Summer Internship at Agência Abreu

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(Learning report)

Abstract—This report will present all the knowledge that was acquired during the activity and reflect upon the experiences that transpired and improved my academic performance.

Index Terms—activity, Abreu, IST, IT, Cisco, Group policy.

Should be a summary of the document

Section 2 (up to subsection 2.4 in all ACTIVITY descriptions. Learning (in Terms of soft-skills) only starts at section 2.4.)

1 Introduction

As member of an **IT!** (**IT!**) department this internship experience was great challenge to overcome and to test my capabilities. In this report I will describe some of the experiences that helped me improve both as person and as future professional.

2 Learning

I will describe what I learned in each sub-department that I participated in the course of the internship.

2.1 Fields

This sub department was where I started at the company. Here I acquired all of the ground work that the company needs so that each worker has a computer to work with. I learned techniques to diagnose computer hardware problems and understand the basics of computer organization and phone service hierarchy.

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2.1.1 cables and phones

I learned how a companies internal phone system is build and how it operates. The phone terminal is connected to a switch, that has ports mapped for phones and computers. Each department has it's own switch and each switch is connect to the server. This makes all the internal phone calls through **VoIP!** (**VoIP!**), so all of the companies calls inside the network are free. Every worker is given an internal 4 digit number by the network manager that controls the phone server (using Asterisk).

When a phone stops working there are some steps to follow for making the diagnostic. In first place the integrity the cable is checked using a special device that emits a signal from one end of the cable to the other end (the receiver). If the cable works then the department switch is checked to see if the phones cable is connect to the correct port that has been mapped for phone use only.

2.1.2 computers

To diagnose a non functioning computer, there are some steps to be taken:

If the computer does not turn on:

1) check the cables
2) check the power source
3) check if the motherboards capacitors are either blown or leaking

Due to the computers working hours (7 to 8 years on) problem number 3 is most common

(1.0) Excelent	LEARNING					DOCUMENT						
(0.8) Very Good	CONTEXT x2	SKILLS x1	REFLECT x4	S+C x1	SCORE	Structure x0.25	Ortogr. x0.25	Gramm. x0,.25	Format x0.25	Title x0.5	Filename x0.5	SCORE
(0.6) Good												
(0.4) Fair	1.2	0.5	2.0	0.6	4.3	0.15	0.25	0.25	0.25	0.5	0.5	1.9
(0.2) Weak												

but if the worker hears a large noise before the computer stops working then it is problem number 2 that happened.

Since the company has a computer care policy with their supplier, where if a computer stops working a suppliers worker comes and fixes and replaces all the broken parts.

If the computer is on but does not work or does not respond correctly:

1) check the hard drive
2) check if the motherboards capacitors are either blown or leaking

Again problem number 2 is most common due to the extensive use of the computer. Some times the hard drive stops working, because the company recycles working parts of a broken computer so some hard drives tend to have 10 years of working.

All of the computers are required to stay on during day, night and even at weekends because the main server has updates and Group Policies(explained bottom **??**) to be applied at scheduled times.

2.2 Assistance

In this sub department I learned the "know how" on how to assist and partially solve the customers problem through the phone.

This sub department was the one that I didn't find comfortable, because I needed to address a lot problems in a short period of time where there is a very low time to think about the issue. Some hours of the day there was a lot of pressure because there were "raining" calls that needed to be solved promptly.

2.2.1 ticket triage

In the Assistance sub department there is a ticket triage decided by one person. All of the received tickets are distributed to the sub departments.

Each arriving ticket is given a priority.

Every ticket that comes from the administration is treated as top priority, it must be solved as fast as possible.

Tickets that have a generic issue, are grouped by issue so that every client receive the same solving status updates, and must be solved quickly because it affects a majority part of the enterprises network and computers, so that people can resume working again.

Any ticket that's related to networking is automatically given to the Systems sub department.

2.2.2 telephonic assistance

Every phone agent logs in to the system by picking up their phone and by typing the 4 digit password. After the log in process the agent becomes available to give assistance to whoever in the company that has got a computer problem and calls to the generic assistance number.

When a call comes, the attending person must try to understand what the issue is, "translate" and understand the problem that the client says to make the best diagnosis possible so that the other team members can try to solve it. If the problem is simple like:

- First Time Login
- Email Configuration
- Lost Password configuration

All of this can be solved in real-time in stead of passing it to another sub department. If the problem is generic, that affects more that one machine in the system, the problem is transferred to the Systems sub department as that is the department that configures most of the systems.

When an agent acknowledges the problem, he must create a ticket for client, so that the problem becomes registered in the system. That way the enterprise keeps record of all of the problems that happened and how can they be solved. Only in this case the agent has to create an ticket for the client due to the companies policies.

One special aspect was that there is a hierarchy that should be respected in the company, that is: when a person from the administration or one of the directors called with a problem, they should be addressed in a special way, showing some kind of respect referring to them as *"Dr"*, *"Dear Sir"* and not *"you"* while giving assistance.

2.2.3 ticket response

All of the tickets that are received should be responded immediately, that way the client

knows that we are addressing the problem.

When the solution is found, the client must not know the about technical details but, know that the problem was addressed.

After the problem is solved the ticket is promptly closed if the client doesn't have any more problems or questions about the issue.

2.3 System

This sub department manages all of the companies systems. All of the computers and network devices that are spread all over the country and abroad. This was the sub department that I identified with myself. Here I spent most of my internship time.

Every company user has it's own permissions. The **IT!** department has controls the permissions, they are the ones that control everything.

2.3.1 ticket system

This sub department managed the ticket system implementing slight improvements and organizing all of the pasted issues on a database so that when a similar issue occurs the team can check what the solution was.

A learned that all of the companies computers were divided into little groups were each group had its policies.

2.3.2 windows

What was new about this operating system is the whole support for companies that comes included. This operating systems comes with special features that help diagnose a computer faster:

Event Viewer -
: Shoes all of the computers events since the operating systems startup.

There are also some network features like:

RDP! (RDP!) -
: That allows a network manager to remotely access another companies computer that's inside the network.

Telnet -
: Allows to access network devices like routers for quick configuration.

Group Policies -
: Allows to easily manage a group of computers. That is, installation of updates, applications, configurations, permissions independent of their geographic location as long as they are connect to the network.

The group policies help maintain all of the companies computer on the same state. With them is much easier to install applications. The network manager says all the computers in group X need to have application Y. When the user at the computer from group X reboots or the computer is reboot by the main server (as previously scheduled), it automatically starts installing the application Y. That way the network manager does not need to manually install application Y on each computer one by one, the manager only has to deploy the group policy in the network.

The formating of computers was made through the network device, we did not need CDs or DVDs to format the companies computers, this was very useful as it saved a lot of time.

2.3.3 cisco and networking

Most of the network components that the company worked with were Cisco branded. All of the routers were configured using Telnet or Putty.

Every new store that opened needed to have Cisco router that was directly connected to the main server.

All of the companies various stores(spread around the country) were connected using VPNs (Virtual private network) to the main server.

The **VPN!** (**VPN!**) made possible to access computer remotely using RDP to fix reported problems. All of the remote computers were treated as if they were in a private LAN(Local Area Network) but, due to the hired Internet speeds there was some latency.

2.3.4 asterisk

Asterisk was installed on a server with an Unix operating system that managed all the network internal phone systems including phones that were on stores abroad.

All of the agent sign up process(for the telephonic assistance) was programed into Asterisk as well as all of phone terminal numbers.

2.3.5 *new programing language*

I was assigned a job that made me learn all by myself a new programing language, **VB!** (**VB!**) Script. The company needed a scrip that would read some details from a .txt file and automatically configure a remote Cisco router.

I thought that it would take me a lot of time to get used to the language but, due to the teachings at IST it turned out to be a very fast learning process. Once I adapted and learned the languages syntax, the programing logic (learned at IST) could be applied: Reading from file, parsing the input, executing the needed tasks using the libraries command.

2.3.6 *problem solving*

All of the work done in this department was based on problem solving. There were some necessary procedures to take before handling the problem.

There was a lot of investigating on how and why the applications to not perform and execute as they should. Acknowledging that a diagnosis was made and a possible solution was defined and approved by the supervisor, we would pass to deploy it and check if the results were as previewed.

2.4 Team Work

Team work was essential to accomplish the jobs that ware assigned.

I integrated several teams during the course of the internship: Fields, Assistance, Systems. Each of them had their different people with different ways of working all fighting for one objective: keep all the systems on-line and working.

Fields -
: Required a lot of working in pairs, as dismantling and build up computers required attention.

Assistance -
: Required a lot of team coordination as there were 3 people on the phone and 1 managing the tickets.

Systems -
: Required a lot of attention and precision, because if one of the members fails in one policy and accidentally deploys it, that would affect several working clients, bottlenecking the assistance with calls.

3 What transpired

All that was described in the previous sections (**??**, **??**, **??**), was knowledge that was acquired and learned by me. This experience helped me see network and systems management in a different perspective. It broadened my views about management and motivated me to know more about system management.

4 What I can improve

The internship was a very enlightening and enriching experience, there were some aspects of the internship that I could improve upon.

Handling the pressure better at talking to the phone. There were some times that I blocked while talking to the clients.

Come up with easier and faster solutions to some problems. Some of the solutions that I proposed were not as efficient as they should be. A possible solution would be to investigate the issue better.

Getting used to reading extensive documentation. Although boring and extremely extensive, the official application or hardware documentation usually contains all the details that help solve most, if not all of the problems.

Try to coordinate better with my team mates. There were some tasks that would have been much easier to execute if there was better coordination.

Learn more about networking and system administration so I can bring new knowledge to my future work place.

5 Conclusion

This internship was a great life experience, it enrichened me personally and professionally. I learned a lot during this time on how to manage a schedule and to how to deliver and be present on time.

I think that every student, if they have the opportunity, should do an internship on a company of their liking so they can have a taste of working market. It is very fulfilling to work at good company that appreciates the work that you do and as turn back you gain a lot of soft skills turning you into a more capable person.

In this type of document (technical), the CONCLUSION should start with a SUMMARY of the subject addressed and then should highlight the results.

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