Working as a Telecom Specialist in a logistics company (DHL)

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In this diary-form thesis, the author followed his work duties for 8 weeks. The aim of this thesis was to gain insight into telecom specialist work, to improve as a telecom specialist, advance in several projects, and improve skills in project management. The client of this diary-based thesis is a globally known logistics company, DHL Freight.

Each week a plan was drawn up for the week, and during the week, the author made daily reports. At the end of the week, the author analyzed the past week's reports and made a short summary. Additionally, from each week, observations were gathered that needed further analysis. These observations contained themes such as the importance of effective communication, experiential learning, incident handling, the importance of documentation, task management, troubleshooting methods, and more.

The thesis gave insight and a unique view of the telecom specialist's daily work for the client company. Some improvement targets were also found with documentation practices and communication issues. Additionally, good progress was made on several projects, most importantly on the threat modeling on third party software.

Contents

1 Introduction

The project is commissioned by a worldwide logistics company referred to in this research project as DHL. As a whole, DHL operates in over 220 countries and employs 600,000 people (DHL 2024a). More specifically, under DHL Freight, Finland has 233 employees, according to 2022 statistics (Finder 2022). In this project, my task is to gather insight into my daily work as a telecom specialist and work on several projects. The primary project involves conducting threat modeling and analysis on third-party vendors and the software they provide for DHL's use. I aim to thoroughly document and analyze my daily work, drive the projects, and make observations during the weeks. Additionally, during this project, I intend to work on other developments and improve my project management skills, overall IT abilities, and telecommunications skillsets. The research project progresses in a diary format, allowing for the recording of detailed observations and experiences from daily tasks. During the work period, I will gather extensive information about my assignments, their challenges, and successes.

The project work will be conducted under supervision in the spring of 2024, covering eight weeks from January 15th to March 15th, 2024 (week 3-11), excluding week 9.

1.1 Keywords

AP = Wireless access point

BIA = Business Impact Analysis

BPM = Business performance management

BUIT = Business IT

Cacti = Open source network monitoring solution

FE = Field engineer

HLD = High level design.

IP = Internet Protocol

ISP = Internet Service Provider

KPI = Key performance indicator

LLD = Low level design

NOC = Network Operations Center

PD = Performance Dialogue

Power Automate = Microsoft tool to create automated workflows and tasks across multiple applications and services

ServiceNow = Used by companies to set up systems that define, manage, automate and structure IT services.

SharePoint = Tool for organizations to create websites where you can store, organize and share information

SSL Certificate = An SSL (Secure Sockets Layer) certificate is a digital certificate that encrypts data transmitted between a website and its visitors' browsers, ensuring secure communication during browsing

Weathermaps = A visual network map in Cacti

Wireshark = Open-source network analyzer where you can in real time capture and display network traffic

2   Starting point

A telecom specialist's common responsibilities include designing, installing, monitoring, and maintaining communication networks. Other tasks may include troubleshooting issues, ensuring security, optimizing performance, and providing user support. Their role is essential for keeping organizations connected efficiently and securely (Learn 2024).

2.1   Current work and skills

At the time of this thesis, I'm working as a Telecom Specialist at DHL. This work position includes everything that has to do with data and networks. My main responsibility is to ensure that the network is in operating condition on all DHL freight offices and terminals in Finland. My other tasks include:

- Network monitoring
- Network troubleshooting and incident handling
- Communication with the network provider/telecom providers
- Network Projects & Maintenance

- Server maintenance and monitoring
- Miscellaneous IT projects and assignments

My unit consists of a few different groups, such as:

- ITS (IT Services)
- BPM (Business Performance Management)
- BUIT (Business IT)

I work on the ITS team; however, since I am the only one working on telecommunication, I do not have other people working on the same duties as me. Therefore, I mainly work on my own projects and tasks alone. However, sometimes, the projects I'm working on involve a few other ITS team members.

We procure our network services from a third-party vendor. My primary responsibilities involve liaising with this vendor and overseeing all projects in collaboration with them. This encompasses coordinating maintenance and swaps on hardware, project management from the DHL side, and network upgrades and changes. Additionally, I am responsible for raising tickets with the vendor for network incidents and requests. Furthermore, I serve as one of the primary contacts for sites during major incidents.

My tasks also include monitoring our networks in our offices with our network monitoring solution called Cacti. This includes the maintenance and development of mentioned system. There are other servers for which I'm responsible, and they serve different services. I need to attend to and develop some of these services to keep them running.

I have also previously worked as an IT Helper and Service Desk agent, where I learned a lot about IT. Dealing with different situations and problems helped me think better and improve my troubleshooting skills. It also taught me how to handle different types of customers, improving my customer service skills. During my last employment, I learned project management and handled important customers with their technical issues and requests.

I am relatively new to my role as a Telecom Specialist, having started in November 2023. Additionally, I have not worked in a networking focused position before. There's still much to grasp about the company and the tasks associated with my position. It's a comprehensive role that requires time to develop fully. Nevertheless, I view it as a perfect career advancement and opportunity to expand my expertise within the industry.

I have studied IT in Practicum in Helsinki and graduated as an ICT technician, where I learned network basics and various IT-related subjects. At Laurea, I focused my courses on cybersecurity and advanced networking. Cybersecurity studies are closely tied to networking.

These experiences have provided the foundation for my IT skills, particularly in networking and cyber security. Prior to my studies, I also built computers and had a deep interest in the IT field.

In Figure 1, which you can see below, I have opened and analyzed my own weaknesses and strengths using a commonly used SWOT diagram.
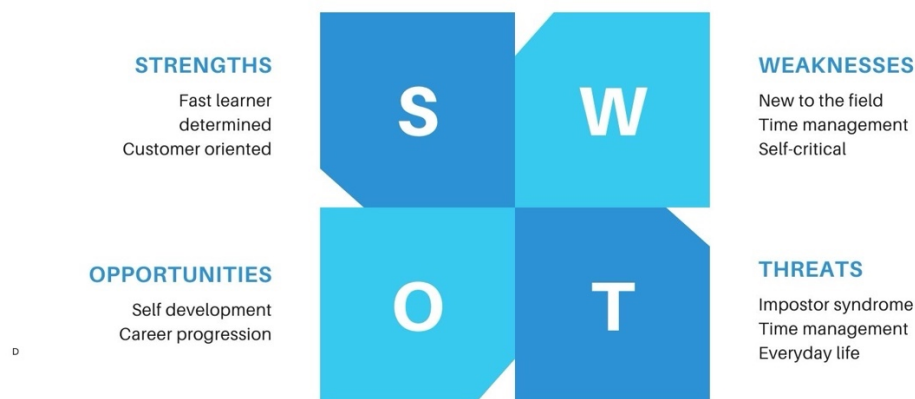

Figure 1: SWOT-Analysis

2.2   Stakeholders

My primary responsibility in DHL revolves around managing internal networking and telecommunication tasks while also interacting with external entities like our network provider and other ISPs.

This includes collaboration with both internal stakeholders, including my team and international IT personnel, with whom I communicate daily, and external stakeholders. Although my focus is primarily on internal support tasks, I recognize the importance of engaging with external stakeholders to ensure the smooth functioning of our organization's infrastructure.

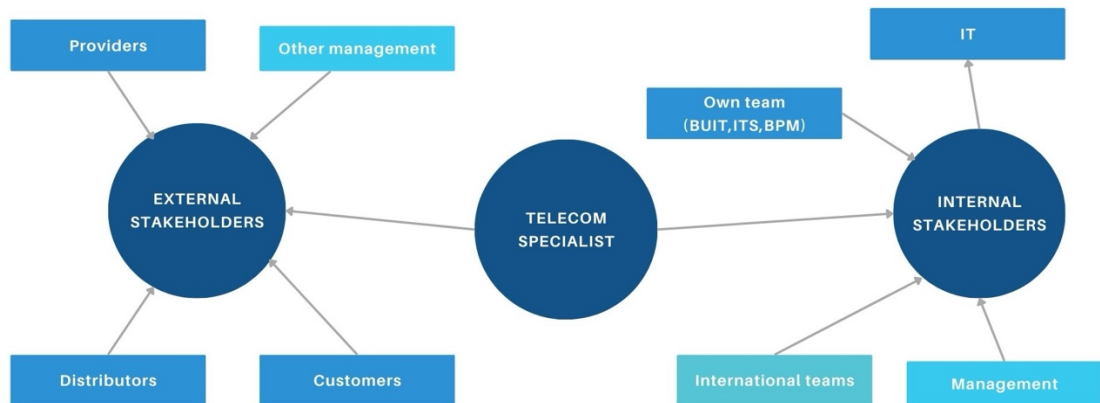The stakeholders are described in Figure 2 below.

Figure 2: Stakeholders

2.3   Communication skills

DHL Freights headquarters in Finland is located in Vantaa, next to the airport. We reside in an office building, and right next to the office, we also have a warehouse terminal. I work in the office on the 5th floor, and we have several meeting rooms that we can use. We also have some rooms available for individual use, to help you concentrate better. They include two screens with a docking station and work as a normal work point.

Currently, I work 2-3 days a week at the office, and the rest of the days, I work at the home office. As I am still new to this company I try to be a bit more at the office. This helps me to integrate into the company and intake information when you are physically in the same place. When I'm at the office, we usually have the meetings live if possible; otherwise, we use Teams for our meetings and calls. Teams is also our main communication tool alongside email. We have weekly meetings with our team where we go through performance dialog, which I refer to as PD in this thesis. Alongside this, I also have weekly meetings with our main network provider, where we go over current topics and possible ongoing issues. On top of this, I also have many other meetings I'm participating in on a monthly basis.

As I'm responsible for DHL Finland freight offices and terminals, I will need to visit these in periodically and as needed.

Currently, I'm the only one working with this specific job description. There are not many I can turn to for advice if I have questions or problems. My closest colleagues who do the same type of tasks as I reside in other Nordic countries. However, they cannot always help with site-specific questions or Finland's specific items. There are some colleagues in my team who can direct me to correct people and help me in tasks where they can.

Even though we have good communication tools, I am struggling to comprehend the technical terms used in logistics because I haven't encountered them before in my previous IT roles. Additionally, I need to improve my skills in high-level IT meetings.

As a new employee, I must quickly learn everything that my predecessor built since he had worked for quite a long time in this position before me. What made it harder was that there was not much documentation from the beginning and few people to ask for the needed information. Therefore, this prompts me to make documentation from now on to ensure redundancy.

2.4 Development

Currently, there is not much written information available regarding work processes, tasks, and systems, and it is important to start gathering knowledge about what the job involves and what you need to do. Therefore, I will focus on gathering all this information and creating clear documentation for it. In the next few weeks, I'll also be working on diverse projects, each giving me chances to learn and develop.

Throughout my diary-based thesis, I'll be focusing on a specific project where I will be analyzing and managing the risks of using third-party software. This project is important because we need to understand the potential dangers of using such software in our company. As mentioned above, I will be working on multiple projects alongside my main one, and I will provide more details about them in my upcoming report. These projects will give me plenty to write about in the coming weeks.

Documenting processes plays a crucial role in ensuring tasks are carried out consistently and effectively. Various methods exist for documenting processes, including written documents, templates, and automated software solutions. As a company evolves, your documentation methods may also evolve to accommodate changing needs and scale. Integrating process documentation into your broader approach to productivity and project management can further enhance organizational efficiency and effectiveness (Slack 2021).

2.5 Project target

My primary objective for this thesis is to gain knowledge about my work and enhance my role as a telecom specialist within the organization. This position comes with various responsibilities and tasks.

I will focus on a main project regarding the third party software DHL uses in Finland. We will learn how this software works, communicates, and handles data. It is important to finish the project to get risk assessments of this software. Otherwise, we would be blind to the risks and possible consequences. This kind of project evaluation has not been done before, and my supervisor at DHL is really eager to see the potential benefits of this diary-based thesis.

As mentioned previously, I will be working on various projects and developments besides my main project. I will be working with SharePoint, Power automation, network projects, server management, Linux operating systems, and network monitoring systems. I will also be working on project management and developing my skills within this realm. This will undoubtedly help me grow as a telecom specialist, and hopefully, the whole organization will gain important insights and value.

3 Work life of a telecom specialist

This section of the project report consists of 8 weeks of reporting. Each week will include a plan, a daily report, and an analysis. Additionally, each week's analysis will have its own theme based on what occurred during that week.

3.1 Week 1

During the first week, I will explain my daily work routines and what kind of tasks I can get assigned. Week 1 is also the start of my third-party software project, which will be one of the focus areas of this thesis. Throughout my first week, my primary emphasis will be on a SharePoint page and Power Automate flows for a small project, which will occupy most of my time.

Monday 15.1

I started my day with my daily routines, such as checking what I had planned for the week and if there was anything I needed to add. I looked through my emails and chased after emails I had yet to respond to. This is an excellent practice to start the week, and I can focus on the tasks at hand. As I started at the company only two months ago, I am trying to find a rhythm that works well with the position.

After my morning routine, I started updating the guide document for the SSL certificate update on the internal webpage and how the process went. The process needs a guide due to the complexity of the task, which has many stages to get it to work on the page. It is also essential for these kinds of processes to have a proper guide, in this case, because of the system's cruciality.

I also started the third party software project by reading documents I had received in advance about DHL's general cyber security policies, practices, and standards. The documents will form a good base for understanding where DHL stands and what is also expected from the vendors from whom DHL buys the services.

In the afternoon, I met with the person helping with my project and guided me through analyzing this third party software. The meeting was enlightening, and I received good guidance to commence the project. After the meeting, I emailed the DHL product owner to get the contact information for the company that is providing the service.

I spent the remainder of the day working on my Power Automate project, which started last week and will consume most of my time this week.

Tuesday 16.1

In the morning, I received the contact information for the software supplier. I discussed with the DHL contact if they should send an email in advance so I can contact them. The reason behind this is that I will be asking about the system in quite a lot of detail. Hence, the heads up to my vendor contact. I then sent an email and explained why I was contacting them. In the email, I additionally enquired about a technical contact who could answer my questions and be my contact person during the project.

I received a very swift answer from the supplier, and they gave me contacts who could assist with my questions. I immediately sent a survey to the new contact persons with questions I would need an answer for, for starters.

During the morning, my manager asked if I could help investigate whether our Cacti system could also do file monitoring. I found with a quick research that actual file monitoring could be possible with enough tinkering, but you can see the disk space used on a Linux system. A great example can be seen in the picture below from the Symetricore article (Symetricore 2016).
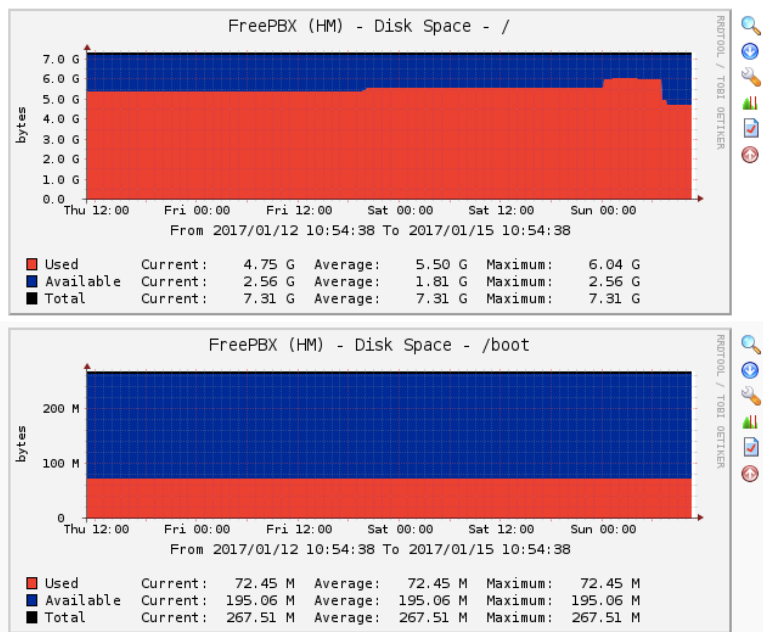
Figure 3 Cacti Graph of disk space (Symetricore 2016)

After that, I started to work on a decommissioning task. We're planning to decommission several servers, and since this is my first time engaging in such a task, I'm excited to explore the various elements included in the entire process. This will enable me to have a comprehensive understanding of what steps to take in similar tasks in the future. Understanding and thoroughness are paramount since you need to be cautious when taking servers down that have or are running different services.

In the afternoon, we had our weekly performance dialogue to discuss different team metrics and the team's current overall situation. This time, it was also my turn to facilitate the meeting for the first time.

Wednesday 17.1

During the morning hours, I was going to start with a new guide document for service account updating, but I started working again with the SharePoint project since the manager asked for help. The day was relatively quiet, and there were very few emails coming in nor no scheduled meetings. Eventually, I ended up working on SharePoint the whole day. Working on a single subject during the day was also very refreshing. This allowed us to expedite the project and overcome problems that had inevitably appeared. During this time, I mostly worked on the power automate flow that works with the SharePoint site. I have yet to gain prior experience with Power Automate, so this also provided a chance for me to understand how the product functions peacefully.

Thursday 18.1

Today, I continued with the SharePoint project straight in the morning because I was trying to get a function to work that I had problems with the day before. I wanted to get this working before a meeting regarding this specific topic. I also did some minor tasks in between, for example, answering emails.

During the SharePoint project meeting, the scope of the project became larger. The reason was that we had all the stakeholders in the meeting, and everyone was giving new and fresh input. All these ideas would make our whole process easier and smoother. This is to make some tasks more automatic so we can minimize manual labor. In retrospect, this meeting was important as we got a better understanding of the project's true scope.

At the end of the day, I had a monthly meeting with the whole of Europe's IT division. During the meeting, we discussed the overall plans and agenda for the year.

Friday 19.1

I started the day by working on emails and some teams calls. One of those calls was caused by an issue I'm working on. The problem was that some of the devices were not able to access a website even when the firewall rules should be able to allow that, even though the changes I requested to the firewall rules should technically work.

I also planned a meeting for a Sunday where some of Finland's offices network will be tested. Our network provider will then optimize and test a feature. This needs to be on a weekend and when it would interrupt the operation as minimally as possible. We need to have people at our sites check that the network works while they are testing and when a possible implementation has been done. My task is to coordinate this testing part for Finland.

I had this year's first monthly meeting with our network provider in the late afternoon. During this meeting, we reviewed how last year went and what plans we have for this year. This also gave me the opportunity to see what had happened last year when I was not yet working at the company.

Week 1 analysis

Most of the week revolved around the SharePoint project, which also included odd tasks that filled up the days nicely. The project underwent several iterations, demanding considerable thought, research, and a significant amount of trial and error before finding successful solutions. After the meeting that was held this week regarding this project, the scope became larger, leading to an increase in necessary changes. Due to this, the project will continue a bit longer. As a bonus, during the week working on this project and the intense work with

SharePoint and Power Automate, I have had the opportunity to learn the basics and more of these tools/features.

During the week I also started the third-party software project and got most of the initial tasks done. This project will however continue at its own speed due to limited time during this first week.

I saw that I could prepare myself better when I started to work with entirely new tasks/tools. I made most of my progress by just testing and failing and slowly getting things to work. During this, I really grasped new things and learned a lot. As mentioned in David Kolb book about experiential learning, there are several learning models, but all of them have the same core idea. That you know from the experience and not the outcome. When you do a task every time, you get a different experience and from there you can develop your skills in the said task. One of the experiential learning models is called Dewey's model see Figure 1 (Kolb, D 22-27).
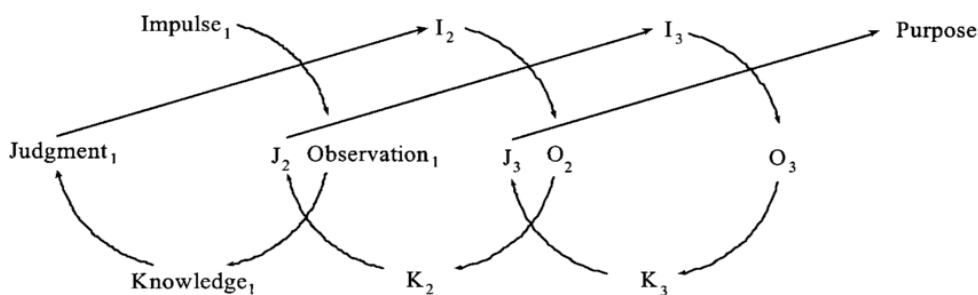
Figure 4: Dewey's model of experiential learning (Kolb 1984, 24)

Kolb also emphasizes that we all bring different knowledge and experiences, influencing how we approach situations or tasks. For instance, in John Dewey's model, he states, "The impulse of experience gives ideas their moving force and ideas give direction to impulse," illustrating the concept that our diverse experiences shape how we learn and perceive the world (Kolb, D 22). I see this learning method to be working for me in many instances instead of reading much theory and I will certainly utilize this in the future.

3.2   Week 2

The main plan for the week is to solve the complicated issue of the devices not being able to access certain websites. This said issue has a deadline very soon and needs my full attention until it is solved. The plan is also to get my third party software project forward, complete some of the core tasks, and see if I can meet with the project manager. I will continue on the SharePoint project as well.

Monday 22.1

I started the morning by reading an email answer from the third-party software provider. They supplied me with a technical document for their product. This document was beneficial and well-written, making it a breeze to read even though it was technical. After I had read through them, I answered them with follow-up questions to get more specific details of our implementation.

I was yet again in the situation to start with my document guide of service account when I was interrupted by the SharePoint project. Some issues had arisen on Friday afternoon that I needed more time to tackle due to the weekend. However, my first thought was that the problem was outside my developed structure. Luckily, the first issue was quickly fixed, and after that, I continued to develop the project. After lunch, I was again stuck on a problem that I ended up troubleshooting with my manager until the day was already over. We decided in the end that it was better to leave the issue for tomorrow because sometimes you need a well-rested night to find the necessary solutions.

Tuesday 23.1

Directly in the morning, I continued working on the project issue I had yesterday. After some tests, I managed to resolve the issue. The problem was that the column I was calling to had its old name as a value even though it visibly had a new name. Consider several things when creating flows and when you reference different lists and objects. This time, the referencing part failed because SharePoint used the original name instead of the new one.

Regarding another issue in the SharePoint project, I had to ask a colleague who had been involved with a different SharePoint site that was connected to my project. I needed to know how it was implemented because I was grabbing some information from that particular SharePoint site and had some minor issues with it. This issue was easily solved after we discussed the structure and how I could grab and parse the information I needed.

I had a small meeting with my closest colleague at the office about the current items we are working on together. We also checked if there was anything we needed to escalate to get it further. This is one of the main reasons it is good sometimes to be at the office because you can more easily share information that would not be discussed in an effective way online.

I started to look for a solution to make Diagrams for projects and systems. The reason behind it is to create a holistic view of the system I handle. The Diagram would then be a straightforward resource to show to anyone who needs an explanation of how it's built and works. This also helps when you need to continue to develop or fix the system later on. I

found out that Visio from Microsoft would be an excellent option and widely used in the company, so I decided to order a license for it.

Wednesday 24.1

In the morning, I received an email informing me about a significant change that would impact our Cacti system. For security reasons, I cannot open more about what would change. I had some limited information about this before. This prompted me to start investigating this further and gather as much information as possible. I began by sending emails and contacting people who could possibly have information regarding this change.

During the day, I noticed that one of the company offices had some issues with its network. I checked the situation and made sure they got the ticket to the network provider to resolve it. Due to this incident, I started studying our Cacti system and researching whether it would support sending alerts by email or SMS if a device has a failure. This way, we could get an early warning if there is an incident.

I started to create a diagram for the SharePoint project. With this diagram, you can get a good idea of the whole system quickly. This was optional in the scope of the project, but I saw it necessary as a task. During the day, I managed to get it ready and shared it with my manager, who was pleased with the result. I have planned to create these diagrams for tasks and projects that would require one if you need a meeting to explain the said system. I also sent the customer a test email with the Power automation flow we created for the project. They replied positively to the results.

Thursday 25.1

I continued to work on the website access from last week, which is still an issue. This has been escalated, and I created an urgent ticket to get support on the matter. I also had a meeting with a colleague from a different country unit to talk about this issue after we had text chatted for a while. I gathered additional information for the ticket and reported the situation to the relevant parties. I also received a call regarding this from one of the project managers. This particular investigation and communication of the issue took up most of the time of the day.

Suddenly, during the day, I received a ticket about a security incident. I checked what I could do and started to gather the additional needed information for the ticket. During this investigation, I found a convenient tool to easily see contact information for the person who owns the computer. Luckily, the ticket was, in the end, a false positive. It was nice to see what kind of security tickets there can be and what triggers them.

I noticed that I received a response from the third-party software vendor; however, I still need to have the time to review it. Currently, the SharePoint project and addressing urgent cases have absorbed the time necessary to progress further with that particular project.

Friday 26.1

The day started typically as any other day, and I continued the ad-hoc issue with the devices not being able to access the websites. I had a call with the project manager to present the issue, and together we created a plan to address and resolve the problem. Shortly after I called our telecom operator to confirm some settings in our network, they asked that I send an email for a ticket cause the person on the phone could not help me in this matter. This issue is currently my priority to get solved. I had previously worked on this issue from time to time when new updates were available.

As I awaited responses, I made progress on the SharePoint project, introducing new features that were needed. The project should be ready soon, yet, as with any project, expect some changes and challenges along the way that could delay.

In the afternoon, I had a meeting with another Business unit about an upgrade that had been pending for a while. We started to plan to do the upgrade at the same time so that our office buildings would be on the same level in terms of network infrastructure. During the meeting I also learned a bit of the history behind the upgrade and why it has taken so long to implement it.

This particular day was hectic, with constant interruptions and unexpected occurrences demanding attention. However, I managed to power through it and make the most of it.

Week 2 analysis

This week was hectic, filled with numerous tasks that needed attention simultaneously. Some of the days were longer and had some challenging tasks. I was happy to find a tool that I can start to use to create diagrams that will be very beneficial in the long run. This will help with information sharing since it is hard to understand some systems or setups when they need this document. The SharePoint project has moved on nicely and during this week I managed to get it a lot further.

The pressure to solve the website access issue is high. My plan next week is to get that solved. During this week, I escalated it as much as I could. When this issue is solved, I need to see what I could have done better from the start and develop myself in solving these more challenging network issues.

There's room for improvement in my task management skills, including the ability to prioritize tasks efficiently. Furthermore, I aim to improve my organizational skills by systematically arranging and documenting functions for ease of revision when necessary. One example would be the use of a to-do list. There are many benefits of a to-do list. You can organize tasks and projects much more effectively. This ultimately helps you with time management and allows you to focus on the tasks at hand. The list also helps you to see and prioritize tasks in a more holistic view. Larger projects can become much easier to handle when you can cut them down to smaller goals and objectives with the to-do lists. The to-do lists can also help with stress management and give you a sense of ease (Indeed 2022).
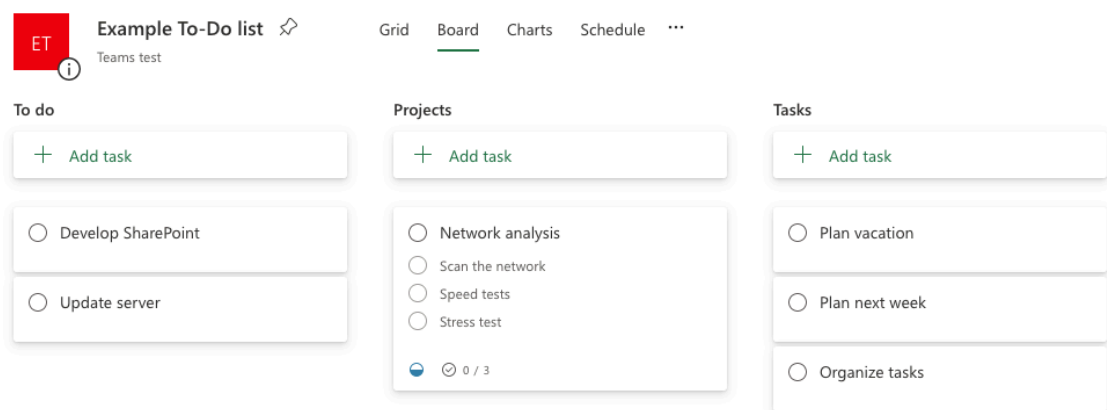

Figure 5: Microsoft Planner to-do list example.

An article written by Tim Pychyl (2020) tells a bit about the benefits of a study on a to-do list made by Shamarukh Chowdhury on undergraduate students. One of the most significant issues students usually face is procrastination, and the to-do list can help them battle against that. The study saw that many students who used to-do lists procrastinated less since they had a sense of conscientiousness about the tasks at hand. The article also mentions the benefits of being more organized, better at placing goals and being productive, but again if you use the said list. As said, they also observed that to-do lists are only sometimes effective. The difficulty lies in maintaining and completing the list, which only works for some (Phychyl 2020).

We currently use to-do lists at work. But I need to find a more efficient way to use it with Its full potential. Having a to-do list significantly improves my knowledge of tasks and projects, aiding in better organization and documentation and additionally helping with not missing logging new tasks or requests.

3.3 Week 3

During this week, I will continue on the priority case where devices are not able to connect to the websites. There is also a decommissioning task that we have planned to progress this week. This week I have also designed to organize my current tasks a bit and get a working system going. I also intend to advance in third party software projects with a diagram of the software system and have a meeting with the project manager. Otherwise, this week has had a few planned meetings.

Monday 29.1

I started the week by investigating the problem with the devices not being able to reach specific resources. This issue is a bit more challenging and finding the root cause has been hard. Currently, I have had to escalate this ticket quite highly to different teams to get assistance to find the issue.

This device issue has been a good learning experience since I have had to investigate quite a lot for trying to find the root cause. This has also given me a chance to use systems and escalating channels that I have yet to have the opportunity to use. Undeniably it has been frustrating for me not finding the issue and solving it. But that makes me work even harder to find the problem and not give up. I noticed that I'm constantly searching for different possibilities and investigating them. During this intense troubleshooting, I have been able to make new contacts in the company, which is very valuable.

I had a meeting with my ITS colleagues and one member from BPM to find new KPIs that we could display in the weekly PD. With updated metrics, we can share the situation with the team in a better way. This was an excellent initiative to develop the PD and get more value from it.

An issue was raised to me during the day with a system that is in active use. I logged in to the system and found the issue relatively quickly. In this case, a simple reboot sufficed to eradicate the problem. This system has quite often issues, but those issues have been tackled to reduce the problems. Continued in the afternoon on the decommission of the servers mentioned in week 1. Planned to physically remove them tomorrow if we get a green light and then complete the tickets given. These are pretty hefty servers, so it will take a lot of work to complete. Also, networking settings need to be revised after finishing this.

Tuesday 30.1

I started the day by going to the server room with my colleague to investigate the servers and plan the decommissioning we had received as a task. Whilst in the room, we decided not to do any physical decommissioning yet. The reason was that we noticed that the ticket for

moving the services to the new server still needed to be done. Also, these are not accessible units to move and would be challenging to place back if required. Thus, hindering us from making any changes yet.

During the morning, I continued working on the task of the device not being able to access the websites. Since this was still my priority task, I was going to work on it until I got it solved. I started to go step by step through the process and tested everything again. I could not solve the issue, so I went for a walk, and after a quick chat with my manager, I figured I would use Wireshark to see the traffic. This helped me to get deeper into the issue but I still needed more clarification. I was sure this was an issue in the firewall that was blocking the issue, and that was correct. After asking the team to check their implementation several times, they found the issue. So, the issue was in the implementation I requested from the start. I had to give feedback to the team that had implemented the request from the beginning. This was a relief in the end since this issue needed to be resolved before the weekend.

I managed to squeeze in time to implement a diagram of the third-party vendor application. This was my first natural step in the project. I contacted my project manager and asked for a meeting tomorrow to check the following steps and see what the results are for now. A lot has yet to happen, but there is still much to do as there is also the other software as a task. The vendor has been beneficial with the inquiries thus far and I see the project starting well.

In the afternoon we had our monthly team meeting where we looked up general company statistics for the month and our objectives for the next month. This was my first monthly and it is undoubtedly an excellent meeting to show how the company is doing and what some general things are coming up in the near future.

In the late afternoon, I received many messages in Teams and I knew something was going on. I went to check our Cacti system. At that moment, I had a slight panic since the system informed me that everything in the network was down. I started intensely investigating this and checking with others about the situation. Nevertheless, everyone's network was working perfectly except for some people who could not access a specific server. Soon I started to uncover that the significant change had happened today. Even though I had asked for the implementation date from our network provider, this impacted the monitoring system in a way that it could not get any more responses from devices. So, this major network incident was, in the end, a false positive in a way. The devices themselves were not down and were serving the internet. I started to upgrade the devices in the monitoring system as much as I could this day. The server that individuals could not access was a coincidence to the network problem and was part of the project of the decommissioning. The issue that was discovered was, however, a thing they did that they did not think through well enough when starting the

decommissioning, and that then impacted several users and raised quite a havoc on its own. In the end, after a long day, we managed to solve these issues quite well.

Wednesday 31.1

Updated the rest of the network monitoring system after the new implementation; after this, the system was back up and running. Unfortunately, there were communication problems during this implementation, and for that reason, there was some confusion yesterday. I gave some feedback to the network providers for this reason. I started to check what features we could improve on in the system itself. I started to take tests during the day and see what was possible.

In the afternoon, I had a meeting with the project manager about the third-party vendor project. We looked over everything that has been done so far, and the progress has been good. During the meeting, we looked at the following steps, and I was shown how to do them. I am planning to do these steps this Friday or at the start of next week. After I have done the steps, I will send the project for review. Then I will look at the progress again with the project manager.

This day was quite quiet compared with yesterday. This allowed me to experiment a bit and continue with the third party software project.

Thursday 1.2

I was able to make progress on both smaller and larger tasks. As an example, I continued to look at the Cacti system and look for things to improve. During the day, I discussed a different matter of a more significant change for our office with another business unit and my manager and I planned a date for it. This could improve our network speeds. For the scheduled date, I would have to be at the office with our network provider to test the results. We would make this change alongside our other business units that are connected to our premises. This change would be a big one since it would impact the whole office and would affect many users. Thus, making it a critical shift that needs hyper care if things go wrong.

Friday 2.2

Today I continued with the Cacti system. I also got a request to check a service we get on the server on which the monitoring system is running. Since I'm not that familiar with everything this system does, I started to investigate. As I studied, I noticed I needed to schedule more time to check the system. I replied to the requester that I would investigate further and respond to him next week.

The SharePoint project was tested a bit today, and we found some issues. I found the potential root issue, and after a few more tests, I sent the results forward. The likely problem was with a loop that did the task too many times. Next week, we are going to do some final checks on this project and possibly get it live.

I received a task to test devices on a specific date since my colleague was on vacation during that time. This test needs to be done within a 2-day window. We had a few calls regarding the tests, and I received instructions on how to proceed. Before the date, I need to contact some people to assist me and make a request to get some items available for me.

Regarding the major change, I reviewed it more with the other business unit called Express and brought it up to relevant individuals. I also took it up during the weekly meeting with our network provider and cc'd them in an email that contains the project. Implementing the project will be a bit harder because we are talking about two different offices from 2 other business units. Thus, making it vital to get the communication right from the start. We simultaneously initiated planning for network provider failover tests on specific Finnish office sites in 2024.

I finished the day by dedicating some time to plan my tasks. Given the recent surge of various tasks and requests, it's necessary to take a moment to organize them effectively.

Analysis of week 3

This week was particularly eventful as we encountered various challenges. One notable issue was devices being unable to reach websites, which took significant time to resolve. This experience served as a valuable learning opportunity for me. Ultimately, it was determined that the problem originated from an error made by another team earlier on. Nevertheless, these kinds of errors occur, and, in the end, it was just important to get the issue solved. Some communication issues also needed to be clarified. In the IT field, effective communication is paramount to ensuring that information is conveyed accurately and promptly. To avoid these kinds of false positives and create any unnecessary disarray.

The network providers implementation that happened on 30.1 is an excellent example of poor communication in a project. What made it worse was that we enquired the date from them before the change. In project communications, you also need to be able to convey apologies and try to be proactive with a solution. An email in this case would be better than an email but rather a call or quick meeting. This helps to keep the trust and professionalism of the service provider (Plowman & Diffendal 2020, 150).

Effective project communication is central to project success. Without clear communication, mistakes and confusion can occur, leading customers to question the professionalism of the

project team. Maintaining structure and transparency throughout a project is crucial. A well-structured project communications management plan serves as a guiding framework, ensuring that timely and relevant messages are conveyed to stakeholders. By adhering to this plan, clarity, transparency, and alignment are promoted, all of which are essential for achieving the project's objectives (Plowman & Diffendal 2020, 79).

In the picture below Plowman and Diffendal (2020) have explained the steps for interaction guidelines.

Figure 6: Interaction Guidelines (Plowman & Diffendal 2020, 87)

In my position, the timely and accurate reporting of various network projects and incidents is essential. This task is closely linked to effective task management, which includes maintaining to-do lists and organizing schedules. Recognizing the meaning of this responsibility, I am actively seeking to develop a method that would be more efficient and reliable.

3.4   Week 4

The plan for the week is to get the third party software project forward by finishing its first stage and bringing it to the review stage. On Wednesday, I will visit the Express Business unit. The idea is to get to know their IT personnel and see their office network setup. The SharePoint project is expected to go live this week. I will also do research on the network monitoring system Cacti that I use on a daily basis.

Monday 5.3

I started the day with an online course provided by DHL about sustainability, which DHL strongly strives for. These mandatory and optional courses offer a great way to learn about general company policies and other standard information. DHL provides its employees with an extensive array of courses and training opportunities, showcasing the company's dedication to

advancing their knowledge and skills. This "Learn to Grow" statement can also be found on DHL's Our Values page (DHL 2024b).

In the morning, I received a request to update a form used in the SharePoint project. The plan was to get the system live this week, and we still have some minor things to tweak. Later in the day, I also had a quick meeting with my manager about some changes that needed to be made to the flow. These changes were requested by the customer.

I started to do research and make updates to our Cacti system again. There were some network maps I started to clean up. These are called weathermaps. These maps allow you to see the actual network situation live quickly. In the picture below you can see an example of a simple weathermap by Joshua Nomwesigwa (2023) in his article on how to add this feature to a Cacti installation.
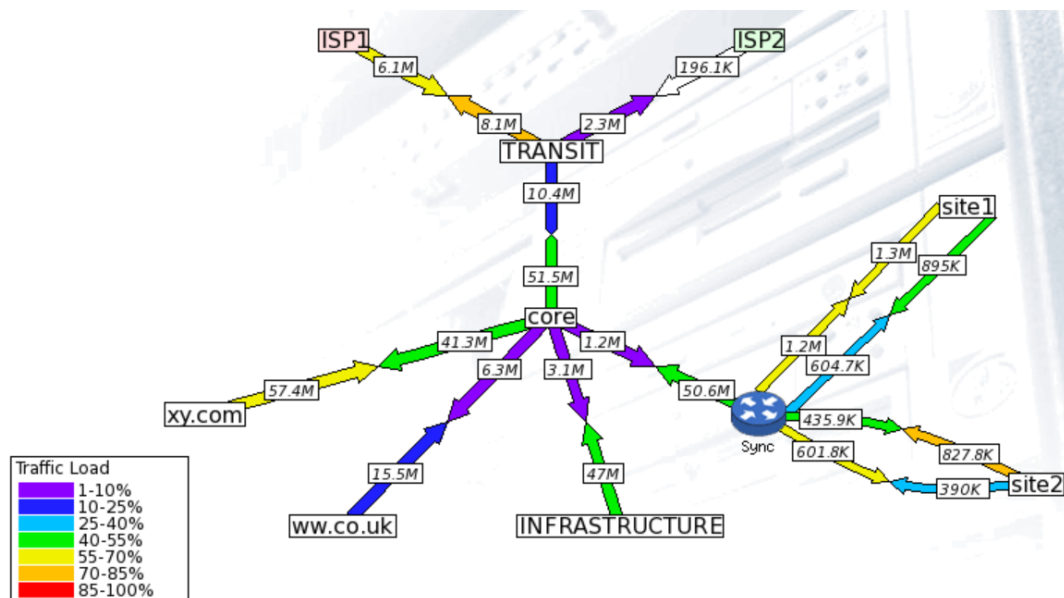

Figure 7 Weathermap in Cacti (Nomwesigwa, J. 2023).

While updating the maps, I encountered some issues that took some work to fix. I spent some time after that on the server that controls the system. This server runs on Linux, and I have been training there on my command line skills and overall learning this particular environment setup. There have been some inquiries about whether we need DHCP logs that are also used on this server. I quickly noticed that the inquiry that was made would take some time to get an answer to because of the complexity of the setup.

I also had good discussions with my colleagues about the company's IT history and other projects. These discussions are a good way to get information you cannot get on documents or other ways, also called tacit knowledge. I also noticed that I need more time to continue the

third-party software project, and the time needed for that should be scheduled in advance to block those slots in my calendar.

Tuesday 6.3

Today I continued with the SharePoint project with the requests that were presented earlier. The requests, however, were challenging to get done since it was a new logic that needed to be built and would require several supporting features and some thought process.

A network incident was then suddenly alerted to my attention. An office had issues with the internet not working reliably and had constant disconnections. After talking with the office contact and gathering initial information, a quick fix for the issue was needed. Usually, these kinds of symptoms that were reported are hard to pinpoint and difficult to investigate. The devices in the network monitoring tool that we use did not indicate anything strange, and neither did the network providers either. A ticket was opened and escalated by a call afterward to get imminent attention to it.

I noticed again in the Cacti tool that some company sites have been implemented with the earlier change that was impacting the devices real status, and I started to update their devices so that device information would start to flow normally. The network incident also needed close attention during the day because it impacted the office's work capabilities. This also breaks one of the CIA triads. The availability was inoperative since the users could not reliably access the internet and their resources. These incidents also should be considered to be possibly hostile because there is a chance of an intentional attack due to the current political situation in the world. (Fortinet 2024).

A data storage change coming to our headquarters office has started a larger discussion within our team. I began to research the wanted change and brought up my concerns regarding the change. After discussing this with my team and manager, I took more time to find a solution that would work better if this change would come true.

The failover test discussions continued today, and we managed to get a possible time slot for one of our company sites. The date that was given was reported to our network provider, and they confirmed it. Now, there is only one site left to plan for. During these plans, I took time to review the changes scheduled for the next months. It is crucial to occasionally take a pause and assess the broader perspective of happenings before delving back into the details and daily work.

The day was notably busy due to the network incident, yet progress was still made on other matters.

Wednesday 7.3

Today, I visited the Express business unit that is located on the other side of the airport. The idea behind the visit was to get to know their IT department and learn a little about their system setup. This location is going to make a major change at the same time as our own office. The visit was a success, and contacts were made within the business unit.

After the visit, I had to check the emails that I had been missing and enquire about the network incident from yesterday, and everything seems to be working normally now. There was also some time to make changes to the SharePoint project. Currently, users conduct tests to see if anything needs to be done. If everything works as it should, it could go live tomorrow.

Thursday 8.3

During the morning, it was reported that one company site still had network issues. I first took this as a critical issue. After some time, it was discovered that only one person had issues. Therefore, the network provider's support in this case was no longer needed. There was a suspicion that it was connected to a broader problem that is now known in Europe. This, however, was not the case.

Every month, we participate in performance dialogues with different departments as a visit. Recently, it was the customer service department's turn. During this meeting, I was interested in learning about their ongoing projects and the key performance indicators (KPIs) they are monitoring. These dialogues provide a valuable opportunity to gain insights into the activities of other departments and increase our understanding of their roles and responsibilities.

Throughout this day, there were a lot of email discussions regarding different cases. Following up on these cases and replying to emails took some time. Many of the cases required research and follow-up for other individuals. One of the emails was to check on the server's vulnerabilities, and another one was to place the SharePoint project live finally.

A few weeks ago, I started to do some testing with labeling and categorizing emails, which has helped with day-to-day emailing. Emailing is one of our core tools; making it efficient is vital to optimize your time during the day.

Friday 9.2

The plan today is to get forward with the third-party software project finally. I have reserved most of the day to be able to continue it. During the day, I was able to do some of the work, but I will continue next week and schedule a new time slot for it.

A new project was introduced during the morning. This concerns a different customer, and its main focus is SharePoint and Power automate again. The plan is to start this project next

week. Considering the other projects, I will try to find a time slot next week to work on them. The other SharePoint project is live now, and some minor things were reported. I will try to find a slot to fix those issues.

I began addressing server vulnerability issues and conducted thorough investigations into reported concerns. I required extensive research to gain clarity on the issues and plan possible solutions. I encountered new utilities along the way while doing my due diligence. When I started in this position, I expected many new things, but I have encountered things I did not expect for this position. This was one of the unexpected ones. Despite the challenges, the exposure to a great number of new experiences has been highly enriching and positive.

In the afternoon, there was a weekly meeting with the network provider. We brought up some issues that have occurred and gave general feedback. There was also an emergency update happening on the weekend, so we were informed in more detail about that.

Week 4 analysis

During this week, I did not manage to move forward with the third party software project. But I had set up some plans to bring it forward during the next few weeks. The reason for not being able to move on the project has been that there have been other critical and more important tasks. Merely, the reason has also been the time management of the weeks and needing to plan the weeks properly because I'm pretty new to this position.

The highlight of the week was the completion of the SharePoint project. Nevertheless, I am expecting some changes that will come forward after some use of the new system. I am happy with the result and the initial feedback I have received on this project.

There is some improvement from my side in finding a good way to convey network incidents and how to handle them. To have a good process for incidents is very important, and every step in that process is equally important. We can learn something from Cisco (2014) in this case and they list in their FireSight manual very simple handling. This is more aimed at cyber security incidents within a network, but it could also be applied to normal network incidents. Listed below in Figure 8, you can see what different steps are listed in this manual (Cisco 2014, 19-2-19-4)
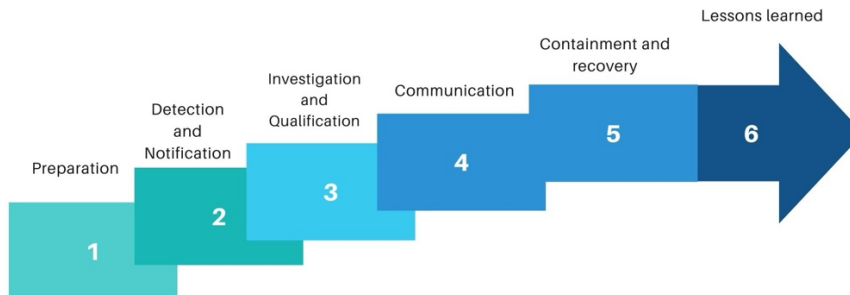
Figure 8: Common Incident Handling Processes (Cisco. 2014, 19-2-19-4)

As mentioned in the Cisco user guide, incident preparation is essential so that you can understand the critical parts of your system. Is it the router, or is it something else? In the next step, it is crucial to see that something is happening in your network, and it needs to be notified somewhere so it can be reacted to. The faster the initial notice, the quicker you can work on the incident. It can also be an early alert that a system is getting overwhelmed by network traffic. Thus, it could hinder a major incident from happening (Cisco 2014, 19-2-19-4).

When an incident occurs, it is best to start investigating it, and there should be a straightforward process for it. Who handles what and when to escalate it, while considering the severity. Equally important is ensuring that everyone involved understands the process. This goes hand in hand with communication. Lack of clear communication, or any communication at all, leads to confusion and inevitably results in mistakes. Communication needs to be good with internal and external stakeholders (Cisco 2014 19-3-19-4). As an example, it would be the company site and our network provider, and usually our own NOC team as well.

In a network, incident containment and recovery are important. Especially a major incident because it could be halting operations fully and creating financial loss. In a cyber security attack, you should always think about saving evidence if you need to press charges. Evidence is also good to know for the lessons learned. It is important to log the whole incident and gather as much information as you can to review later. You could find hidden issues that need to be solved or similar kinds that you would have missed if you had not logged the incident. What you could do better and if you could revise the process and make it even better (Cisco 2014, 19-4).

A bit more about the incident communication. The tools you use to contact relevant parties should be thought out before an incident. Are you using SMS, teams, email, or even a phone call? The messages or calls should also be made for the right audiences. Atlassian (2024) also mentions well that you need to remember to have good first contact. If you are escalating a ticket, it should have the required information to be handled as the categorization of the urgency. Ensure sufficient updates are provided during the incident to keep all relevant parties well-informed about the current situation. It's crucial to reach a resolution, conduct a debriefing analysis, and outline the next steps. This approach ensures that users or stakeholders receive confirmation that the issue has been resolved, understand what occurred, and how these kinds of incidents will be prevented or minimized in the future (Atlassian 2024).

These are some of the steps that I could use in my incident management process. Particularly, the lessons learned step is very valuable and provides significant insights to improve processes.

3.5   Week 5

At the start of the week, we planned some testing and updating for scanners. This needs to be done in two days' time. On Thursday, I will have my development discussion. On Thursday, there is also a router change in an office that I will be supporting if needed. The plan is also to move on to the third-party software project, if possible, later in the week. During the week, I would also need to investigate updating server applications.

Monday 12.2

I started the day by preparing for a scheduled test of some specific devices. The initial step involved obtaining additional permissions for my computer, enabling me to carry out the device tests. Then, I read the guide and emails I had received to complete the actual testing. There are quite a few devices, some of which are in the terminal, that I am required to test within two days. However, my goal is to complete this within the day because I have some meetings tomorrow, and today was luckily entirely free from them. To ensure I could locate the devices and access the premises, I reached out to the Terminal Manager for assistance.

My day continued with a matter regarding a SharePoint issue. One of the issues was that the person who was initially helping with SharePoint items was on sick leave. We had a few calls during the day to coordinate the changes needed. Thankfully, these were relatively quick changes, and I could focus on the priority testing task. For the past few weeks, I have started to get these spontaneous questions and requests via Teams and emails that I need to start taking into consideration when planning.

Before going to the terminal, I started to look into an ongoing case regarding a firewall change to a new one. I looked at the current status and tried to advance the project. What ended up happening while I was preparing to leave home was that the person implementing the firewall asked if I could go to the firewall since it was responding. Then, we configured the firewall for a few hours and discussed the project.

In the terminal, all the tests went as planned and went very swiftly. I discussed briefly with the terminal manager that I would need to make a longer visit someday to learn about their network setup. This way, if they had any issues, I would have an idea of how the layout is, and this helps make troubleshooting much easier. The day ended up being very productive and giving.

Tuesday 13.2

I started the day by filling in the development discussion form that I will have on Thursday. During the discussion, I will get my first real feedback on my work performance. I'm excited about the feedback because I have not been working at DHL for that long yet. During the discussion, we also will talk about and plan where I could develop myself. Also, I will have the opportunity to give feedback on work conditions and environment.

During the morning hours, I had a meeting with the network provider. The reason for the meeting was to check that everything was good to go for the router change that had been planned for the office. This meeting gave a good impression of how things could be with this network provider and left me thinking as to why these were not done in other projects. This swap of a device is planned for Thursday, and I will be assisting remotely if needed.

There was a new request for the already live SharePoint project. Some new flows should be built to automate the functions that have already been built. These were really good ideas and should be easy for me to implement. I planned to finish those requests this week. We will see how long the request will continue after going live.

During the day, I had some discussions with my colleague and manager about the firewall task. They appreciated that I was able to get it forward yesterday since the project has been stale for a while. The plan now is to update the already existing LLD that is now missing some new data and details. The LLD, in this case, is a simple version of a network diagram.

In the afternoon, after our team lunch, we had a discussion in our performance dialogue about a change that is upcoming during this year that I have mentioned before. The change is that we are decommissioning one of our servers that is hosting data storage that is used by the whole company. We needed a project manager for this, and I volunteered. Then, two of

my colleagues said they could assist with the project. This is going to be one of the largest projects I have done and needs to be done with perfection and professionalism.

Wednesday 14.2

I continued to develop the flows that were requested for the SharePoint project. The first request was made quite quickly due to its simplicity, and another flow could support it. After some time, I started on the second one, but that one needs much more time to complete. During the day, I thought about how to build it and created the base of it.

In the afternoon, I started analyzing some IPs I needed to find for the firewall project. I started looking into the HLD. The HLD is a detailed version of a network diagram. The HLD in question is very large and complicated, so it took some time to go through it and find what I'm looking for. From our IP management solution, I found some IPs that could be the ones. However, I wanted to confirm them fully, so I decided to contact a network engineer from Sweden with whom I have worked a few times. We looked over the HLD and LLD together, and I showed what I found. After some discussion, we discovered that the IPs I initially found, and those I was looking for were correct. I then sent the information I found forward.

This small but complicated task was the day's highlight and taught me a few things. I will definitely look at the other company sites and their HLD to learn, first of all, how the HLD is constructed and also how smaller and larger sites are built. These more significant company sites definitely can get very complicated thus making the HLD ever so more challenging to process.

Thursday 15.2

I started this morning by trying to figure out the vulnerability fixes. After trial and error, I found that I had to create a ticket to get assistance to fix a problem. During this process, I also made an error, which impacted a feature of the Cacti system. Later, I reported this to the manager, but there was no simple fix before the ticket was solved. The feature, however, is thankfully not a critical function.

From my mistakes, I need to learn and ensure they do not recur. Making mistakes can sometimes be beneficial for learning, as nobody is perfect. It's crucial to recognize and understand our errors, as they provide valuable opportunities for growth and improvement.

During the day, I had a development discussion with my manager. This went well, and I received good feedback on the work I have been doing thus far. We also found good targets that I could set myself for this year.

I contacted the office that is having a router change today, and they said it did not go as planned. The change was not a plug-and-play as they announced. The issue is that the FE did not have the function to make the connection to the network provider that would configure the device. But as I have noticed, all the "easy" tasks are usually not that easy. You have to analyze the task from many angles so that you are prepared for various complications that could happen but do not make it too complicated.

Friday 16.2

I began my day by addressing reported vulnerabilities and investigating the ticket I generated earlier to resolve the issue. Despite detailing the problem in the ticket for the resolving team, it seemed there was a lack of understanding of the issue. After further explanation, they grasped the issue and corrected the original problem. Unfortunately, the mistake I made yesterday intensified the situation. The majority of my day was spent troubleshooting and searching for a solution. As I investigated deeper, I started to uncover some answers and identified the root cause of the problem. However, just as I was investigating in the final hours, a power outage occurred at my home hindering further investigation for now.

There are now larger issues with the system we are using with the network monitoring. This is, per se, not a critical system, but it gives an overlook of the network. I have decided I will focus on this system more closely for a few months to get it in good working condition. The network provider, in this case, has the main responsibility for monitoring and maintaining the network.

I had some time to get my third party software project further. There has been a lot happening lately that has kept me away from the project. I was, however, happy I had the opportunity to focus on it a bit. I have planned for next week to focus on this project and make full advancements in it. I opened the documents I had as guidance, which helped me in categorizing confidentiality, integrity, and availability on some of the open items I had been working on.

Week 5 analysis

This week left little time for the third party software project; however, it is planned to go forward next week. There was a lot of investigation going on this week with the firewall, HLD and LLD analyzing, Cacti system, SharePoint, IP structure, and much more. There was a lot to cover. But, as expected in IT, you need to keep learning and developing your skills within your niche of the branch.

When it comes to network setups, making designs and keeping documentation is key, even for smaller networks. Without clear documentation, it becomes really hard and time-consuming

to understand how the network is structured. This is especially problematic when you need to fix issues or do maintenance work (Donahue 2011, 627-628).

Having good documentation makes troubleshooting much easier. It helps you quickly figure out what's wrong and how to fix it. Plus, it's important for growing or changing your network smoothly. Overall, taking the time to document your network pays off by saving you time and hassle in the long run (Donahue 2011, 627-628).

From a cyber security point of view, it is also important to document your networks to identify your network weaknesses and your possible crucial targets. The documentation is also valuable information for cyber security incidents before, during, and after. Note that this information is highly confidential and needs to be protected from bad actors. With these documents, they could possibly create a large amount of damage (Australian Government 2024).

I made a mistake during the week, and the error had its own benefits. This helps me to grow, and there is a spike of knowledge that comes with it as well. The reason is that I started to investigate the issue quite intensely and tried to find a solution. During the investigation and troubleshooting, you automatically cross paths with things you would not otherwise see or learn.

It is important to identify if you have made an error and report it. Otherwise, it is very hard to know if something has happened due to a change or some other reason, and troubleshooting random errors is very difficult compared to when you know the root cause from the beginning (Donahue 2011, 697).

As highlighted in Caeleigh Macneil's (2023) article and represented in my own experience, it's crucial to openly discuss and acknowledge mistakes, start brainstorming solutions, and begin the process of learning from those mistakes. However, one aspect I overlooked, as stressed in the article, is the importance of taking a moment to pause when you have discovered the error you have caused, reflect, and prioritize self-care after the whole experience.

3.6   Week 6

The third party software project will be the assignment that will be prioritized for this week. I will also host a PD and attend other meetings. The week will also include troubleshooting the network monitoring.

Monday 19.2

Straight in the morning, after I checked my emails, I started troubleshooting and investigating the Cacti solution and system. There is a lot to unpack and learn from those systems since

they are not anything ordinary I have encountered before. The Linux version is an enterprise version that is locked down quite heavily. This hinders the normal updating and management of the system, as I have mostly used Kali Linux. The network monitoring system is highly customizable and has PHP plugins, among other options. Since I'm not familiar with PHP, analyzing the plugins can be challenging. Additionally, the system involves numerous minor setups that must be thoroughly understood before any changes are made.

I had to open as many resources as possible to identify the potential issue. During troubleshooting, I also noticed time passing quickly as I was fully focused on finding the solution. After testing almost everything I could in a timely manner, I decided to contact another business unit that has a person who has a very similar Cacti system. We had a very good discussion of the issue, but the time ran out, and we planned to check it more tomorrow. This day, we went fully into the investigation with some other minor tasks.

Tuesday 20.2

I continued troubleshooting the Cacti system with a strong determination to resolve the issue. I approached the task with excitement and eagerness to try to solve a seemingly impossible puzzle. I started by reviewing the solutions that were attempted the previous day. Each step I took felt like progress towards the answer. Today, my focus shifted to examining the system and understanding why the specific function was malfunctioning. I combed the server logs collected by the system to see what it was trying to indicate.

In the late afternoon, a clue emerged, an error indicated that a system was unable to execute an application. When I investigated further, I discovered that the function it was running had recently been updated, causing a switch in its location within the Linux system. I started to realize this was the root cause of all the problems. After redirecting all necessary points to the new application file's location, the system finally began to function properly. During the day I also had to attend a few meetings while working on the solution. One was the PD, where it was my turn to lead, and another was a meeting where we discussed this specific issue and the storage project.

Having dedicated two workdays to troubleshooting this issue, I felt immense relief when I witnessed the system working flawlessly once again. This journey of troubleshooting this issue taught me a lot about the system and even advanced Linux concepts.

This was one of the hardest tasks I have had to solve. These problems are also something I really enjoy solving when there's no clear-cut answer. When you really have to investigate and put the work in to learn a new system, understand the foundation, and, from there, slowly find your way to the solution.

Wednesday 21.2

Today was no different, and I continued to troubleshoot some errors that the Cacti system was giving. These errors were, however, not hindering the system from running its main tasks. I also checked to see if the fix I made yesterday was still working. There was also a change coming later from the Linux team that would repair some of the errors I was seeing. During the day, this mentioned change came, and it was able to solve most of the errors. The deeper I delved into this system, the more I found to fix or to cleanup to make the system more stable. Since these are not critical items at the moment, I will allocate time for these at a more suitable time.

During the day, there was quite a long meeting about a change that was coming. This is quite a large change, and I was added to the project because of a person who is on vacation. This project is related to the testing I was doing last week with the devices. It was first planned that I would only do the testing. Thankfully, due to my tight time restriction, a colleague in the team will do the go-live testing with some other stakeholders. This was a huge relief since I was quite swamped already.

I tried to find time for the third party software project, but I had a meeting very late in the afternoon that suddenly turned earlier. That meeting was regarding the firewall change. During the meeting, we needed to find answers to some parts of the system. We had to bring along a few more colleagues to assist. Working with highly skilled and senior professionals in this meeting enabled me to learn many new things.

The meeting took longer than expected, and I had to answer some emails that had piled up during the day. One of the emails prompted me to contact one company site's main contact to ask about an offer that was made by an operator to upgrade a network line. This is an old ADSL line that should be upgraded to fiber or something similar cause the operator wants to decommission the old lines.

Thursday 22.2

Quite early in the morning, I received a message from a company site contact person. They had issues with their Wi-Fi, and it was impacting their work. I took a call with them to get hands-on help for them. We started testing different things to find the root problem and go from there to solve the problem. The symptom was that some users would get no internet connection when connected to the office Wi-Fi. After asking the user to go around the office and do some tests, we found out that when you are close to one of the APs, you would disconnect. Consequently, we assume that when users get connected to that specific AP, they lose their internet connection. Therefore, we can conclude the Wi-Fi device is not able to serve the Internet. After finding out this, I opened a ticket to our network provider to start

investigating it further. It could be simply that the device is broken or that the port it's connected to is blocked.

I continued to work on the network monitoring system. But during the day, I was contacted by colleagues from Sweden, and they asked me to check their monitoring system. They reported that their server was having some issues. I had a few calls with their IT personnel and gained access to their system. I started to look at what could be wrong. Quickly, I found the issues and told them that I needed to update their system when it suited them. Thankfully these updates were not urgent.

I was able to make progress with the third party software project. I made the last changes and also did a BIA for the software. Now it was only to send it for review and make a meeting with the risk manager to check it over. It was not a trivial task, and I used the internal guidelines to make the last edits. Important items were to think about the confidentiality, integrity, and availability requirements and the potential risks of this software. These decisions had to be made for every part of the system as well. I had some advantage in this task due to my school courses that were going through very similar topics. Now, this project has been sent for its first review, and we will continue from there.

BIA analysis is important to see if this software has an impact on the company in case it gets breached. It also helps to measure what kind of loss a company would have in case something happens. BIA also helps with recovery strategy of what kinds of backups you take and other requirements you could need (Swanson et al. 2010, 44).

In the afternoon, I made an out-of-office notification, so people know I will be on vacation this Friday and on Monday and Tuesday next week. I also checked to see if there were any tasks that needed to be delegated to my colleagues. I made sure to explain the cases to my colleagues, without a proper handover it would be quite demanding for the collegues to properly follow the open cases I had. The out-of-office message is important to make sure that when people, for example, send you a message via email, they get a notification that you are not available and either escalate it another way or wait for me to get back.

Week 6 analysis

The start of the week started intensely with finding the solution for the error made. Fortunately, we found the root issue and we were able to solve the issue. It took many hours to solve the issue, but we learned a lot about the system along the way. I was able to also utilize all my troubleshooting knowledge to my best ability.

I was able to make progress with the third party project. Finding the time has been the issue during these past weeks and now I found the slot. Now the plan is to get the project to the next steps where I have to contact the software provider again.

The week continued with troubleshooting Wi-Fi issues at one of the offices. This issue was in the beginning very strange, and I got quickly intrigued to solve it. The root problem was caught after some guiding the office remotely to do the troubleshooting steps. After finding the root cause, I made the ticket to the relevant team to take over the rest of the steps. If I had had the opportunity to be in person at the office, I would have been able to continue troubleshooting and finding possible solutions. I have also planned to make a trip to the company site in question and to other locations.

There are several methods to complete the process, such as troubleshooting. If we take as an example the CompTIA troubleshooting methodology, it contains the steps below in Figure 6 (Garn, D. 2024).

Figure 9: CompTIA troubleshooting methodology (Garn, D. 2024).

This methodology is meant for IT Support but it suits my role well. It contains seven steps that are followed in order. First, you have to identify the issue at hand. You can use different methods for this, but usually, I want to see the issue myself and try duplicating the issue, for

example. You should also try to pinpoint the issue. This way, you can start to focus on a smaller area. Following this, you can start to find the root cause of the issue. A good example would be an update to software. When you have theories, you can try them out and try to prove your root cause (Garn, D. 2024).

When you have found the issue, you can try to plan out the solution for the issue. When you come up with a solution, you have to take multiple angles into consideration. One that gets mentioned by ITFreeTraining (2021) and by Garn (2024) is that they recommend making backups before making any changes. This is also true when you make any kind of changes in any area.

The issue could be that you need to escalate, or you can already implement the fix. When you have checked that nothing is preventing the implementation and made the sure that you can do the change. You have to keep in mind that you need to check the system afterward to see if the system was really fixed and if there were no other issues popping up due to the new change that was done again (Garn, D. 2024).

Importantly it is recommended to note your findings of the issue so they can be either fixed or next time it comes around it is known how to fix it. As well, if somebody else takes over the case, they would benefit greatly if there were information on what has been found and what has been tested (Garn, D. 2024).

Noted in the Article by Garn (2024) you should also check all simple troubleshooting steps first. It could be that you only need to restart the system and it starts to work. When you have also worked in a position long enough, you know how everything works, what the common issues are, and how to resolve them. With all these steps, you can create an efficient and smooth troubleshooting framework and tailor it to your needs. You will additionally save time and money for the parties involved.

3.7   Week 7

This week will be hectic due to the pile-up of tasks and because I was absent for four days last week. Therefore, week 9 will be skipped, and 4-8.3.2024 (week 10) will be week 7. I have planned to work some overtime if needed to catch up on items and if there are any issues during the week. Otherwise, nothing special is planned for this week, so I will be working on items on my do-list.

Monday 4.3

Due to vacation and sick days, I accumulated a significant backlog. Last week, I was able to catch up on some of the work during the one day I was working, which helped kickstart this

week. After going through all my emails, I also addressed some items that my manager wanted to review.

After catching up on most of the things, I received a message that the SharePoint project I had finished had some issues. I was aware that there had been some changes to the system last week. This impacted the flow and broke it down. I immediately started to analyze the issues and called one of the stakeholders to gather some information and report to the team that the system could not be used for now.

I worked on the issues all day and stayed overtime as well to try to solve them. I managed to solve one of the flow branches and got it to work even more efficiently. The core issue of the problems also seems to be that the item it's working with is so large that it cannot handle the data. To fix the rest of the issues, the flow needs to be optimized and developed so it can cope with large amounts of data. Tomorrow, I will continue to find a solution so that the system can be operational again. There were some other issues also raised to me during the day, but I had to place them on backhold for now due to the critical issue at hand.

I had a meeting with the risk manager regarding the third party project. We looked over the results and discussed the next steps in detail. I received feedback that the work thus far has been good and correct. Some minor tweaks needed to be made to the classifications. There are also some documents I need to fill out with the software owner at the company. The documents contain how the software works with authorization, logging and monitoring, and deletion. These documents are quite extensive and decently complex and, therefore, need time to be completed. I am also now able to send the large questionnaire to the software provider. We decided to create a meeting with software stakeholders to complete some of the open questions we gathered during the meeting.

Tuesday 5.3

Today, I focused on resolving critical errors in the SharePoint sites. Two issues are currently consuming most of my time. The complexity results from the simplicity and lack of support in Microsoft's code, making it challenging to find the specific workaround needed for the system to function. This task is challenging compared to conventional coding languages and logic processes that I have worked on before. It became frustrating throughout the day, but after working overtime, I may have found a solution to one of the problems. It will be tested tomorrow.

When I was not troubleshooting SharePoint issues, I had a meeting with one of the third-party providers. This provider is the same one I am doing the risk assessment on. The agenda was to see if one of their software features could be used on our computers. This would require

some possible tweaking from our side to allow the traffic. However, this could be solved with a simple solution that needs to be tested first.

Yesterday and today have been very long days of managing the issues at hand. This has impacted other cases and brought them to a halt. I would need to find time to organize my work more to stay on top of all active tasks.

Wednesday 6.3

During the morning, I took a call with a colleague to check on the solution that I had made the day before. We briefly looked at how it worked and tested it a bit. After the call, some tweaks still needed to be made. After the tweaks, I contacted some of the stakeholders and released the version. Now we only need to monitor it to ensure that it behaves as it should.

We received notification that we could start decommissioning the servers that we were looking to do earlier. In the server room, we checked several times what servers we needed to shut down. We also decided only to shut down the power supplies and unplug the power cables. This way, if there is a need to run the up again, it would only need some minor work. However, the risk that something was missed is low. We will leave the server on the rack for a while before decommissioning them physically.

I received guidance from the third-party software provider on the feature we wanted to use. I wanted to test the functions and see how they would behave in our system. After installing the required things, I started to test if it would naturally work without any changes. I also had a quick teams call with the software provider to go over my findings. We also discussed the other options to get the function to work if I could not get it to run under ordinary conditions. I found a solution that would work with some quirks. I reported these to the stakeholders and installed the required software on their computers. Now, they will test the functionality and report if they stumble on any difficulties.

The rest of the day, I worked on SharePoint matters. I came close to finding the last solution to the last reported issue. It helped to look at the issue from another angle and see if there was another way to do it. For that, I needed a call with one of the system's users to ask about some of their needs and processes. To really work on these solutions and get the work finished, I had to allocate time, and to compensate, I stayed overtime again.

Thursday 7.3

In the morning hours, I checked that all SharePoint and Power Automate functions that I had made and was monitoring were working. During my check, I wanted to look at a function's capabilities, and when researching the function, I found a solution that would fix or relieve the last issue on my list. I started to wonder how I did not find this setting earlier since it

helped with the exact issue I was having. After intensive 3 days, all the issues that were reported have been resolved.

Today, I familiarized myself closer with our ticket system. I wanted to see if there were any open items for our teams and if there was something open, especially for me. I have used our ticket system, ServiceNow, before, but since it is very customizable, it takes time to learn the new environment. At the same time, I got a notification to see updates planned for servers, and I had to review the changes and, lastly, reject or approve them. These items come from time to time since I am listed as owner for some of the servers, thus adding me to the approval processes to get the changes approved.

We have an upcoming meeting regarding our mobile phone plans that we procure from local telecom providers. The meeting agenda is to discuss the current providers and if there is a need to put out a tender to get a better price. I decided to get more background info on the current providers and the reasoning behind why those were chosen, so I called a different DHL business unit representative and discussed the item and history. After the call, I had a good idea of how things are set up at the moment and what DHL's needs regarding the operator choices are.

Friday 8.3

During the morning, I received an automatic email about some efficiency complaints about my creations in Power Admin for the SharePoint sites. I noticed that some requests were made when not needed. So, I made some minor changes to block any unnecessary requests. With this simple change, the requests went down. I decided to check simultaneously if there were any other flows that had similar issues.

Next, I planned to work on my third party software project. I reserved a timeslot in my calendar to block any invitations for that time. This also helps me mentally to get a secured slot to work on a specific item. During the timeslot, I prepared the questionnaire that was planned to be sent to the software provider. I made sure to answer some questions regarding the document with the risk manager. After clearing up the open items, I sent the document over. I also read the rest of the documents that I need to get filled. For these, again, I would need to organize a meeting with the software owners and possibly get some additional answers from the software provider. I have planned to organize these meetings as soon as possible. At the moment, however, it is quite busy for everyone, including me.

I also worked with the Cacti system. Just recently, there were issues with AP devices at a company site. I wanted to add these to the weathermap in the network monitoring system. This way, we can quickly see basic data on the devices when needed. I also continued to investigate possible development items on the system.

The rest of the day, I had the weekly network providers meeting, and I continued to work on learning the ticketing system. I also managed to work on my structure outlook to organize my emails.

Week 7 analysis

This week was quite tough. The first three days alone accumulated 30 hours of work. During these hours, I worked on my normal work and the critical issues with SharePoint/Power automation. Since my absence the week before, it was also important for me to organize my emails. During that time, I received quite a large number of emails, and I noticed the importance of developing my email processing and categorization. For the rest of the week, I managed to work on the third-party software project and other tasks. During the week, I also wanted to learn more about our very compound ticketing system.

I'm quite happy with what I managed to do during the week, even when there was not much time for anything extra. Sometimes, you have to work a bit harder and for a longer day. To counter that, it is important to balance that workload with resting your body in your own way. Especially when you are working on a thesis at the same time.

Thankfully, DHL provides flexible work time, and this has been studied to help workers feel more refreshed. The freedom to start work, for example, after 10 am, can help people who want to sleep in a bit. The reason can also be to take their child to childcare or just to miss the traffic jams. As well you can start earlier for those who are morning people (Kodz et al. et 2002, 36-37).

DHL offers hybrid working. Remote working is a new benefit that gained popularity during the COVID-19 pandemic. This benefit has several advantages. Working alone at home can increase productivity, save time and money on commuting, and allow flexible scheduling to balance personal and family obligations. Both the employer and employee benefit from these factors (George, B. 2021).

I think it is important that a person can choose how much work they do from home and at the office. I would like to work 2 days a week at the office. Also, I like to be at the office when there are meetings that are possible to have face-to-face. I have mentioned before that I see many advantages to having some office days to keep communication and collaboration optimal. When I'm working on something that needs focusing, I prefer to be at the home office. Also, when there are meetings that are held in teams, I like to attend them at home. There are quite many opinions on this matter, but some balance of both is a good middle ground.

3.8   Week 8

One of my upcoming tasks is to meet with a company site regarding upgrading one of their network lines. They also have some other items they want to discuss during the meeting. I will work on the third-party project whenever possible throughout the week. On Tuesday, my schedule is mostly packed with meetings, so I won't have much time for other tasks. Additionally, there is a planned server decommissioning on Wednesday.

Monday 11.3

I started the day by focusing on emails I had received and checking that Cacti and Power Automate flows were working normally.

Later I had a meeting that I was suddenly invited to. The reasoning behind that is that I was fixing some of the issues last week in SharePoint so I could give insight into some of the functions that I had been working on. There were some questions that I was also able to answer regarding the new flows I had implemented.

Later in the afternoon, I had a meeting with one of the offices about their open items. We discussed the items and decided it would be good if I could come to their site and physically see the setups. We could also talk more about our items in person. I asked my manager if I could take a trip to the location this Thursday. This was approved, and I informed the site that I was coming and provided some basic information that they needed to get me to the restricted area where they were located.

I was prompted to make some changes to a system that we use that allows traffic from other companies to our system or to their system, in short, firewall rules. In this system, we can keep records of the rules and other useful information. The task was to update the new owner to some of the requests and remove the old ones.

Tuesday 12.3

I had several meetings planned for the day, and they occupied most of my time. There were also a lot of people at the office, so I took the opportunity to catch up with them and discuss work-related matters. I realized the importance of office days, as they help to boost team spirit and communication. Today's experience clearly highlighted this.

In addition to attending meetings, I spent some time making changes to a few websites and their network. We have decided to cancel some of the company site networks that were being provided by our primary network provider and instead obtain network services from other ISPs. This decision was made in order to reduce costs and because these sites do not require expensive network setups or monitoring due to their small size. It took me some time to

properly place the order for decommissioning with our network provider, as this was a new task for me, and I wanted to ensure that it was done correctly.

I have been investigating the network options for each company site and determining the most suitable setup for them. Depending on their sizes, some sites could manage with simple configurations. Ensuring a reliable internet connection is crucial. Hence, I reached out to one of our ISPs to explore available options and offers.

Wednesday 13.3

Today, we had planned to decommission some servers, which involved physically disabling them. After completing our morning tasks, we proceeded to the server room with all the necessary tools and began planning our actions. It's essential to be cautious while working in a server room, especially during decommissioning. We started the process slowly, ensuring that we didn't disconnect any cables that were still connected to active servers. We took our time, and as a result, the decommissioning process took a while. I quickly realized that having two people working on the decommissioning is almost a must. The cables were not easy to reach, and it was challenging to work with the servers without assistance. We were not able to finish the decommission today. We also did not want to proceed too quickly with this task. We still need to remove the servers from the racks and remove some cabling. Importantly we also need to sanitize the drivers removed from the servers.

Later in the afternoon, I decided to move to my home office. The reason was that I had only meetings left for today. These were also online meetings, so they were easier to conduct at home. One of the meetings was about some Wi-Fi issues that have been raising problems in Europe. During the meeting, which all countries from Europe were attending, I gave Finland's accounts of the Wi-Fi issues that I had experienced during my short time. The purpose of this meeting was to provide feedback to the network provider and discuss the related issues.

Thursday 14.3

Today, I visited a company office that was quite far away, so I had planned to stay there the entire day. We created an agenda for the day with the site manager, which we went through together throughout the day. Their setup is somewhat unique, and therefore, it was helpful for me to see it in person to understand the system.

Upon arriving, I was given a tour of the site and met the employees. After the tour, I set myself up in a room that had been prepared for me. During the tour, I was shown all the network equipment, so while the others went for meetings, I started to analyze the setup. The site was recently new, so I was mostly interested in the network rack. There was not much information to go on from before, so that was the place to really get an understanding

of their setup. After a few hours, I documented the important parts of the network and understood how the site was configured. Their site was unique from other company sites, which made it hard to understand at first.

After having lunch, we continued our discussion on various topics. One of the things they were interested in knowing was about Cacti and its potential uses. I also provided them with updates on upcoming projects and recent happenings. We also went over the invoices to see if there were any services that were no longer required. Fortunately, we were able to identify some services that were no longer needed. It's important to periodically identify and cancel unnecessary services to avoid incurring costs. These could have been easily missed and caused unwanted costs, even if they were small amounts.

This site visit was a great success, and we managed to get a lot of things moving forward. These site visits are an effective way of communicating information, aligning everyone on the same page, and obtaining feedback on any telecommunication-related issues. Also, this helps strengthen communication and connections.

Friday 15.3

Yesterday, I received a message from my manager to check an issue with a power automation flow that was not working as intended. The original issue report was done by the users using the SharePoint site. Luckily, in the original information, we had the timestamps, and we could compare the version history of the item in question. After checking the runs on the power automation flow, I found the root cause. There was a section in the flows that was unnecessarily updating a section. I removed these updates from the flow and found this fixed the bug.

I received an email from the third-party software project. They answered my questions at length. During the day, I parsed through the document to check if there were any questions missing or irregularities. The next task is to manually input these details into the system and verify if they meet the requirements.

As I felt again disorganized, I continued the rest of the day organizing my tasks and reviewing near-future events and tasks. I have noticed I should be a bit more active in documenting my to-do lists and updating documentation. Next week, I plan to take some spurts in this category to catch up.

Week 8 analysis

It has been a productive week, with a site visit and server decommissioning as highlights. Otherwise, it was normal. Both the site visit and server decommissioning were valuable experiences. We also managed to get a SharePoint issue that was repaired swiftly.

This week, I had the opportunity to perform server decommissioning. It was a refreshing change of pace and an interesting experience since it was my first time performing this task. Although the process is straightforward, there are many steps involved. I intend to do further research on the topic to gain a better understanding of how the process is done generally and how it is done at DHL.

Some companies follow NIST Special Publication 800-88. This is a guideline document for media sanitization, and in this decommission, we need to sanitize the data from the servers. It is extremely important that the data is handled correctly so it cannot be retrieved afterward (Kissel, R et al. 2014, 5).

An organization can follow the diagram seen in Figure 10 in their decisions regarding the disposal of sensitive data.
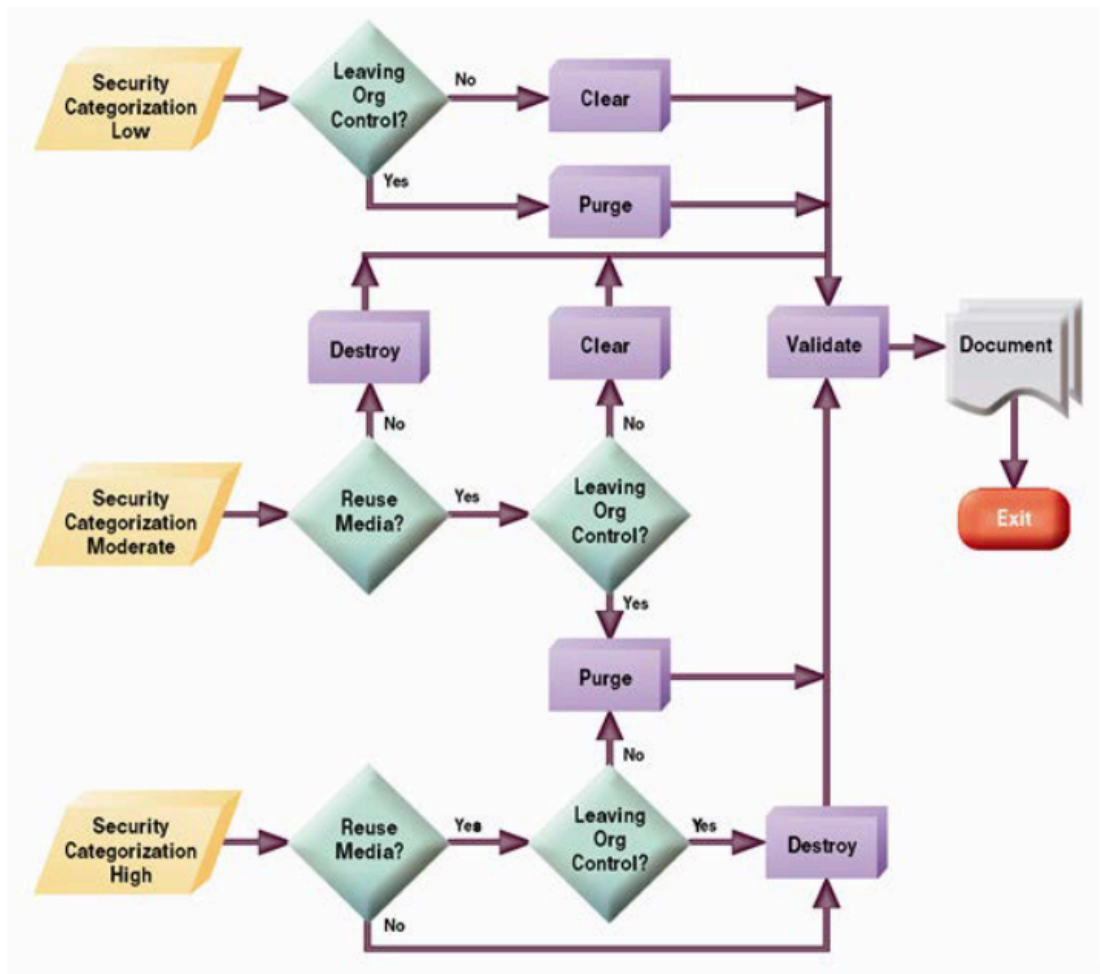
Figure 10 Sanitization and Disposition Decision Flow (Kissel, R et al. 2014, 17)

If a company first needs to categorize the security confidentiality to make these decisions, they can refer to NIST SP 800-60 Revision 1 to make these categorizations (Kissel, R et al. 2014, 2).

You can also read a detailed guide on how to destroy different kinds of media. Such as Apple devices or Solid-state drives (SSDs). These given guidelines give general direction on how to handle the data and what to take into consideration (Kissel, R et al. 2014).

For our decommission task, we can use a document by Kissel, Regenscheid, Scholl, Stine (2014) that explains how to sanitize data when necessary. I am also planning to create a flow chart that outlines the steps involved in the decommissioning of a server at DHL. Moreover, I would like to develop a checklist that we can use in the future to ensure more organized decommissions.

4   Conclusion

My primary objective for this thesis was to gain knowledge about my work and enhance my role as a telecom specialist within the organization. The objective was also to give the client more detailed insight into what the telecom specialist role includes and get a fresh view of all the processes and workflows. Additionally, I had several projects, the main one being a third party software project. The diary consisted of 8 weeks of daily writing about my work. At the end of each week, I summarized the week and, from there, formed a theme that I wrote about.

Each week has been unique in its own way and consisted of routine work, as well as all kinds of different issues and occurrences. Since I was new to my job, there was a lot to learn, including general tasks. This made the weeks intense and challenging at times. I noticed quickly that when writing about my daily work, I became more concise, and this helped me manage the very demanding weeks. Analyzing the weeks gave me a chance to reflect on the said work. This helped me build and understand different aspects of my work from a different angle. Also, finding solutions for issues and observations became much easier when you gave a longer thought to the matter.

For these mentioned reasons, during these weeks, I have immensely improved in my profession. I have had success in my tasks but also failures. These failures, however, made me double down. It prompted me to troubleshoot the issues to find the solutions intensely. I mentioned the importance of experimental learning, and this was clearly apparent in my learning during these weeks. In one of my mistakes, I was able to learn the systems I was working on much quicker than I did in normal circumstances. It is human to make mistakes, and when that happens, take the chance it gives you.

Some of my main findings concerned the information vacuum that occurred after the predecessor of my position left the company. The lack of documentation of the processes, developments, and systems that had been built created a very difficult situation for the new person taking over, who must spend double or even more time researching and understanding everything. This is why proper documentation is crucial for streamlined company operations. This has encouraged me to document as I learn. This will bring value to the company and me in the long run.

I worked on several projects during the weeks. I progressed in all of them fairly well, especially in the third-party software project. However, I identified some of the issues I encountered while working on the said projects. Time management was one of the most challenging issues, especially when I was new and trying to find my footing. One of the contributing factors that made it harder was the incidents and requests that were assigned to me quite consistently. Nevertheless, that is one part of the job, and during the weeks, I was

able to get better at scheduling work on the projects and organizing incoming tasks as well. However, I see that there is still much room for improvement.

Something that needs improvement is communication, especially with one of our main network providers. Bad communication creates extra work and requires a lot of effort from many who already have limited time. We need to continue working on improving communication, as it is an ongoing process both internally and externally. I will also strive to improve my own communication to ensure clarity and ease of understanding. Communication is also connected to many things I have brought up in the document, which makes it a key factor to have on an optimal level to ensure minimal friction.

Feedback from the target company was very positive. They were very pleased with the detailed insight into my daily work and all the observations that were discovered. The value of what was found was very appreciated, and the company plans to use it. We have planned workshops around the literature and ideas that were discussed in this document. With the work produced, we will be able to make the work more efficient and redundant in the long run.

Overall, my thesis has offered concrete and useful findings that the company can integrate. The findings can optimize the documentation and communication for all the stakeholders and take these important skills to the next level. The insights will also give a valuable and better picture for the company and me of the current and future needs. The thesis has also provided me with an opportunity to learn and develop my skills in a unique way and has let me ponder deeply on my current personal skills and a way to improve for the future to excel in my industry.

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Figures