TENTIVE

Sligro Food Group

Reading
Guide

M.G. den Hollander
Student number: 3803554
Fontys Hogescholen
ICT & Software Engineering
Version: 1.3

Version

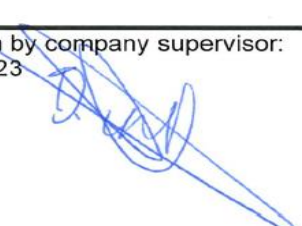| Version	Date	Author	Changes	State
1	24-05-2023	M.G. den Hollander	Created the document and added introduction.	Concept
1.1	29-05-2023	M.G. den Hollander	Added the project context and structure.	Concept
1.2	04-06-2023	M.G. den Hollander	Added the process & results and reflection on the learning outcomes	Concept
1.3	12-06-2023	M.G. den Hollander	Rewritten process & results	Complete

Table of contents

1 Information

Information student

Name	Hollander, Marc M.G. den
Student number	3803554
Email	m.denhollander@student.fontys.nl
Profile	Software
Internship duration	01-02-2023 t/m 07-07-2023

Information company

Name	Sligro
Department	IT
Adress	Corridor 11, 5466 RB Veghel
Name + function company mentor	Eijsden, Dennis van, Application Owner - Back Office Document Management
Email	dvaneijsden@sligro.nl

Information first assessor

Name	Ouwendorp,Geert Jan G.J. van
Email	g.vanouwendorp@fontys.nl

Information second assessor

Name	Bronckers,Leon L.H.J.
Email	leon.bronckers@fontys.nl

Information portfolio

Title	Portfolio Marc den Hollander.zip
Date of issue	June 13th, 2023

Signed for seen by company supervisor:
Date: 13-06-2023

2 Glossary

RPA	Robotic Process automation.
AS400	A computer system developed in the late 1980s for companies to run applications and perform data processing.
Dagaansluiting	Daily process for the financial department of Sligro.
MoSCoW method	Method used to prioritize which requirements are most important.
DOT Framework	Research framework for ICT with research methods.

3 Introduction

This document has been prepared as a reading guide for the internship conducted at Sligro. It describes the nature of the assignment and outlines the activities undertaken during the internship period. Throughout this internship, various documents were created to properly execute the assignment. For this reason, there will be references in this reading guide to different documents within the portfolio. By examining the complete portfolio, it is hoped that the successful execution of all competencies will be demonstrated. Certain terms mentioned in this document may be further explained in the glossary provided above this introduction.

I would like to express my gratitude to Tentive for providing me with the opportunity to connect with Sligro and arrange this internship. Additionally, I extend my thanks to Sligro for providing me with an engaging assignment and the opportunity to intern at their organization.

I would also like to thank my company supervisor, Dennis van Eijsden, for his time and support throughout the internship period. Undoubtedly, I had many questions during the six months, and I greatly appreciate the willingness to provide answers and assistance.

Lastly, I would like to express my appreciation to my mentor from school, Geert Jan van Ouwendorp, for his guidance and feedback throughout the internship.

4 Project assignment

In this chapter, the motive behind the assignment and the specific details of the project are outlined. For more comprehensive information, please refer to the [Project Plan](#).

4.1 The reason for initiating the project

Wholesale Sligro, a client of the consultancy company Tentive, is automating several processes using Robotic Process Automation (RPA). RPA is a technique where scripts and/or applications are executed on a computer or server to perform repetitive manual tasks that employees no longer need to do themselves. It saves employees time, allowing them to focus on other tasks, and ultimately reduces errors by minimizing human input. A robot (or script) follows predefined rules and instructions, minimizing the potential for mistakes.

Sligro has implemented several robots that perform tasks on their AS400 system, which is similar to how SAP works for other companies. However, these robots do not always function optimally. Sometimes, the robots halt during the execution of their process or fail to provide clear error messages when something goes wrong. These inconveniences prompted the opportunity for this project assignment that will be explained in the next section.

4.2 The assignment

The assignment involves assessing whether it is possible to improve the current RPA technique or potentially phase it out by implementing another technique. The focus of the investigation is on a process called "Dagaansluiting," which aims to automate a financial process for Sligro's finance department. To effectively carry out this assignment, the current RPA technique had to be analyzed, and proposals for improvements were developed to achieve the desired situation.

For Sligro, the desired situation is a technique that is simple to use, requires minimal manual work, and consequently saves time and maintenance efforts. This could mean that future research may conclude that it is more advisable to transition to a different technique.

The research questions associated with this assignment are as follows:

- Which techniques are used by the company regarding automation?
- What are the advantages and disadvantages of these used techniques?
- What are the key processes and activities that need to be decomposed and analysed prior to implementing a new RPA technique?
- What steps can be taken to increase the effectiveness of RPA in optimizing the current process and improving efficiency?
- What is the most efficient and sustainable way to use automation within the company?

This will eventually give an answer to the main research question which is:

- How does the implementation of a new robotic process automation technique ensure that automation is available as efficiently as possible?

5 Process & results

This chapter provides further insights into the process of this project, including how it unfolded and the resulting outcomes. Additionally, it reflects on the project, highlighting specific challenges encountered and the lessons learned from them.

The entire graduation internship was a learning process for me, where I was encouraged to conduct extensive research and experimentation on my own. Ultimately, this approach yielded positive results, including the final products and my personal development.

5.1 How did it go compared to the original plan and set goals?

During the graduation internship, it was important to assess the progress made in relation to the original plan and the goals that were set at the beginning. Overall, the project's implementation aligned closely with the initial Project Plan and its objectives. However, there were certain deviations and adjustments made along the way to accommodate unforeseen challenges and new insights.

In terms of the original plan, the project followed a systematic approach, starting with requirement gathering and analysis, followed by research and the development of a prototype. The testing, on the other hand, turned out to be less applicable to the project afterwards.

Regarding the set goals, the project aimed to create an efficient and reliable alternative automation solution. The developed C# application successfully demonstrated its capability to automate the targeted process, delivering the expected results. The application proved to be flexible and adaptable to the requirements of the company, aligning with the goal of providing a future-friendly, low maintenance solution for the company.

While the project generally progressed as intended, it is important to acknowledge that certain factors influenced the final outcome. These factors included limitations in resources and time, unexpected technical challenges, and external dependencies.

Some of these limitations were:

- The VPN required to access Sligro's environment did not work with the home network. A workaround for this was using a mobile hotspot when testing the connection at home.
- Visual Studio was not installed by default, and obtaining permission to download apps could take a long time. This issue was resolved by using a non-Sligro-owned laptop.
- A research method involving a system test proved to be impossible due to the lack of a suitable testing environment. Advice is provided to ensure that this opportunity is not lost.
- Remote commands to the AS400 could not be executed by the alternative RPA solution.

However, through effective problem-solving and adaptation, these obstacles were overcome, and the project successfully achieved its intended objectives.

In summary, the project's overall performance closely aligned with the original plan and set goals. Although there were minor adjustments and challenges encountered along the way, the end result met the expectations and provided valuable insights for the duration of the internship.

5.2   Explanation of the results

The results obtained during the graduation internship period were significant and aligned with the project objectives. The ideal outcome for Sligro is an RPA technique that does not require much manual work, and therefore also saves time and maintenance.

An investigation was conducted to assess whether the current RPA technique could be improved or if transitioning to a different approach would be more beneficial. To achieve this, research questions were formulated to determine the company's current techniques, their advantages and disadvantages, the specific process being automated using this technology, how RPA could be enhanced within the company, and the most efficient and sustainable way to achieve this.

The findings of this research ultimately led to the development of a prototype for Sligro, implementing an alternative RPA approach. This prototype created as an C# Console Application serves as a practical demonstration of the proposed solution and provides insights into its suitability and benefits. This solution proved to be effective in automating the targeted process and showcased its potential to streamline operations and enhance efficiency.

The application demonstrated its capability to handle the desired tasks with accuracy and reliability. Through research and coding, the application consistently produced the expected results, reducing manual effort and minimizing the risk of errors. The fact that automation is also possible in this alternative way, gives Sligro the opportunity to choose which technique suits them the best.

Additionally, the application showcased its flexibility and adaptability. It was designed to accommodate changing requirements, making it a future-friendly solution for the company. The use of C# as the programming language provided a solid foundation for further enhancements and modifications as needed. The application's scalability allows for the potential automation of other processes in the future, further maximizing the benefits for the organization.

Overall, the results obtained from the internship demonstrated the achievability and effectiveness of the alternative C# automation solution. The solution successfully addressed the identified challenges, delivering tangible benefits such as increased efficiency, reduced errors, and time savings. The positive outcomes validate the efforts invested in the project and highlight the potential for further automation initiatives within the organization.

5.3 Reflection on personal development goals

Personal development is something I highly value during an internship. What I found particularly important was the opportunity to work for a company within this field. School provides a different environment, and I found it extremely valuable to experience how to apply all the knowledge I had acquired in previous semesters in a real-world business setting.

Prior to the internship, personal development goals were established in the Project Proposal. These goals were areas in which I aimed to improve during the course of the internship. They included enhancing my communication skills, improving my time management abilities, and boosting my presentation skills.

Throughout the internship, I actively focused on these goals and sought opportunities to develop and enhance these skills. By working closely with the IT team, engaging in effective communication channels, and participating in team discussions, I aimed to strengthen my ability to communicate effectively in a professional setting. I also dedicated effort to improve my time management skills by setting clear priorities and establishing schedules. At first I worked with a daily planning, but eventually a global planning was used. I found that to be more effective, because daily planning took up more time and it was quite often deviated from. As seen in Figure 1, I split every sprint up into the research question together with the deliverables and methods used to answer the research question.
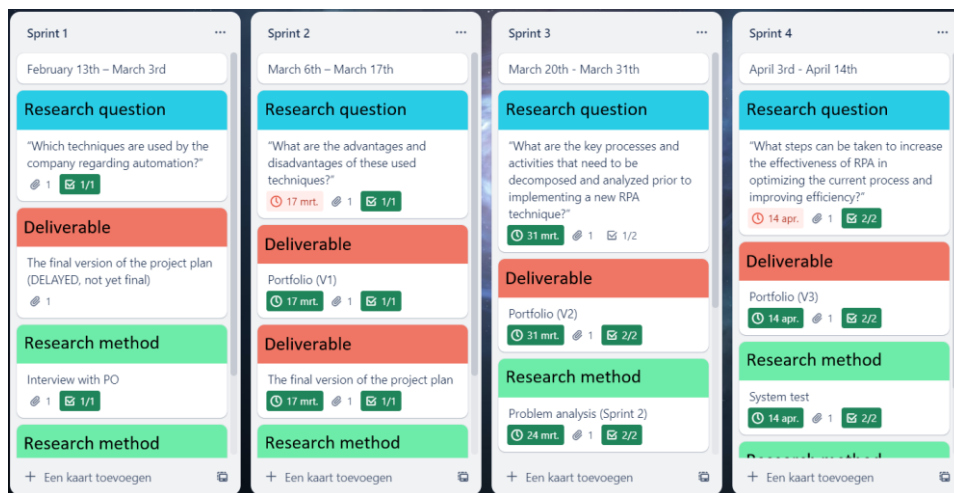

Figure 1 Trello planning

Furthermore, I took advantage of any opportunities to present my work, whether it was in team meetings, project reviews, or presentations to stakeholders. These experiences allowed me to overcome challenges such as nervousness and effectively communicate my ideas and findings to diverse audiences. This has been instrumental in enhancing my ability to deliver presentations and effectively engage with stakeholders.

Overall, the graduation internship provided an excellent opportunity for personal development. By setting specific goals and actively seeking opportunities to present and receive feedback, I was able to make significant progress in this area and further develop my professional capabilities.

6 Structure of the portfolio
This chapter explains the structure of the portfolio, clearly indicating the specific locations where the different components can be found.

The portfolio is organized into various folders, each containing its own set of documents and any additional materials related to the topic of the folder. All topics can be found below:

6.1 Analysis
Graduation Proposal
The Graduation Proposal is a document prepared prior to the internship to obtain approval from the school to proceed with the internship in the following semester. It outlines the proposal for the initial assignment, research questions, and personal development goals.

Project Plan
During the first phase of the internship, a Project Plan is developed to provide a more detailed description of the assignment, establish a strategy, and formulate research questions. It also includes information about the organization, the original test approach, and risks involved.

Analysis Document
Once the foundation of the Project Plan is established and research is started, an Analysis Document is created to document the company's requirements. These requirements are then translated into specific project requirements, and together with the company, they are prioritized using the MoSCoW method. This prioritization technique helps to assign priority to the most important requirements. Lastly, use cases are developed based on these requirements.

6.2 Research
During the graduation internship, thorough research was conducted, which is documented in the Research Document. This document contains all the research questions mentioned in the chapter about the assignment. The DOT Framework was utilized to address the research questions in a professional manner, ensuring a systematic approach to answering them.

6.3 Design
During the design phase of this project, various diagrams were created to illustrate the overall structure of the project and its components. These diagrams can be found in the "Diagrams" folder, providing a clear visual representation. For detailed explanations of the diagrams, please refer to the Design Document.

6.4 Implementation
In this section, the Implementation Document provides a detailed account of the implementation process. It outlines the various steps involved in the implementation, identifies any challenges or complications encountered along the way, and presents the achieved outcomes of the implementation.

6.5   Advice

An [Advice Document](#) has been prepared for the company, addressing both functional and technical improvements. This report provides a step-by-step recommendation outlining the proposed actions, their potential benefits, the expected timeframe for implementation, the required resources, and any associated advantages or disadvantages. The advice aims to guide the company in making informed decisions regarding enhancements, considering the potential impact on processes, efficiency, and overall performance.

6.6   Other

Midterm review

This folder contains the reflections of both the student and the company mentor on the learning outcomes halfway through the semester. It provides an assessment of the progress made in achieving the specified learning outcomes and offers insights into the individual development and growth experienced by the student during this period. Next to this, the company mentor's perspective is shared, highlighting the student's performance and the alignment with the desired learning outcomes.

Retrospectives

This folder contains all the retrospectives conducted until the deadline for submitting the documentation. These retrospectives were based on a set of questions that needed to be addressed:

- What went well?
- What could be better?
- What went badly?
- Focus for the next period

Logbook

This final [document](#) is a logbook covering the entire period of the internship. It consists of weekly updates detailing the activities and progress made during each week. The purpose of this logbook is to provide a chronological record of the internship experience.

7 Reflection on learning outcomes

This final chapter is a reflection on the learning outcomes set by Fontys. Through these learning outcomes and the final products, it is demonstrated that this internship has been successfully completed.

7.1 Professional Duties

Based on the midterm review and the progress I have made since then, I am proud to say that I have significantly improved in carrying out my professional duties on a bachelor level. The feedback from my company mentor, recognizing my proactive approach and initial results in exploring alternative methods for robotic process automation, has motivated me to further improve in this area.

Throughout the entire internship, I have focused on developing the final products, ensuring that they meet the professional standards expected of me. I have dedicated time and effort to various activities including analysis, design, realization and advice.

The portfolio I have been working on includes an analysis document, extensive research findings, designs, the implemented solution and an advice document. By incorporating these elements, I aim to showcase my proficiency in delivering professional products.

As I approach the end of my internship, I am grateful for the opportunities I have had to grow and develop my professional skills. The challenges I have encountered and overcome have shaped me into a more competent and capable individual.

Overall, I am pleased with the growth I have achieved in carrying out my professional duties. I have become more proficient in producing professional products that align with this project.

7.2 Situation-Orientation

Since the midterm review, I have actively utilized the knowledge and expertise I gained and effectively applied it to the current project. I have adapted to the processes and way of working at Sligro, maximizing the opportunities presented to me within the company's framework. By paying close attention to the protocols and standards set by Sligro, I have ensured that my work aligns with the established guidelines and practices.

Furthermore, I have approached my tasks in a structured manner, leveraging research methods to drive my work forward. This approach has allowed me to navigate the context of the project, which involves multiple stakeholders and combines various IT areas. By doing so, I have been able to deliver relevant and valuable results that address the needs of both the IT and Finance departments at Sligro.

Overall, I am proud of the growth I have achieved in applying my previously acquired knowledge and skills to a new and authentic context. My ability to adapt to the specific requirements and protocols of Sligro while delivering relevant and valuable outcomes has been instrumental in advancing this learning outcome.

7.3   Future-Oriented Organisation

I have successfully applied my previous knowledge and skills in a new and authentic context, delivering valuable results for the company. From the beginning of the internship, I adapted to the company's processes and way of working, using my expertise gained from previous experiences.

I created a comprehensive project plan which contains all of the context that was needed to kick off this project, and monitored the progress using a planning. I maintained a focus on delivering high-quality solutions that are of value to the company. Next to that, using the business case exploration helped with considering the business aspects of implementing an alternative RPA technology.

By applying my previous knowledge and skills, considering relevant factors, and managing the project effectively, I delivered professional products aligned with the expectations. This experience has enhanced my understanding of organizational contexts and project management, preparing me for future projects.

7.4   Investigative Problem Solving

Over the course of the semester, I have continuously improved in my ability to critically analyze the project from various perspectives, identify problems, and develop effective approaches to achieve appropriate solutions.

From the early stages of the internship, I demonstrated a strong drive and determination to find possible solutions for the different components of the robot through alternative tooling. I actively asked relevant questions, determined the appropriate strategies, and effectively utilized my research document to guide my investigative process.

Throughout the project, I consistently adopted a structured approach, employing a variety of research methods, and activities outlined in the DOT framework. By doing so, I was able to find answers to the research questions at hand.

Furthermore, I leveraged the insights gained from my research to create valuable solutions, ensuring their alignment with the needs and expectations of the company. I actively validated these solutions, seeking feedback and incorporating necessary adjustments to enhance their effectiveness.

Overall, I believe to have achieved this learning outcome successfully. Through continuous investigation, critical thinking, and effective problem-solving strategies, I have contributed to the project's progress and outcomes.

7.5   Personal Leadership

Throughout the internship, I have actively improved my personal leadership skills, demonstrating that I have taken the lead in my project and a commitment to my own growth as an IT professional. I have effectively managed my time and tasks, ensuring a well-organized and proactive approach.

I have actively sought feedback and reflected on my actions, using it as an opportunity for growth and development. This has allowed me to continually refine my skills and knowledge, staying aligned with the expectations of the company.

During the internship, I focused on specific personal development goals, such as improving time management, communication, and presentation skills. I have made notable progress in time management and communication, effectively planning my project and communication with stakeholders. While I recognize the need for further growth in presenting, I am confident in my ability to continue developing this skill beyond the internship.

I am proud of the improvements I have made in personal leadership. By embracing an entrepreneurial mindset, prioritizing my learning ability, and having a clear vision of my professional aspirations, I have set a strong foundation for my future career. I am excited to apply these leadership skills and continue my growth as an IT professional.

7.6   Targeted Interaction

Throughout my internship, I have improved in targeted interaction, which involves effectively engaging with stakeholders to achieve the projects goals. I have taken steps to enhance my communication and collaboration skills, resulting in meaningful interactions with key partners.

Based on the feedback received during the midterm review, I focused on strengthening my stakeholder management. Specifically, I ensured regular progress updates to the Backoffice team, so that I maintained a productive relationship with them. By proactively providing relevant information, I established clear and impactful communication channels.

Additionally, I actively identified and considered the interests of all stakeholders involved in the project. This allowed me to tailor my communication and actions to meet their expectations, resulting in better outcomes. Collaboration played a vital role in this process, as I sought out colleagues with relevant expertise to maximize knowledge-sharing and problem-solving.

Overall, by effectively engaging with stakeholders, communicating appropriately, and collaborating constructively, I have made significant contributions to the project's success. These skills will undoubtedly benefit me as I continue to grow as an IT professional.