Experiential Report : Azbil Corporation

January 2020 – March 2020

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OVERVIEW

This document summarizes and reflects upon my experiences in Japan from January to March as a CJCP intern for Azbil Corporation. In the first section, I briefly introduce Azbil Corporation as a company: who they are and what they do. Next, I go over the role of the department I was in along with my role as an intern in the company. Subsequently, I reflect upon the impact that this experience has on my future career. In the fourth section, I split life in Japan into 2 parts: life at the company and general life outside of work. Finally, I provide some tips for new/current interns pursuing the CJCP program.

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1   COMPANY INTRODUCTION

Azbil Corporation [current] was established on December 1, 1906 under the name Yamatake Corporation by Yamaguchi Takehiko. The company had its early beginnings as a dealership for machines tools and other instruments imported from the U.S. and Europe (Azbil, 2020). After a century, Azbil Corporation has over 9,000 consolidated employees across Asia Pacific, Oceania, Middle East, Europe, North America, and Latin America (Azbil, 2020). Azbil Corporation is a leader in "human-centered automation" technology related to controls, measurement, building automation, and residential housing air conditioning. Furthermore, Azbil Corporation tackles projects in life sciences that are geared toward the medical and pharmaceutical industries and its research facilities.

Figure 1. Automation for buildings

2 TECHNICAL EXPERIENCE WITH AZBIL CORPORATION

My group was responsible for developing the PLCs for use in factories. I had the opportunity to partake in the software development for one of their current PLCs. In terms of the technical work experience with Azbil Corporation, I can split it up into "the first day," PID parameter testing, Working with Language A and Program B, Program B Programming and Code Testing/Automation.

2.1 THE FIRST DAY

The internship began at 8:30 AM with a self-introduction/greeting to the team. There were several teams on one floor (I'm not sure who is reading this, but if you are a current CJCP student and have seen any Japanese office dramas, you can expect the layout to be pretty similar: open-space concept with the group manager at a table overseeing the team—3-4 tables lined perpendicular to the group manager's table and the team members working side by side). After the self-introduction, my computer was set up and I was given a lot of material, and I mean a lot, for life in Japan and life at the company courtesy of the CJCP alumni—I could really feel their presence supporting me through the first day of work. After reading the materials and getting the computer set up, it was time for lunch. After lunch, I was requested to greet the entire second and third floor employees (100+ in total) with, what I believe, had to be different from the introduction in the morning—of course in Japanese. Woah, that was nerve racking! After the introduction to the second and third floor, my employer joked that the introduction was enough for today's work (I really appreciate the humor and light-heartedness of the employees contrary to my expectations of a strict

employer-employee relationship). Finally, the afternoon greeted me with more documents, accustomization to the company as well as a meeting to consolidate my work at the company. Looking back, I can really say that the first day of work bombarded me with a considerable amount of information that pushed me out of my comfort zone immediately. I'm not sure if you will have the same experience as me, but you will get a lot of exposure to Japanese (listening and reading) as well as the chance to use it (written and spoken) at a technical capacity. There will be a lot of words that you will not know, but that is fine; just search them up and try to understand the context. The first day set the stage for the rest of the internship and made me realize I'm not in Canada anymore; I'm challenging Japan.

2.2 PARAMETERS TESTING FOR PID

As a mechanical engineer, one of the fields we can dabble in is controls engineering. In the first two weeks, as an initial venture into the kind of work my team was tackling, my employer permitted me to set the PID parameters for their heating apparatus. The apparatus consisted of a metal block heated by an on/off heater block (like the ones you see on 3D printers) and temperature measured by a thermocouple. This was an exciting since I just took a lab course on measurement devices (thermocouples included) and will take a controls course. The goal was simple: try to optimize the P, I, and D parameters such that a temperature set by the user is achieved in the least amount of time possible all-the-while minimizing or eliminating off-shoot. Very quickly, this proved to be a difficult task and I had to iteratively research the impact of each parameter then proceed to test. The testing apparatus did not have any sort of refrigeration unit, so for each test, I had to wait for the block to air cool before I could test the parameters that I tweaked. Practically, this type of manual testing is not feasible,

and customers would have to spend hours, days or weeks configuring the PID parameters to suit their needs. As a solution, my team had developed a proprietary PID auto-tuning software. With one click, the PID parameters for a specific application appears and the customer saves days worth of time.

2.3 WORKING WITH LANGUAGE A AND PROGRAM B

After the parameter testing, [and realizing that auto-tuning is a fundamental necessity for PID control] I finally began work on the company's new product (note that details will be redacted). The team was in the middle of porting some their source code written in Language A with compatibility for Program A to Language B with compatibility for Program B. As the first step, I was required make the basic functionality of the Language A source code work with Program B on the team's product. Afterward, there were some additional functions that required system parameters to be acquired before its functionality could be implemented. I was also tasked with porting these functions over and doing any additional research necessary to make the functions work. Through this experience, I really had a chance to become familiar with Language A and work within a team.

2.4 PROGRAM B PROGRAMMING

After a meeting with the team, it was decided that it would be more desirable to have the Language A source code written natively in Language B. Thus, for about a month, I was tasked with researching how to transfer code in Language A to Language B. Also, the system parameters that were previously acquired had to be implemented in a different way, so I was

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tasked with that research as well. I gained familiarity with Language B in addition to familiarity with the Program B IDE.

2.5 CODE TESTING/AUTOMATION

My final project before I returned to Canada. With all of the porting done to the source code, the team needed a way to check if the porting was done correctly. For this project, I was required to create a framework for testing the code natively in Program B. The framework would be distributed to the team members and they would create their own testing environment for the code that they have written. After writing the code for testing code, it would be automatically tested by a script that I was tasked with writing, and the results would be uploaded onto the server for everyone to see.

3 IMPACT ON FUTURE CAREER

Being part of the mechanical program at my university, most of the class time is spent on physics and theory of mechanical systems. Placing myself within the software development world gave me a bigger picture of the interdisciplinary environment that I will eventually work in. I had the opportunity to work with several different languages (computer and verbal), view clean source code, practice documenting my source code, and collaborate with peers working on the same project. I can confidently say that I have become a more well-rounded mechanical engineer and this experience certainly open new avenues for future job search in Canada, U.S. and possibly Japan.

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4 LIFE IN JAPAN

4.1 COMPANY LIFE

A summary of my typical day:

6:00 AM	Wake up and shower/bath
6:30 AM	Breakfast
7:00 AM	Leave for train station
7:15 AM	Ride train
7:30 AM	Arrive at train station closest to work
8:20 AM	Arrive at work
8:30 AM	Work begins/morning meeting (朝礼)
10:30 AM	Radio Taisou
12:00 PM	Lunch
12:45 PM	Lunch ends
3:10 PM	Radio Taisou
5:10 PM	Work ends and end-of-day meeting (終礼)

For me, a typical day would start at 6 AM with a shower, followed by a dip in the sento-style communal bathtub in the dormitory. I would finish at around 6:30 AM and would either

have breakfast provided by the dormitory (healthy and cheap set menus that change every week) or cook a sunny side up egg with toast and wiener.
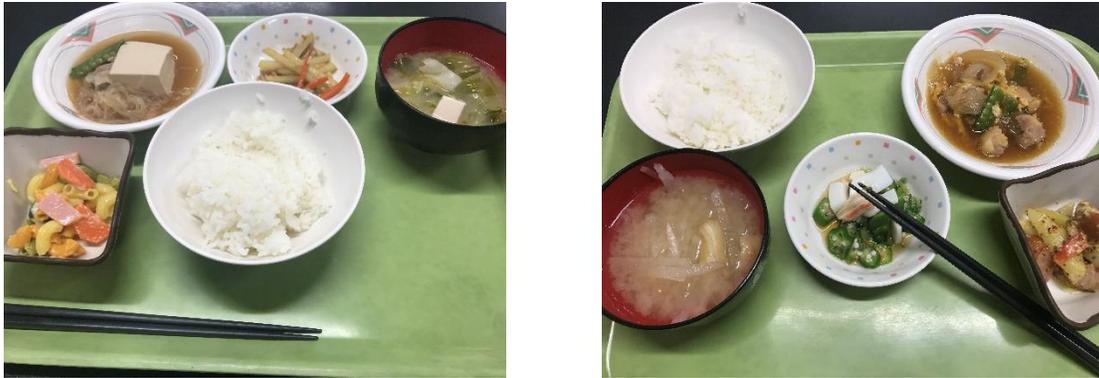
Figure 2 Breakfast at the dormitory

I would finish breakfast at 7:00 AM brush my teeth and start to head to the nearest train station at about 7:05 AM. At 7:15 AM I would catch the train and arrive at the nearest station to work at 7:30 AM. From there I would have plenty of time to walk around the station and neighboring area before work starts at 8:30 AM. When work starts, we would always have a morning meeting (朝礼). Every day not before or after a holiday, team members would take turns doing a morning comment where the person speaking would talk about something happening in their life unrelated to work (really good Japanese practice and I would look forward to these "morning comments"). At 10:30 AM everyone on the floor would get up and do Radio Taiso （ラジオ体操) (several exercises that get you on your feet and moving). It really is magical how everyone performs the exercises in sync, and I think it is a really good to have the opportunity to exercise during the day—especially for jobs that require a lot of sitting.

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逆方向も同様に回し（[2]）、[1][2]を2回繰り返す

Figure 3 One of the Radio Taiso exercises

At 12:00 PM the bell for lunch would ring and we would get access to 3 floors of Japanese cuisine. The menu would differ on each floor and you could mix and match side dishes with mains or purchase set lunches. I recommend that you try everything because anything you pick up will be good! At 12:45 PM lunch would end. Again, the familiar jingle for Radio Taiso would be broadcasted over the intercom at 3:10 PM and then the day would end with the end-of-day meeting（終礼）at 5:10 PM.

4.2 OUTSIDE WORK

Outside of work, I was an absolute foodie and every weekend I would try to explore the food scene in Japan. I typically found myself at Izakaya's (居酒屋) that offer great food-and-drink pairings and, I would say, gives you access to the slightly more exotic side of Japanese cuisine. You also could talk to the マスター (the owner of the place usually preparing food at the counter), customers around you and learn about the surrounding area/get ideas for your next trip. The two dishes that stood out the most were Shirako and white liver (I suggest you try these before searching them up) with Sake.

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Figure 4 Oden--A great hearty dish for winter

My foodie adventure at izakayas lasted for about one month before I decided to go on a trip to a Ryokan in Itou (伊東市). For about 250 CAD I was treated to a luxurious Japanese-style course dinner and breakfast while having unlimited access to the several hot spring facilities that they had there (the blissful sensation of sinking into the hot springs during a winter's evening while viewing the night scenery is hard to put into words).
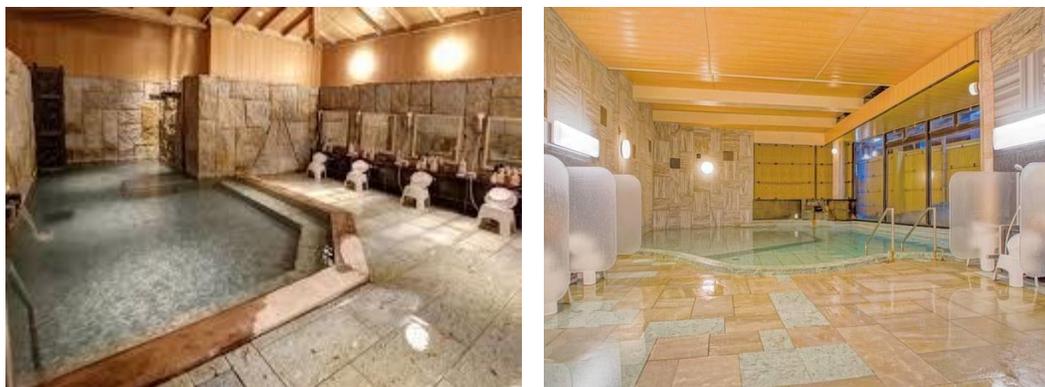
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Figure 5 Hot springs in Itou

Figure 6 Dinner at the Ryokan

Figure 7 Breakfast at the Ryokan

By no means was this spending (money splurging) sustainable so I decided to put a hold on my foodie adventures and tried to recreate the flavors at home in the following months. Breakfast would be primarily eggs, wiener, toast and a piece of fruit. For lunch I would cook in excess, pack a small portion, and bring it to work. Then during dinner, I would have some leftovers along with a lot of beansprouts/cabbage/tofu (冷奴). Sometimes pasta would be on the menu.

Figure 8 Attempt at making lunch.

By making breakfast, lunch and dinner I saved quite a lot of money in the following month and learned a little bit about Japanese cuisine.

During March, the world situation surrounding COVID-19 worsened. However, the situation in Japan seemed relatively normal compared to the commotion going on back home; I felt safe. Programs were put in place to increase social distancing and although people were going to work normally, shopping normally and enjoying their time outside, the curve seemed to slow down (perhaps attributed to the frequent handwashing, gargling and mask culture).

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Unfortunately, there was a recall that forced students abroad to return to Canada and my internship ended there.

5   ADVICE FOR INTERNS

If you are planning to do something, make sure you make every weekend count, do the things you want because you don't know when a worldwide emergency will happen and you will lose the chance to do what you want to. More importantly, make sure you have access to and are always aware what to do in case of an emergency in Japan: contact The Canadian Embassy, have access to the SOS international number/email/app, know the evacuation procedures and be aware of the local muster point (避難場所). Have fun, but stay safe!

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6 REFERENCES

Azbil Corporation (2020). About the Azbil Group. Retrieved 2020/03/23.

https://www.azbil.com/corporate/index.html

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