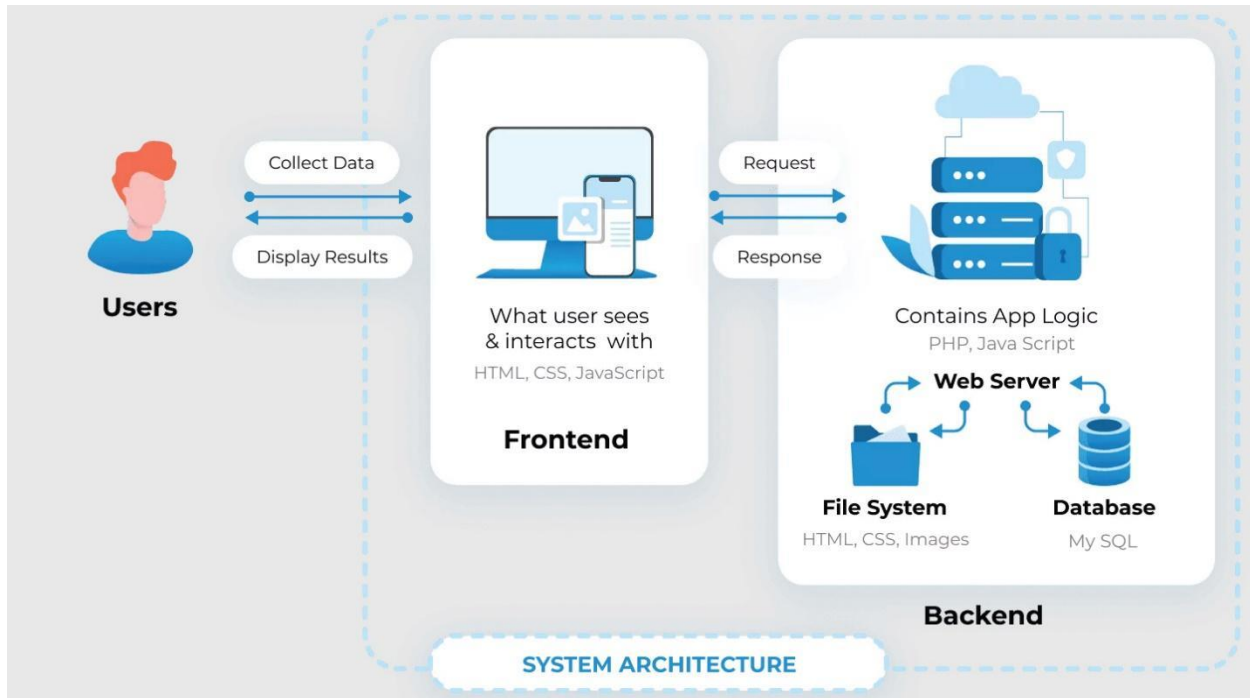

Figure 4: Required System Architecture

6.   Cost

a. Project Cost

The project will cost around $45000. The segregation of estimated costs is provided below.

b. Estimated Cost

Categories	Labor-Internal Hours	$/hour	Total	Non-Labor $	Total $
1. Initializing	168	38	$6384		$6384
2. Requirement Analysis	120	38	$4560		$4560
3. Documentation	80	38	$3040		$3040
4. Requirement Approval	8	38	$304		$304
5. Contract Proposal	16	38	$608		$608
6. Initiation of the project	48	38	$1824	$2000	$3824
7. Developing the module for the portal	224	38	$8512		$8512
8. Creating the database	48	38	$1824	$3500	$5324
9. Necessary changes for UI/UX	40	38	$1520	$2000	$3520
10. Testing	48	38	$1824	$2000	$3824
11. Integration	32	38	$1216		$1216
Subtotal					$41116
Reserve					$3884

Table 3: Estimated Cost

Assumptions:
   a. Labor hours only stick to the working hours, where lunch breaks are excluded.

   b. When calculating the labour cost per hour, the average value is used.

   c. My SQL server, tools, and technologies subscription are included in non-Labor costs.

   d. Reserve is 9.44 % for any uncertain events.
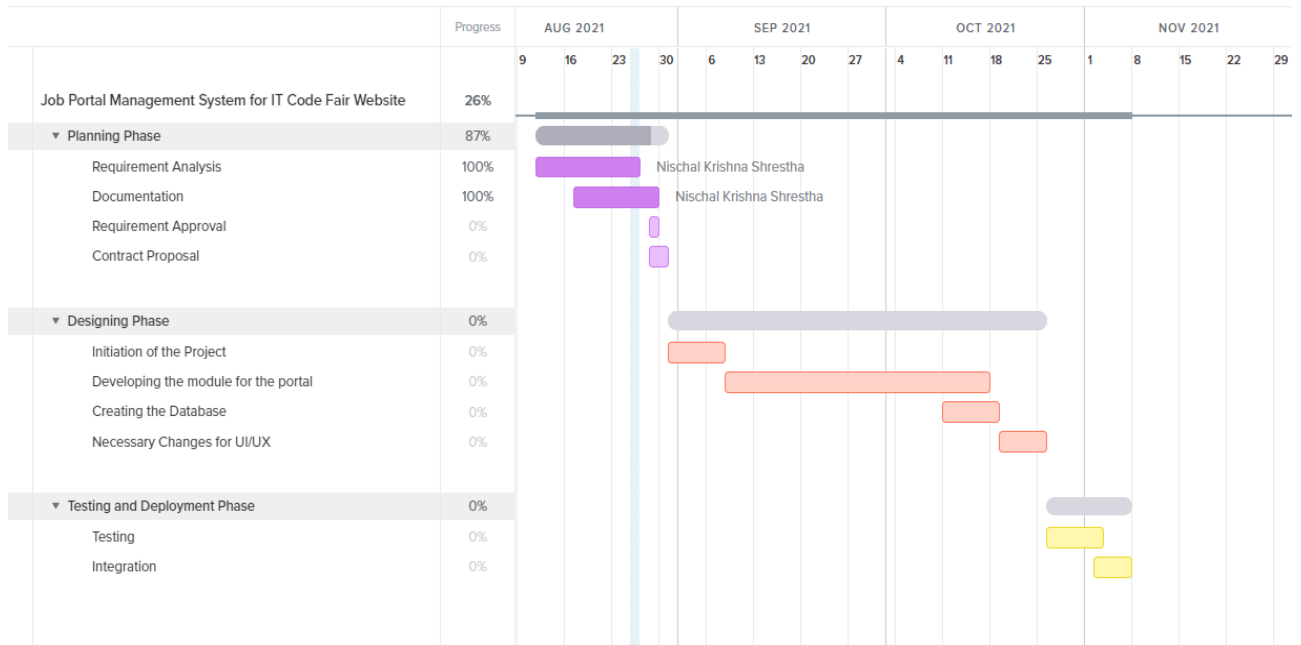
7.   Timescale

a. Milestone

Figure 5: Milestone

8.   Risk Assessment

The risk field is about understanding the world (in relation to risk) and how one can and should understand, access, and manage the situation (Aven 2016).

a. Availability:

Risk Description: If a single database handles the system, and when the server is down, users will not interact with the system.

Chance of Occurrence: Low

Level of Impact: High

Risk Management: Availability of multiple servers for backup.

b. Time/Cost:

Risk Description: Exceeding the cost/time defined.

Chance of Occurrence: Low

Level of Impact: Medium

Risk Management: The Project Manager should maintain the timeline and break down tasks into backlogs for the sprints.

c. System Integration Issues:

Risk Description: Errors or bugs while integrating in the current system

Chance of Occurrence: Medium

Level of Impact: High

Risk Management: The project manager and quality analyst should keep track of release notes in each sprint.

d. Performance Issues:

Risk Description: The number of students increases yearly, which means the database gets load, and it impacts the processing unit, which makes the system slow

Chance of Occurrence: High

Level of Impact: High

Risk Management: The database needs to be optimized and needs to be of higher specification.

e. Security:

Risk Description: Misuse of personal information posted by the users.

Chance of Occurrence: Low

Level of Impact: High

Risk Management: Database security to be set as the highest priority.

9.   Conclusion

As a result of our anticipated project benefit, requirement, and risk, we can conclude that our new integration of the CDU IT Code Fair Portal system would significantly benefit CDU students' lives and recruiters/companies. We determined that continuing with the project is the best course of action based on the SWOT analysis and Porter's Five Forces analysis. There is a sizable market for this system. Spending $45,000 for one year demonstrates that the project is viable, as demonstrated by the calculated NPV and ROI of $9890 and 1.54 percent, respectively. The enhancements to the systems will significantly increase the level of satisfaction by increasing student convenience and reliability while allowing students to focus on their careers.

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