



INTERNSHIP REPORT 2021

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EXECUTIVE SUMMARY

Introduction

Taking an internship before graduation is an advantage for pupils to prepare for their future careers in a variety of ways. Firstly, the internship period displays for them the big picture of the IT industry, including how it works and how people inside it perform their roles, as well as potential innovation. After that, by imerging in the working environment, students are given the opportunity to apply their theoretical knowledge gained in university to find solutions, sharpen engineering skills, and develop needed soft skills. Last but not least, Internship provide students a view to sketch out and schedule for their future career paths. In another word, an internship not only establishes a connection between academic learners and businesses, but it also acts as a bridge between academic questions and real-world issues for learners.

GMO-Z.com RUNSYSTEM is one of the leading prominent companies in the current information technology market in Vietnam and a familiar name in the industry in Japan. The company operates in three main areas: digital transformation for Vietnamese and Japanese customers (WEB systems, banking, logistics, insurance ...); Research and Development of breakthrough new products in information technology; Providing Internet infrastructure services such as domain registration, web-hosting, cloud, SSL, ...

Founded in 2005 with 3 founders, up to now GMO-Z.com RUNSYSTEM has more than 540 creative, experienced staff trained at top universities in Vietnam and Japan. highly appreciated by customers, partners and the market. Students who practice at GMO have the advantage of being well trained through a well-researched training process and exposed to young, energetic and sensitive teams with new technologies.

In 2011, the company became a member of GMO Internet Corporation - Japan's No. 1 Internet Corporation. The Group consists of 89 member companies with over 5000 employees located in 17 countries around the world, including Japan, America, Europe, and Asia. Since then, projects implemented in Vietnam have become more diverse in terms of business domain, languages, and user culture.

After passing the interview, I enrolled in the company's training program and worked there for six months.

During the training, I have been exposed and learned more about the fundamentals of software testing. The textbooks we use are internal documents, with material focused primarily on ISTQB documents, and a combination of review and addition by the company.

Fortunately, after grasping the basics, we are involved in real-world projects where we can experiment, rub, and learn from our mistakes. Five projects to which I contribute have diverse backgrounds and serve clients in various industries. Depending on the specifications, each project requires studying and applying different methods of testing (manual testing, automated testing), as well as appropriate testing tools.

The aim of this report is to provide a summary of my internship at the company over the course of six months, as well as the lessons and skills learned during that period. I hope that this report demonstrates not just how much work I put into it, but also the results of my six months of practice.

Organization Profile

GMO-Z.com RUNSYSTEM was established 14 years ago by three founders with the first name being RUNSYSTEM. After all this time, the company now has more than 500 employees at different branches in Vietnam and Japan. Ocean Park Building, No. 1 Dao Duy Anh Street, Dong Da District, Hanoi is where the company's headquarters are located.



Figure 1: The logo of the company

1. Foundation and History

➤ Year 2005

In 4th May 2005, GMO-Z.com RUNSYSTEM Company, which formerly was RUNSYSTEM Company, was established an Information Technology Company (IT) by three founders, firstly located at D20, Lot 12 Dinh Cong, Hoang Mai, Hanoi in .NET language for Japanese customers.

➤ Year 2007

On August 6th, 2007, a branch was established in Tokyo, which was an important step that launched the name of GMO-Z.com RUNSYSTEM Corporation far beyond the territory of Vietnam. As a representative of GMO-Z.com RUNSYSTEM in Japan in charge of customer relations activities for nearly a decade, Tokyo branch has not only accomplished its mission but also grown in both breadth and depth in the field of Information Technology.

➤ Year 2008

Ho Chi Minh Branch was established on March 14, 2008 with a 5 employees. Currently, the branch has moved to Unit 702-703, 7th Floor, Ha Do Airport Building, 02 Hong Ha Street, Ward 2, Tan Binh District, Ho Chi Minh City with the number of staffs reaching nearly 100 people,

including Japanese expert that are in charge of the iOS, Android, web and other business applications.

➤ Year 2011

In 2011, the company officially joined GMO Internet Group - No.1 Internet Corporation in Japan. The merger is a clear demonstration of the development in width and depth of GMO-Z.com RUNSYSTEM. GMO-Z.com RUNSYSTEM is confident enough to become a reliable partner, providing customers with the best quality service worldwide, with the slogan “Global software quality”.

➤ Year 2012

Da Nang Branch is the third branch of GMO-Z.com RUNSYSTEM, followed by Tokyo and Ho Chi Minh City branches under GMO-Z.com RUNSYSTEM Corporation. Da Nang Branch was officially established on September 3rd, 2012, of which address is 1F, Central Vietnam Helicopter Company Building, Nguyen Van Linh st, Thac Gian Ward, Thanh Khe Dist, Da Nang City. This branch focuses on offshore web systems, HTML coding and expanding the Android section as well as promotes the business of domain name hosting, VPS, email server and website design.

➤ Year 2016

2016 is the year that marks many major changes of GMO-Z.com RUNSYSTEM. Following the globalization strategy of Z.com brand of GMO Internet Corporation, GMO RUNSYSTEM has changed its name to GMO-Z.com RUNSYSTEM.

In 2016, GMO-Z.com RUNSYSTEM also received ISO 27001: 2013 certification. Owning this certificate affirms our strong service quality for customers and builds trust towards customers and partners.

Defining the aim of being No. 1 by bringing smiles and gratitude from customers, GMO-Z.com RUNSYSTEM Company also defines its mission as bringing smiles and happiness to the entire company's employees through IT work, thus generating customer appreciation and contributing to society.

GMO-Z.com RUNSYSTEM Company has the capabilities to outperform its rivals and become one of the leading IT firms in Vietnam. More than 600 employees in Hanoi, Ho Chi Minh, Da Nang and Tokyo with excellent skills, passion, and creativity are capable of implementing multi-sector projects such as mobile application, technical system development, and web system development. There are engineers who are fluent in Japanese, as well as a team of translators from the country's most prestigious universities. The business creates technology systems, develops applications, and offers low-cost IT services to the Japanese market. GMO-Z.com

has developed over 14 years with inherent strengths and received prestigious awards in recognition of its tireless efforts.



Figure 2: The company's staffs

With the following key areas, the organization has confirmed its strength in the information industry and benefit the society:

- Software development
- Internet services
- Solution Provider
- R&D

GMO-Z.com RUNSYSTEM Company is a great environment both in terms of project size, number of projects and human resources. The business has a wealth of expertise in new employee training as a long-standing industry leader, ensuring a fruitful internship and a wealth of experience.

Project Description

I have taken part in 4 main projects: Digital Room Rental System, AI Camera System, Digital Sign System and Ticket Management System during my internship.

1. Digital Room Rental System

Instead of having to complete a large number of relevant papers while renting a room, the project to build a digital room rental system in Japan would use the system to minimize paper

usage. It also improves customer information management and providing supportive services to customers.

The setup comprises of a mobile application, APIs, and a website with five separate user roles. The development process is Agile, and we are currently working on the first phase, which is scheduled to be completed by the end of May 2021. At this time, DD, CD, UT, IT, Security test, and Performance test are conducted to assess and ensure the quality of the products.

The project team will work tirelessly to build a system that will digitize the booking process while also improving customer information management, providing service connections to customers, and keeping track with both the quality and schedule.

2. AI Camera System

The AI Camera System project aims to create a camera system that uses artificial intelligence to recognise and count people in markets, supermarkets, and chains. The statistics gathered can be used as a data source to analyze, define market activities, and identify characteristics of the key customer pool, thereby promoting business growth.

The project's scope includes various types of testing. The Hanoi branch is responsible for system, security, and performance testing. The goods, which consist of three websites and a suite of web services, will be examined by a five-person testing team.

System research has been carried out by experimental staff who are well-trained. I spent the majority of my time testing security and performance. In this project, I would have the opportunity to use OWASP ZAP and BurpSuite Profesional, platforms for security testing, as well as learn the fundamentals of cyber attacks and pentesting, which I will be able to apply immediately in the testing phase. Furthermore, being experienced in the performance testing using Jmeter has sparked my interest in automation testing.



OWASP
Zed Attack Proxy



Figure 3: Security testing tools

3. Ticket Management System

The fourth project is a big project which is a ticket management website. Website contains two foremost functions:

- Customer management and profits for the event company.
 - Manage revenue (Batch- Download CSV)
 - Read file CSV
 - Customers list, register new customers, edit customer's profile
- On the website, include a ticket management system for event company customers that includes the following basic functions::
 - Design stage map, hall, stadium
 - Registration of events (schedule, facility, ...)
 - Book tickets, cancel tickets, payment, cancel payment, commit tickets to another, ...
 - Manage authorized ticket
 - Manage buyers and members.
 - Export report files: customer list, reserved detail table, daily revenue report, hall picture, ...

It's a long-term project that's now in phase 5, so the functions are very extensive.

This project employs BurpSuite as security testing tool to ensure the security of the system in the context of cybercrime.

4. Digital Sign System

In real life, signing a contract is inconvenient since the signer must be there or have access to a fax machine. The Digital Sign System was developed with the goal of allowing users to E-sign documents at any time, anywhere, including outside of the workplace, on a business trip, in a store, at home, or while traveling.

This system includes an application, is a legally cloud-based e-contract services and a website. The application is easy-to-use for making e-contracts, from notification to signature within a smartphone. It also results in the reduction of costs such as seal tax, the improvement of contract signing/management performance, and the improvement of approval.

The business believes it would be a digital transformation breakthrough because of its convenience.

- Contracts can be signed at any time, not only in the workplace, but even while on a business trip.
- Users can sign without using a computer if they have a smartphone.
- On the app, user can see how many documents are "waiting to be signed."

- You can either make an imprint or write your signature by hand. In just a few steps, you'll be willing to sign up.
- Save time for businessmen with approval authorities, companies with a variety of contract papers, and businesses designing facilities for people who need to sign something right away (membership application forms, ...)

Since the deadline is tight, everybody on the team must work diligently to reach it and be willing to work overtime on weekends. Manual and automation testing are used in this project. For integration testing, we used Katalon.

Role & Salary

Your position and role during the internship. Information about your contract and salary (if there was any contract between you and the organization/company).

I was assigned to work in the Hanoi branch's Quality Control team, which is part of the Business Solution Division, and was headed by Ms. Ngo Thuy, a senior manager.

My role consists of these tasks:

- Analyzing users stories and/use cases/requirements to writing test cases
- Collaborate closely with other team members and departments to support them
- Complete all stages of testing (System, Integration, and Regression)
- When needed, design and build automation scripts
- Identifying and tracking program defects and inconsistencies
- Deliver timely solutions

PROJECT ACTIVITIES

Training Program

As a senior at Hanoi University's Faculty of Information Technology, I am expected to implement a six-month internship to complete the occupational internship subject. The faculty introduced me to GMO-Z.com RUNSYSTEM internships interview at the end of 2020. I showed all my best during the interview, and I was accepted into the company's internship program.

My first week consisted of getting acquainted with the company, attending classes on GMO-Z.com RUNSYSTEM introduction, learning about information security within the company, and eventually learning about software used in GMO-Z.com RUNSYSTEM, before being able to participate in my first project, Digital Room Rental System.

Project activities and responsibilities

I got involved in my first project straight away, which was to study customer requirements. I had to present what I had read, how I understood it, and answer questions about the screens for group members and leaders after I finished reading the material. Then I was in charge of creating test scenarios based on similar websites that GMO-Z.com RUNSYSTEM had already created. After finishing the test cases, I was given new tasks, including reviewing other people's test cases, reading the requirements to fully comprehend the websites' architecture and work flows, and making some notes or comments if the test cases were insufficient or understood wrongly. Reviewing test cases was an important part of my learning process because it encouraged me to learn more about the websites and the company's test case template, which was, in my opinion, rather logical and consistent. Since the application was built on top to meet the needs of consumers, I reviewed and edited test cases until the specification changed by customers.

I was asked to write test cases, review test cases, and perform tests for the mobile application within the same system not long after that. Despite the fact that the web and app are part of the same system, I'm encountering several barriers and misunderstandings at this time because the website and application have different business models and testing techniques. Finally, I do a good job because of my passion, my willingness to ask questions, and my mentor's warm encouragement.

The AI Camera System is my second project. The managers at the time considered me to research security testing, so she assigned me to that project with the help of a supportive team, all of whom are very knowledgeable about the business, and a technical expert to assist me

with my questions. In that project, I used two security testing tools: BurpSuite and OWASP ZAP. I practiced environmental setup, threat scanning, and issue reporting. After identifying the issue, the next step is to comprehend it and propose solutions to the development team. I had to learn and read a lot about network configuration and cyber attacks, all of which I was unfamiliar with. After that time, I discovered that I had gained a great deal of technical knowledge in the IT sector, which made me very glad.

I also had the chance to assess the website's performance with Jmeter. The supervisor gives me some instructions to read before allowing me to write a script for website and API performance testing. I created a guideline document in which I explained the principle of performance testing, the steps to testing, and some of my personal experiences.



Figure 4: Jmeter

In the third project, Ticket Management System, I contributed to the project by using my experience of security testing. I need to work overtime to meet the deadline because the project is larger and the client is more conscientious. I found some more challenges when testing in the customer's environment, such as basic authentication and maintenance timeouts, but I also learned how to communicate effectively within the team.

Following that, I return to Digital Room Rental System to perform Security Testing, and since I have much more experience this time, the job goes fairly smoothly.

Digital Sign System is the most recent project in which I have been involved. This project is currently in its maintenance process, and it involves collaboration between the Hanoi and Ho Chi Minh branches. Testing is handled by the Hanoi branch, and the deadlines are incredibly tight. I created new test cases for the application, based on existing test cases, and ran the test. Despite the pressure of the deadline, I had a good time with my colleagues and the phase was completed successfully.

I have an advantage when it comes to integration testing with Katalon and Appium because I knew the business during the manual testing phase. I've studied groovy, a modern programming language. Since it is based on Java, I quickly became accustomed to it.



Figure 5: Katalon & Appium

Reflections and learning from internship experience

The preceding described my involvement in each project that I participated in during my internship. In this section, I'll go through the lessons I've learned from each of the four projects mentioned above.

For my first project, I learned the fundamentals of reading and comprehending requirements, or specifications. Understanding the design and flow of an application is critical; it could be argued that understanding the design and flow of an application is the most crucial aspect of any development process, so testers must have a thorough understanding of the entire system. Since this was my first real project in my work career, I didn't have a testing mindset, so I had a struggle to understand the specifications and the flow of the application at first. I learned how to ask questions for clarification so that I can know more about the system.

The second project compelled me to learn a great deal more technical skills than I had at university. Network configuration, security risks, cybercrime, and pentesting are one of them. I learned how to interact with the developers and other testers because I don't work with my university friends but rather a new team. Despite being an introvert, I am able to conquer my shyness. Despite being an introvert, I overcome my shyness for the sake of the work's efficiency.

The third project improved my communication abilities, allowing me to become a more successful and confident communicator. Mentor is not present in that project. My skills in reading and solving problems have made great progress through this project.

The last project taught me how to use the software that were used to manage the project, how to log bugs, and how to keep track of my own job. Another advantage I've gained is the experience I've acquired while free testing. Free testing involves different ways of thinking and testing. Since the aim of free test is to find bugs that are not covered by a test case, I was

assigned to free test and was responsible for monitoring bugs discovered outside of test cases. As a result, I've gained a lot of experience with free testing and bug detection without the use of test cases.

After six months of interning with the organization, I discovered that I had gained a lot of useful skills for both manual and automated testing. To avoid being misunderstood, I've learned how to read and evaluate customer requirements. In addition, my communication skills have greatly improved, and I am now able to work in a team and communicate things to others. I learned how to write reliable, understandable, and reasonable test cases.

I learned automation testing tools, namely Burpsuite, OWASP for security testing, Katalon and Appium for functional testing... Thanks to my internship, I was able to clearly articulate the path I want my career to take in the future, as well as my strengths and weaknesses, and develop more relationships in the industry.

Project result

In this section, I will demonstrate the outcomes of the projects in which I have been involved. Around 15 QC members were involved in writing test cases for the Digital Room Rental System. The total number of test cases for the web application was over 2000, and the number of test cases for the mobile application was over 3000. The project process in which I am involved was a big success, with high customer satisfaction.

I discovered 120 security issues across 20 screens in the second project. Before the release date, all high and medium problems were logged, fixed, and retested. Both of the websites and APIs passed the JMeter performance testing.

The third project on which I worked resulted in the resolution of 100 security issues. The project was successfully completed and highly appreciated by customers with a very high score thanks to the leader's supportive guidance and the professionalism of all team members.

My most recent project is still in its growth phase. It's scheduled to be finished by the end of the year. I had created about 100 test cases, reviewed and upgraded the tests, and I then took part in the development of an automation script of more than 20 cases in Android. In the plan, after creating script for Android, the team will write test script for iOS.

ANALYSIS

SWOT analysis

- Strengths:
 - ✓ Valued member of the testing team
 - ✓ Experience in both manual and automation testing
 - ✓ Strong background in information technology
 - ✓ Strong communication skills in both English and Vietnamese
- Weaknesses:
 - ✓ Procrastination: I occasionally lose control of my time and miss my schedule.
 - ✓ Bad health, I often get sick when I'm under pressure. In addition, my vision isn't good.
- Opportunities:
 - ✓ Enroll in workshops and tutorial to enhance skillset
 - ✓ Explore related aspects of the career, such as other automation testing tools.
 - ✓ The organization where I am doing my internship has offered me a job as an official employee.
 - ✓ Many relationships with vendors that could be turned into partnerships for further learning and or first job acquisition.
- Threats:
 - ✓ The increase in the number of testers portends increased rivalry in the job.
 - ✓ Poor Japanese

Conclusion

In conclusion, taking an internship prior to graduation helps students plan for their future careers in a number of ways. The internship period allows them to see the big picture of the IT industry, apply their theoretical knowledge from university to solve problems, sharpen engineering skills, and learn necessary soft skills. It also allows students to plan and arrange their future career paths.

GMO-Z.com RUNSYSTEM is one of the leading prominent companies in the current information technology market in Vietnam and a familiar name in the industry in Japan, so it is a worthy company for internship. During the training, I have been exposed and learned more about the fundamentals of software testing, and join real project, using various testing tools. Beside that, I have been joined the working space where everyone are like family members.

Aside from that, I've entered a work environment where everybody is treated like family. Therefore, I would like to express my gratitude to the Board of Directors, Training Center, and Quality Control teams for all of their assistance and encouragement in enabling me to successfully complete the Internship program. I gratefully acknowledge the helps of the Dean and Vice Dean of Information Technology Faculty, Hanoi University that had taught and give me the chance to take part in the Internship course at GMO-Z.com RUNSYSTEM. The activities that I had learned during industrial training really are useful for me in future to face challenges in a working environment.

COMPANY REPRESENTATIVE

Name:

Position:

Signature & Company Stamp: _____

Date: _____