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Enhancing Business Processes through Dynamics Solutions with Microsoft Power Platform

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Abstract

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The value of Microsoft Power Platform has received a lot of attention as a result of the shifting corporate landscape. Different tools can give organizations access to quick and efficient processes, which may have an impact on the organization's ability to survive in the marketplace. Microsoft Power Platform is a robust platform that uses low-code programming language for expressing logic [1]. It meets many challenges in the IT trends of 2022, such as Computing Power, Digitalization, and Artificial Intelligence [2].

The primary aim of this thesis is to improve the business process for a manufacturing company through the implementation of dynamic solutions. Another aim of the study is to provide readers with a comprehensive understanding of the Power platform and its capabilities. The inspiration for the project came from Tietoevry Oyj, a reputable Finnish IT company. To illustrate the various functions of the Power Platform in a more logical and accessible manner, the manufacturing company used as an example is fictional with unique needs and challenges that will be addressed through the implementation of dynamic solutions.

This study is divided into two main sections. The first section discusses the fundamentals of four essential Microsoft Power platform products in order to give the readers a thorough understanding of Power platform. The second section of this study goes into case company and implementation of Power Platform by outlining the processes required to construct this solution and analysing the differences before and after. For the result solution, there will be a summary and prospect of Power platform.

Keywords: Power Platform, Low-code, automation

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List of Abbreviations

Low code: Used to describe software robotics applications that can be created "automatically" without a lot of coding or special programming knowledge.

WYSIWYG: "what you see is what you get".

SaaS: Operating model of applications operating over the network, where the application is not installed or maintained by itself but is delivered by a 3rd party via the Internet.

BI: Business intelligence

Leads: A potential customer who is interested in what your business offers.

Json: JSON (JavaScript Object Notation) is a lightweight data-interchange format. It is easy for machines to parse and generate.

CRM: The concept of managing customer relationships.

XML: Extensible Markup Language (XML) is a markup language and file format for storing, transmitting, and reconstructing arbitrary data.

1 Introduction

Information technology is rapidly transforming our society, international trade is becoming more integrated, and economic globalization is an obvious tendency. The fragmentation and proliferation of information is the current trend. Streamlining business processes is becoming more important to increase productivity and work efficiency in the company's everyday operations. In this period, business intelligence has become a necessity. Because of this, the Microsoft Power platform is crucial.

A Gartner survey data shows that in the process of digital transformation, Enterprises need many more personalized enterprise-level application scenarios, such as contracts and official signatures. To meet the needs of all business scenarios, over millions new applications need to be developed. The demand for projects that take several years to complete grows exponentially over the years. This means that nearly 90% of enterprises are facing new application development challenges [3]. Business people are the ones who know their own business best. If they can design software that suits their own business, which will minimize the consumption of transmission between business and development, it will be the most efficient solution. Using low-code development platforms and tools has become a predictable trend.

This thesis contains four main chapters: After the introduction provided in the current chapter. In Chapter 2, various products of Microsoft Power Platform will be comprehensively introduced to facilitate readers to have a better understanding of the following content. Chapter 3 introduces the background of the case company and my solution using the Power Platform. Chapter 4 is the summarization for the entire study.

2 Microsoft Power platform

Power platform is a cloud-based platform developed by Microsoft that contains several specific products to provide individuals and customers with powerful support. Power platform mainly focuses on the core value of enterprise—data and business processes, and the platform is intended to be low-code or no-code, which means that users can create custom business solutions, automate workflows, and data reports without significant programming knowledge. The structure of Microsoft Power platform is depicted in Figure 1.

Figure 1. Main products of Power platform.

There are four main products of the Power Platform: Power Apps, Power Automate, Power BI, and Power Virtual Agents. Power Apps is a tool for building custom applications, Power Automate allows for the automation of business processes, Power BI provides data visualization and analytics, and Power Virtual Agents lets users create intelligent chatbots to help with customer service.[4]

In the process of using the Power platform crossing products, data will always be used. However, the amount of data is huge, and the storage methods and types can be different. Therefore, to better understand its potential, some other components (shown in Figure 2) are worth a brief introduction.

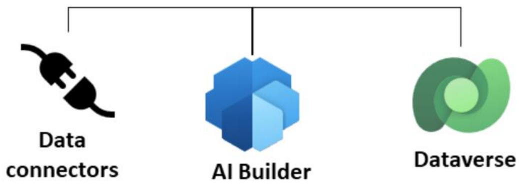

Figure 2. Data related components.

- Data Connectors

  Connectors facilitate the access of APIs to connect apps, data, and devices without intense technical knowledge. There are more than 600 connectors from Microsoft and other third-party services that can be used in the Power platform. Custom connectors are also available if needed APIs are not covered yet.

- AI Builder

  AI Builder provides AI capabilities to the workflows and Power Apps. It allows adding intelligence as part of a solution and even predict outcomes to help improve business performance without writing code. Using either pre-build AI model or training the new model based on the needs are both supported in AI Builder.

- Dataverse

  Dataverse is a SaaS data service for sharing, saving, referencing, exploring, and analysing research data. It provides services and distribution rights for data creators, and the aim is to facilitate data sharing and make collaboration easier across different products.

  It is divided into three layers. A Dataverse repository can host multiple virtual files called Dataverse. Each Dataverse contains multiple datasets, each dataset contains descriptive metadata and data files (including documents and code), Dataverse may also contain other Dataverse.

In my thesis, I will mainly use Customer Engagement App (Power App), Power Automate, and Power BI to accomplish the requirements of the case company.

2.1 Power Apps and CE Apps

Power Apps is a platform that enables users to build customized business applications without requiring in-depth coding knowledge. Power Apps provides prebuilt templates, drag-and-drop simplicity, and quick deployment options for building and launching apps. The platform can connect to multiple data sources with pre-built connectors such as SQL Server, Dynamics 365, and even Excel. The Homepage of Power App shown in Figure 3. There are three different types of applications that can be built by Power App: Canvas app, Model-driven app, and Portal website. [5]

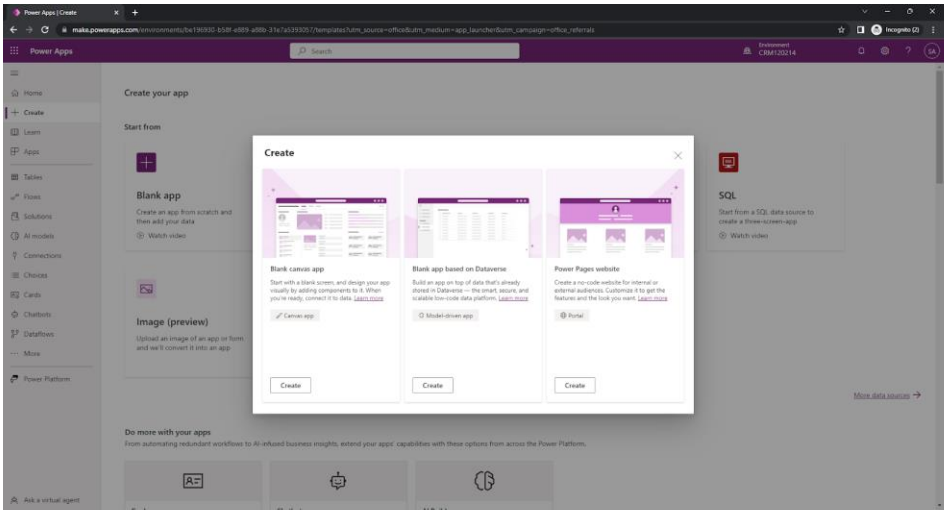

Figure 3. Power App Homepage.

Canvas apps are Power Apps that are built using a drag-and-drop interface, allowing users to create custom user interfaces and connect to various data sources. Users may create app displays using a WYSIWYG editor, add custom functionality using formula and logic, and connect to data sources using pre-built connectors with Canvas apps. Data entry, process automation, and data visualization are just a few of the many business situations that canvas apps can be used for. Also, Canvas apps can be completely tailored to specific needs from the user.

Model-driven apps (formerly known as data-driven apps) are Power Apps that are built using the data model from Dataverse, which is a cloud-based data storage and management service. Based on the data model type, it provides a consistent and structured user interface. Model-driven apps are widely used in more complex business processes including customer relationship management (CRM), field service management, and project management.

As previously noted, Microsoft Dynamics 365 Customer Engagement (CE), formerly known as Customer Relationship Management (CRM) is built by model-driven app. It is made to assist businesses in managing customer interactions and enhancing customer engagement. To create better customer experiences, CE apps can centralize consumer information, offer insight, and optimize corporate processes (sales, marketing, and customer service processes).

Portal website is designed to provide external users with access to business data and processes. Portals are typically used for scenarios such as customer self-service, partner collaboration, and employee self-service. Portals provide a web-based interface that can be customized using the Power Apps portal designer and can be connected to various data sources using pre-built connectors. Portals can also be integrated with other Microsoft services such as Dynamics 365 and Power Automate.

In summary, Power Apps is a platform for building custom applications, including CE apps, which are applications designed to manage customer interactions and improve customer engagement. CE apps can be built on the Power Platform using Power Apps, which provides a range of tools and features for building custom business applications quickly and easily.

2.2 Power Automate

Power Automate is a cloud-based service provided by Microsoft that allows users to create automated workflows between different apps and services. Users of Power Automate can automate repetitive procedures and lower manual errors to streamline their business processes. Many events, including receiving an email, changing a data source, or adding a new record to a database, can be a trigger to start the flow, as shown in Figure 4. [6]

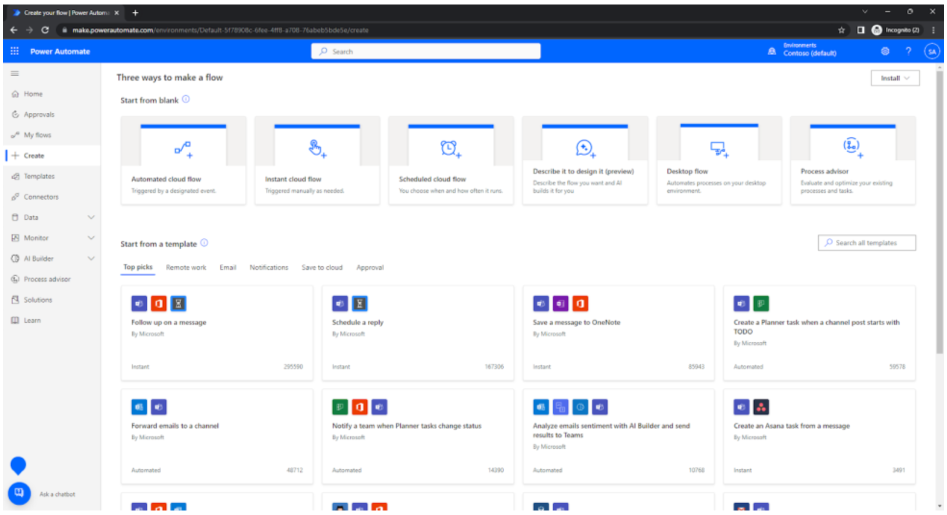

Figure 4. Power Automate homepage.

Power Automate provides a visual interface where users can create workflows by dragging and dropping actions and conditions. As Figure 4 provides, it also offers a library of pre-built templates for common workflows, such as follow up on a message, notifications, and forward email to a channel. Users can also create custom workflows to meet specific business needs. Power Automate is a powerful tool to automate and streamline workflows, save time, and increase productivity.

2.3 Power BI

Power BI is a cloud-based business analytics service that enables users to build rich visual analytic reports and empowers them to find meaningful insights to make better decisions. Power BI combines numerous data sources and applies automatic machine learning to anticipate data models. Moreover, it makes use of AI to create data visualizations and decomposition trees to identify the underlying causes of issues. The Power BI homepage is shown in Figure 5.

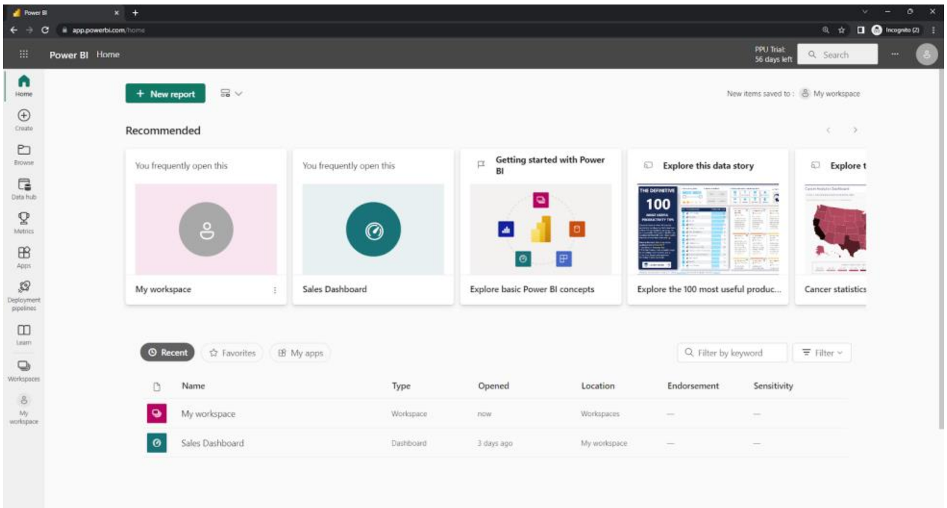

Figure 5. Power BI Homepage.

With Power BI, Users can use a drag-and-drop interface (chart, slice, table) to create interactive reports and dashboards and adjust the appearance of their visualizations. Reports and dashboards can be distributed internally or made available to the public for external use. Users can learn more from their dataset and discover trends and patterns that might not be visible through straightforward representations. A variety of sophisticated analytics features, including machine learning, predictive modelling, and natural language processing, are also available in Power BI. [7]

Overall, Power BI is a powerful tool for businesses that want to analyze and visualize their data. It enables users to gain insights into their business data and make informed decisions based on those insights.

2.4 Power Virtual Agent

Power Virtual Agents is a cloud-based service provided by Microsoft that allows individuals and businesses to easily create and deploy custom chatbots and conversational AI solutions.[8]

With Power Virtual Agents, users can create chatbots that can interact with customers, answer common questions, and perform routine tasks. Power Virtual Agents provides an easy and cost-effective way for businesses to leverage chatbot technology and improve their customer engagement and support.

3 Project implementation

In this chapter, a case company background will be introduced first. Then based on their current needs and the theoretical knowledge introduced in the previous chapter, there will be three detailed solutions built on the Power platform. The project implementation ends in a summary.

I would like to clarify that the background of company NNN is fictional, the initial use cases are based on my work experience in several different projects. The purpose of the fictional background is to provide a framework for exploring and analysing these use cases in a comprehensive manner. Additionally, sample data will be used in the following process.

3.1 Background

Company NNN is a manufacturing company that produces electronic products, including smartphones and tablets. The logo of the company is illustrated in Figure 6 below.

Figure 6. Logo of Company NNN.

The company has been in business for over a decade and has established a strong reputation for producing innovative products that meet the needs of their customers. As a mid-sized company, NNN employs a sales team that is responsible for identifying and engaging potential customers, delivering product presentations, and closing sales.

Currently, NNN's sales team is using a traditional sales process, which involves manually tracking leads and customer interactions, generating proposal files in person, and following up with potential customers by phone or email. While this approach has been effective in the past, the company's leadership team recognizes that it is becoming increasingly difficult to keep up with the volume of leads and interactions, and they are concerned that they may be missing opportunities to convert potential customers into sales.

To address these concerns, NNN's leadership team has decided to use Microsoft's Power platform. To track their sales process easily, manage leads more efficiently, and provide better visibility of data, Sales (CE app), Power Automate, and Power BI will be implemented and introduced in the following subchapters.

3.2 Dynamics Sales demonstration

This section will first explain the process of configuring the Dynamics Sales environment for Company NNN. Then detailed demonstrations of each sales step will be provided within the Dynamics Sales environment. Figure 7 illustrates a standard Sales Process include qualifying a lead, developing the opportunity, proposing the quote, closing the opportunity, and fulfilling the order.

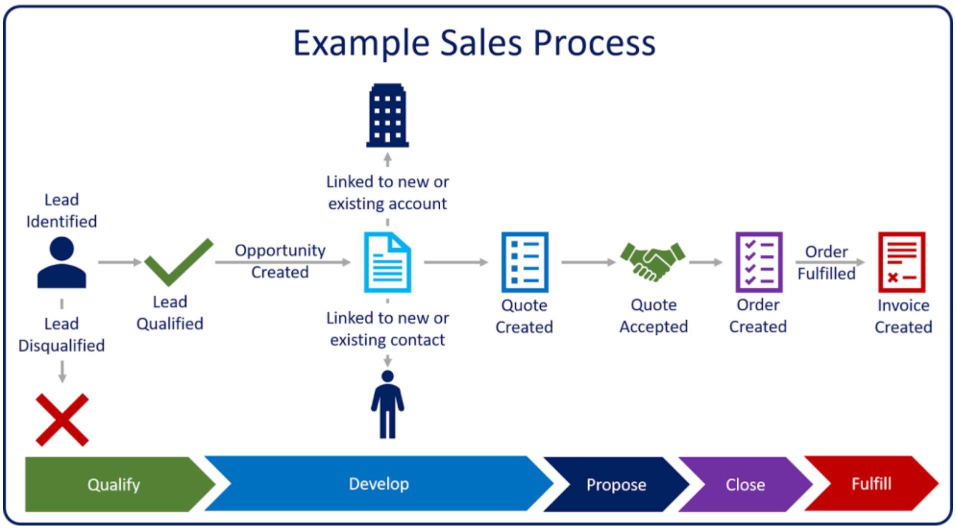

Figure 7. Example Sales Process

3.2.1 Dynamics Sales environment set up

It is important to note that Dynamics 365 Sales runs on Microsoft Dataverse and uses Power Apps model-driven app design. So that the user interface is highly customizable (include but not limited to entities, fields, forms, and views). Businesses can always customize the standard sales process based on their own needs.

To configure Dynamics Sales for Company NNN, there are several steps needed, planning the strategy, choosing the appropriate subscription plan, installing Sales Hub, configuration, data migration, integration, and so on. The detailed configuration process can be found in reference Welcome to Dynamics 365 Sales [9].

After the installation and login as system administrator successfully, the environment details from the Power Platform admin center are shown in Figure 8 as below (https://admin.powerplatform.microsoft.com/). Figure 9 shows the current interface of Dynamics Sales Hub.

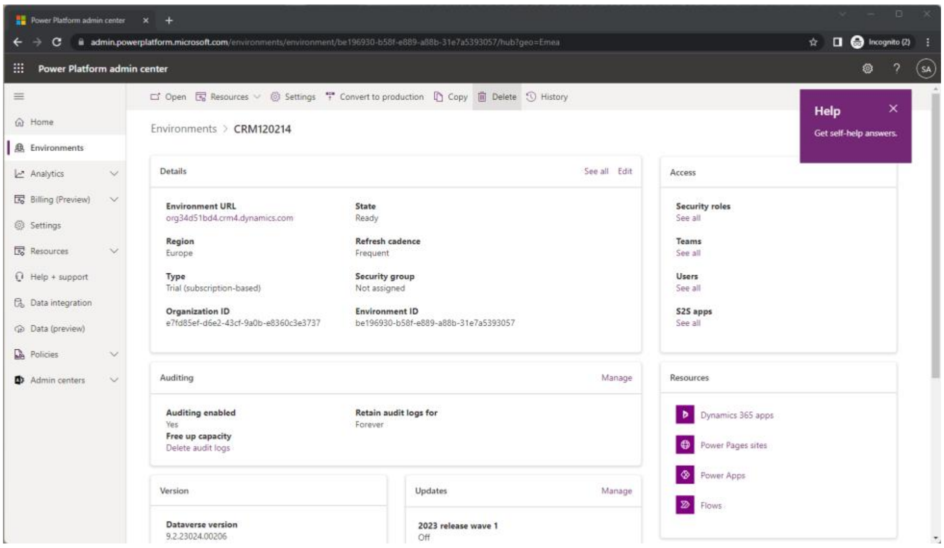

Figure 8. Environment details.

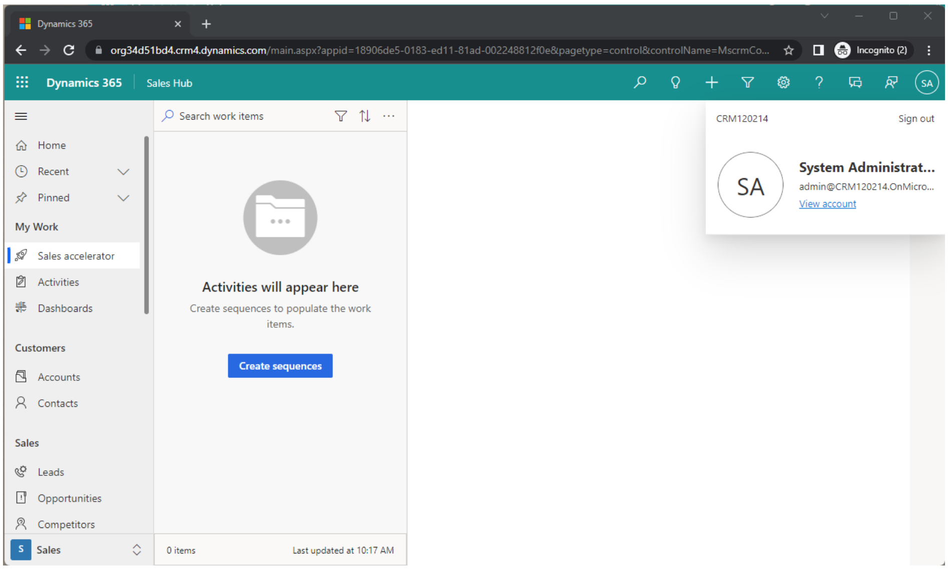

Figure 9. Interface of Dynamics Sales Hub.

3.2.2 Quality

The first stage of the Dynamics Sales process is Qualify. In this stage the Leads are identified and evaluated to determine their potential to become customers or competitors.

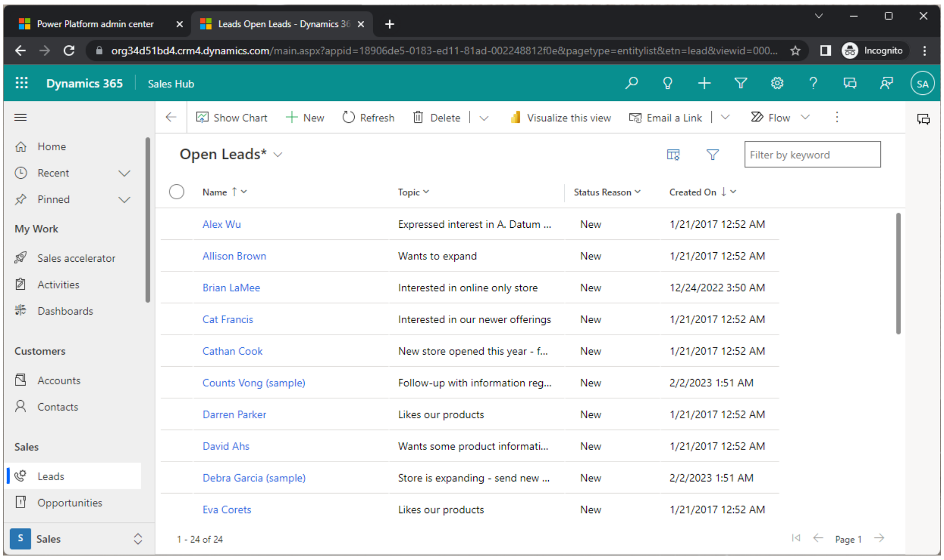

Figure 10. List of open leads.

Manual entry, web forms, Email integration, and even LinkedIn integration are all possible ways to obtain leads. On the left side of the Sales Hub page, select “Leads” under “Sales”. A list of open leads appears as shown in Figure 10. Then to continue the Qualify process, we can either double click the name of Lead, or create a new lead by selecting “New” from the upper bar.

When a lead is generated, sales team should start connecting them and filling in the basic information at the same time to determine whether the lead is a good fit for products of company NNN. Clicking “Qualify” to accept as a qualified lead depicted in Figure 11. Otherwise just delete the record.

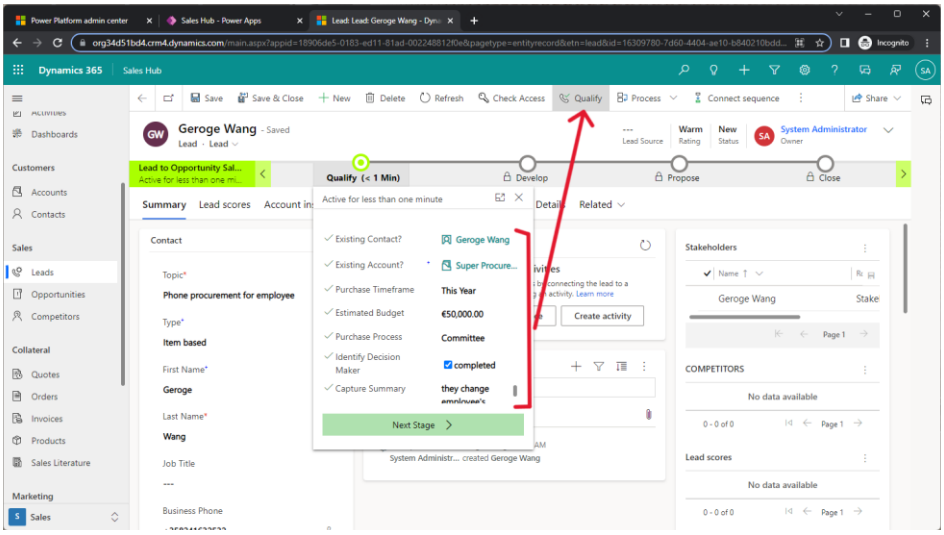

Figure 11. Sales process qualify a lead.

3.2.3 Develop

After qualifying the lead, the next stage is Develop. In this stage sales teams will work to build relationships with qualified leads, track all interactions, understand specific needs and requirements of customers, and identify pain points. Then convert them into qualified opportunities.

First, the opportunity needs to be assigned to a suitable salesperson. The process is shown in Figure 12.

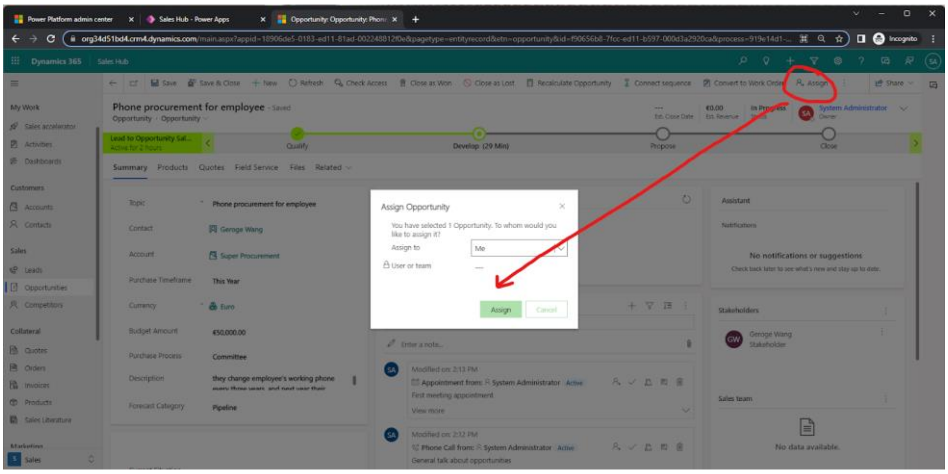

Figure 12. Assign the opportunity.

Then determine the sales process, as for the company NNN, this process involves providing demonstrations and sample products (Nphone and Npad), finding out customer needs, and working to address any concerns or objections that potential customers may have. The opportunity record page can be found from my open opportunities tab located on the left side of the Sales Hub page “Opportunities” under “Sales”.

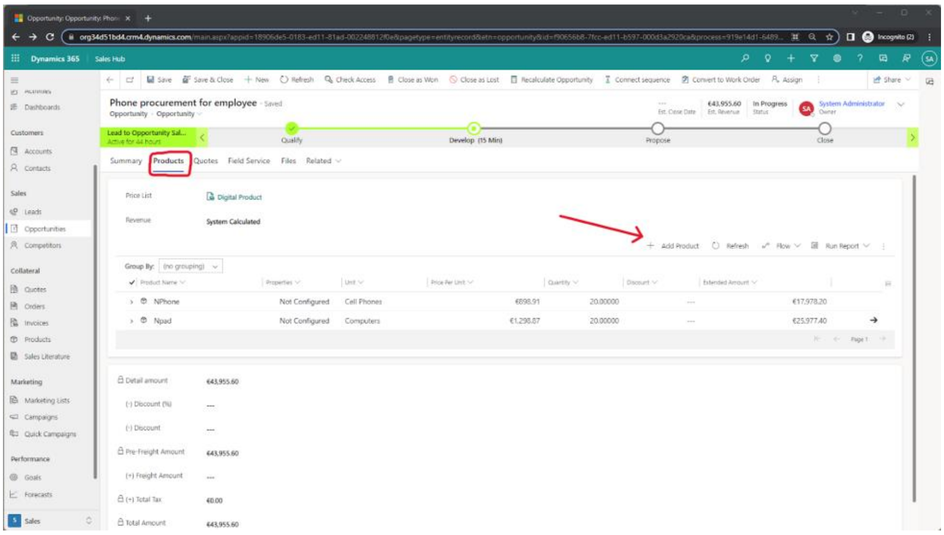

Figure 13. Add products into opportunities.

The sales team should start identifying needs and adding products to related opportunities while they are building the relationships with customer, the process interface is shown as Figure 13 above. In the “Add Product” dialog box, choose “existing product”, search the product from the price list, and enter the quantity. Another way of adding a product is manually entering product name, price, and quantity. Products can be added to an opportunity at any time during its lifecycle.

To build stronger relationships with potential customers, schedule emails, phone calls, meetings, and follow-up tasks are always needed. The Timeline section will assist to track all intersections during the Develop process.

The sales team ought to have a good understanding of the needs from customers, price range of potential products, and sales process timetable at this point. Also, they should be aware of possible pain points and be ready to address them. Once the sales team have gathered all the necessary information and have a well-crafted proposal, then move forward to the next stage as qualified opportunities, shown in Figure 14 below.

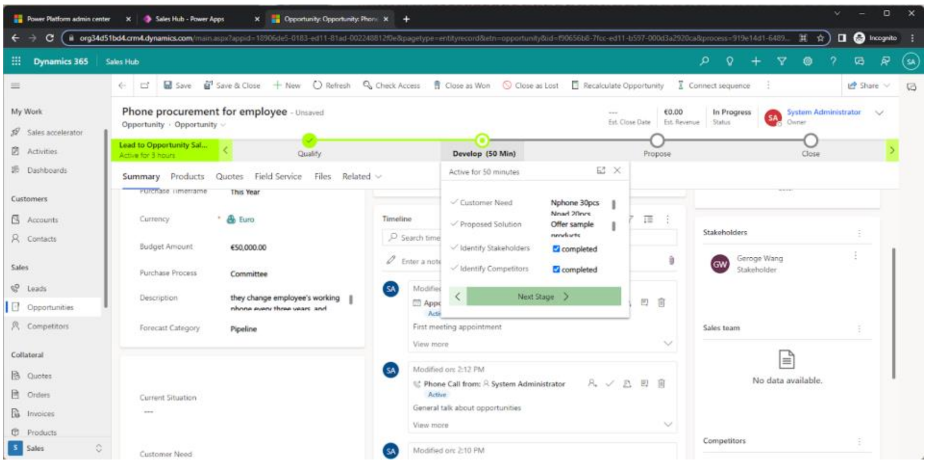

Figure 14. Sales process update the Opportunity.

3.2.4 Propose

Once a lead has been developed into a qualified opportunity, the next stage is Propose. During this stage, sales teams will typically create a formal proposal that outlines the products or services being offered, as well as provide pricing and contract details.

As the business process flow shows the opportunity is currently in the Propose stage in Sales Hub. There are several tasks shown in Figure 15 that need to follow: Identify Sales Team, Develop Proposal, Complete Internal Review, and Present Proposal.

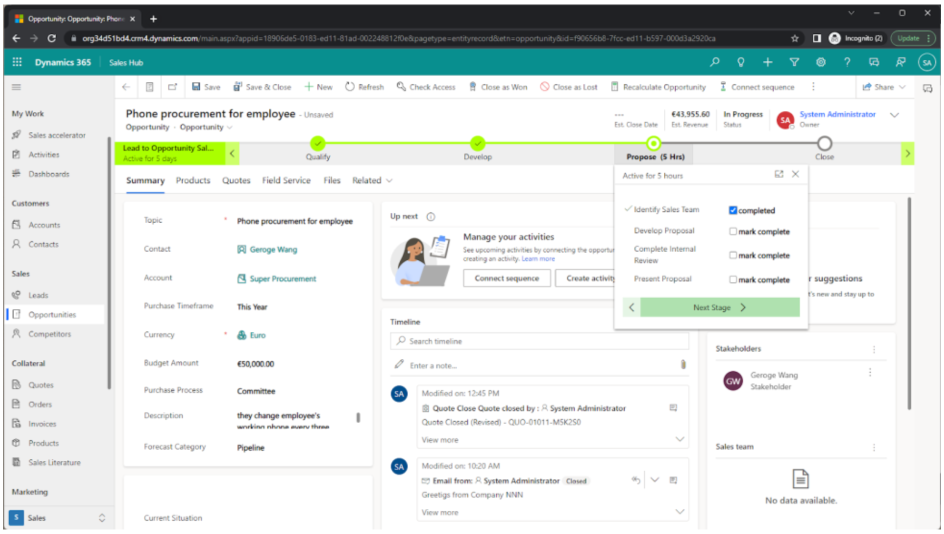

Figure 15. Propose stage in Sales process.

To create a quote, start by switching to tab “Quotes” and click “New Quote” as Figure 16 shows. Then in the interface shown in Figure 17, enter necessary details, provide products, estimated costs, and possible discounts. The data of products are usually inherited from the previous stage, but modifications are always allowed.

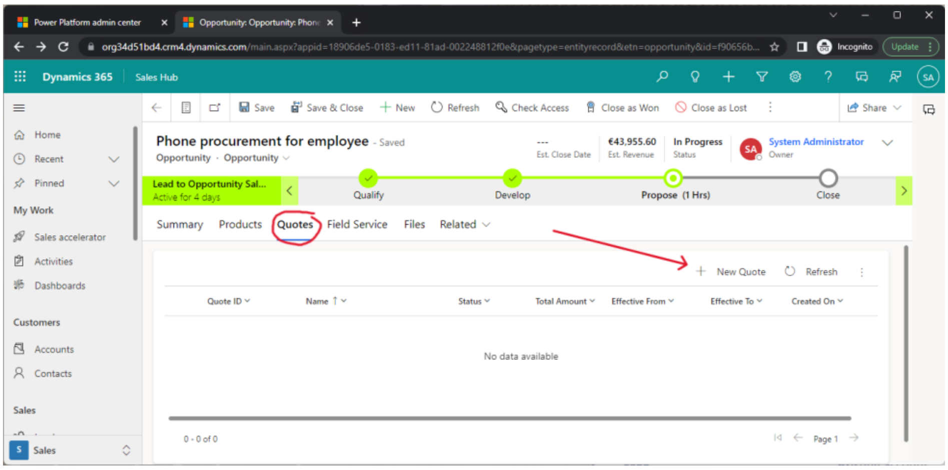

Figure 16. Create quote in Propose stage.

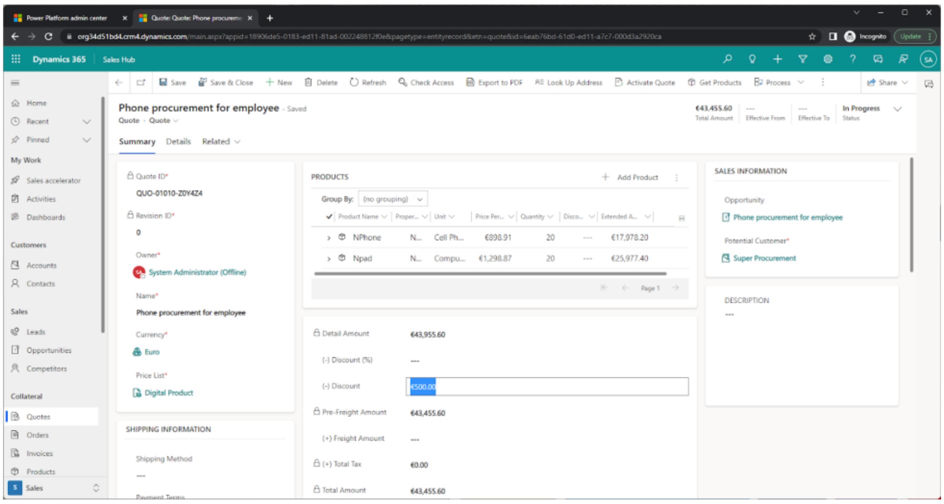

Figure 17. Quote modification.

After reviewing and finalizing the quote, click “Activate Quote” to convert it into a proposal, meanwhile the PDF file can be exported, and sent to the customer. Exporting process shown in Figure 18 below, click the “Export to PDF” button on the command bar, and select the suitable template. Document Templates can be fully customized, instruction can be found in reference: Create and manage Word templates in Dynamics 365 Sale [10].

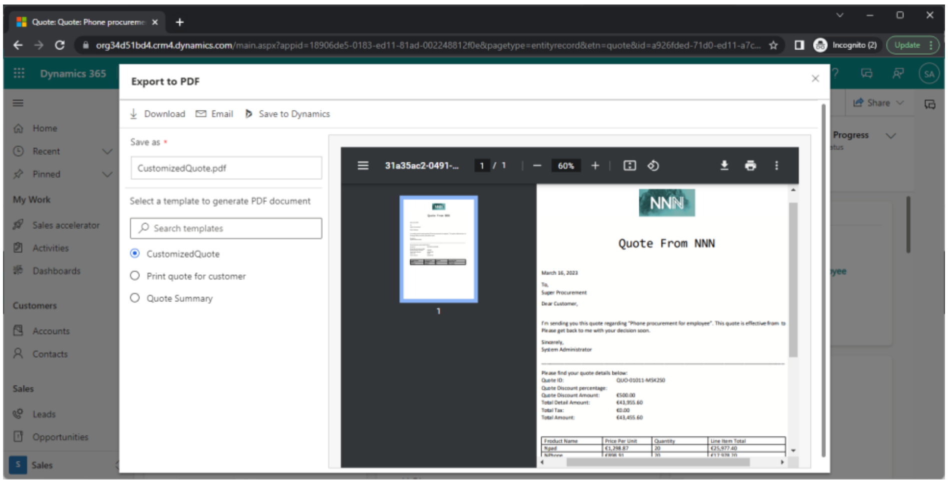

Figure 18. Export quote to PDF.

The Sales team should always concentrate on building customer relationships stronger. Beside ensuring that customers are satisfied with the proposed solution, discovering and addressing their potential concerns, and communicating proactively, are always excellent ways to promote further business.

3.2.5 Close

If the proposal is accepted, the next stage is Close, where the opportunity is converted into a sale, and the quote will turn into order. This may involve negotiating terms and conditions, finalizing the contract, and obtaining any necessary approvals.

Maintain a strong relationship with the customer is still essential at this stage. Following up with them after the sale to ensure their satisfaction and address any issues that may happen, can also create opportunities for other cases.

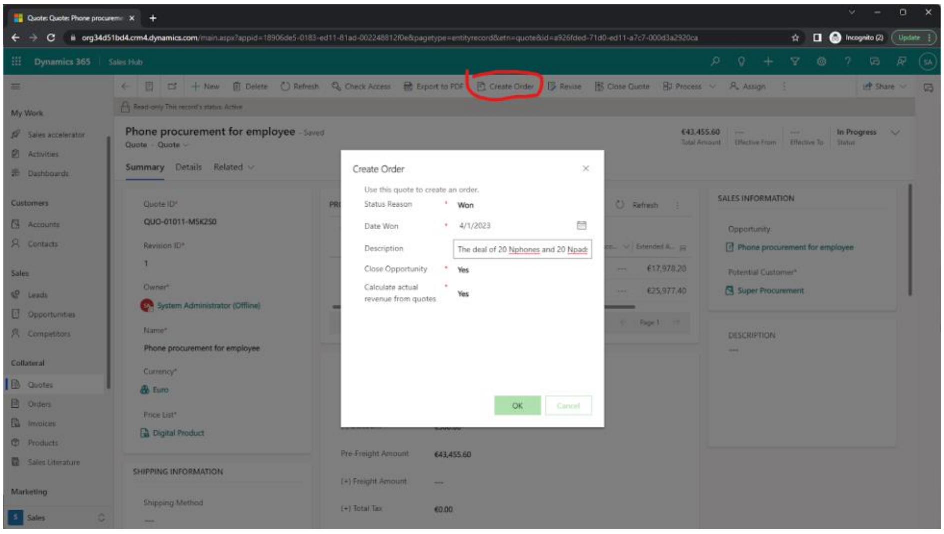

Figure 19. Create order.

When the proposal is accepted, an order can be created from a related active quote which was activated in the previous stage in the Sales Hub, the process is shown in Figure 19. To fulfill the order by reviewing the details of the proposal, make sure order information, shipping information, billing address, and other related data are accurate and up to date. Then click the “Fulfill Order”, shown in Figure 20, to switch to the last stage.

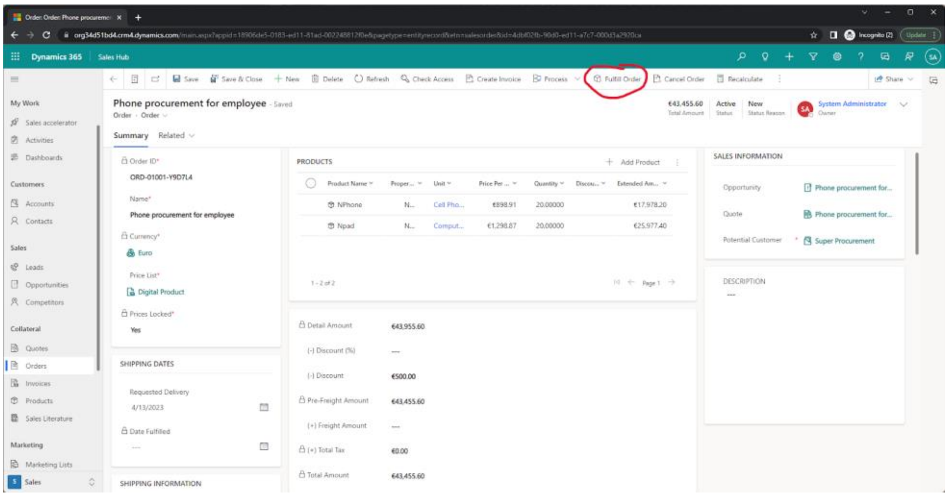

Figure 20. Fulfill the order.

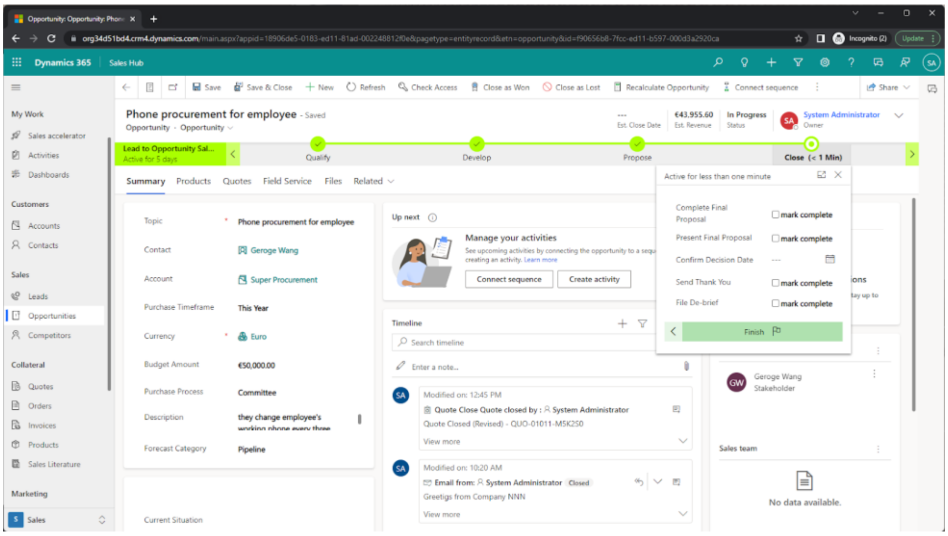

Figure 21. Close stage in sales process.

In general, before closing this opportunity case, sales team should confirm the opportunity has been won or lost, complete and present the final proposal, confirm the decision date, update the opportunity records, send a “Thank You” message, and follow up with the customer, based on the sales process in Figure 21 above.

3.2.6 Fulfill

The final stage of the Dynamics Sales process is Fulfill, where the products or services are delivered to the customer. During this stage, sales teams will typically work closely with other departments to ensure that the delivery is successful, and the customer is satisfied.

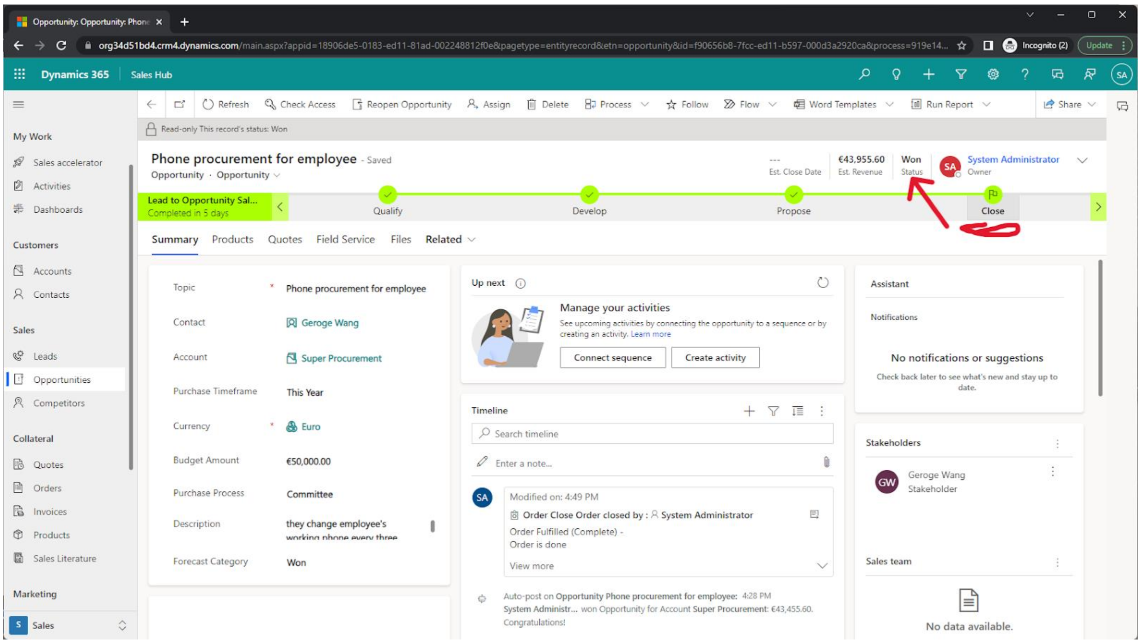

Figure 22. Opportunity close as Won.

In the Sales Hub after an order is fulfilled, the whole sales process of opportunity is automatically closed, and status will change as “Won” shows in Figure 22. With the fulfilled order we can generate an invoice by clicking “Create Invoice” from the command bar. In the end while the invoice is paid, the whole sales process is done successfully.

3.3 Sending new lead notification email by automate flow

Building a flow is a powerful way to automate various processes and tasks, allowing for increased efficiency and productivity within the sales team.

The sales team wants to automate the process when a new lead is added to Dynamics Sales, then an email notification will be sent to a specific salesperson based on the region of lead. This can help the sales team stay on top of new leads and respond quickly to potential customers. Based on the requirements, the purpose of this subchapter is to provide a guidance on how to build a flow from scratch by Power automate.

3.3.1 Build the flow

In this section, the fundamentals of creating a flow will be covered, including how to define triggers, add actions, and configure conditions.

First log into Power Automate by using App Launcher (Bento icon), create a new automated cloud flow, choose "When a record is added, modified or deleted" as the trigger and click "Create". The process is shown in Figure 23 below.

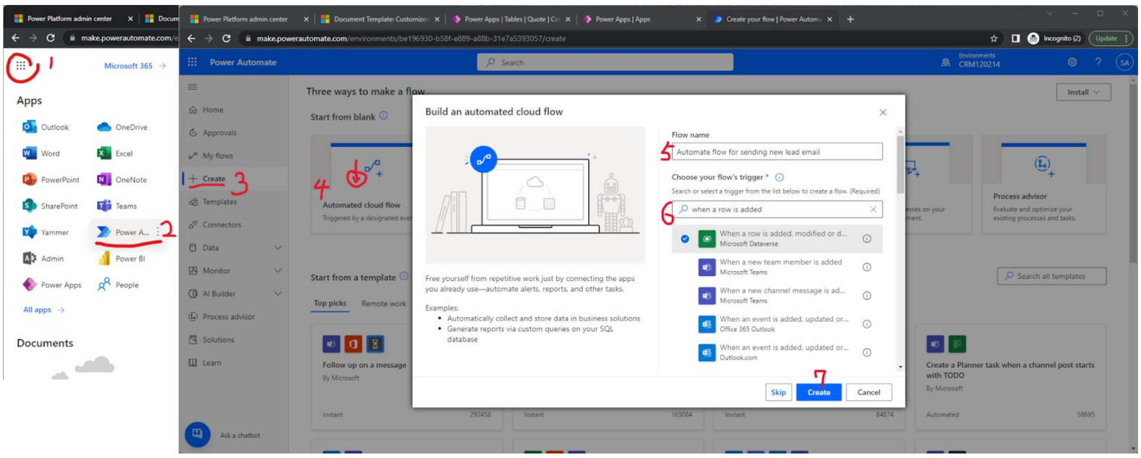

Figure 23. Create new flow from scratch.

In the trigger “When a record is added, modified or deleted”, choose the “Added” as change type, “Leads” entity as table name, and “Organization” as scope.

Then insert following actions shown in Figure 24:

- Initialize variable: set a variable to store the email address in the following step.
- Get a row by ID: get related data records by added lead ID.
- Condition: check if current lead is from a specific region.
- Set variable to set the email address according to the region.
- Condition: validate the email address.
- Send an Email (V2): add dynamic contents into receiver, subject, or body of email.

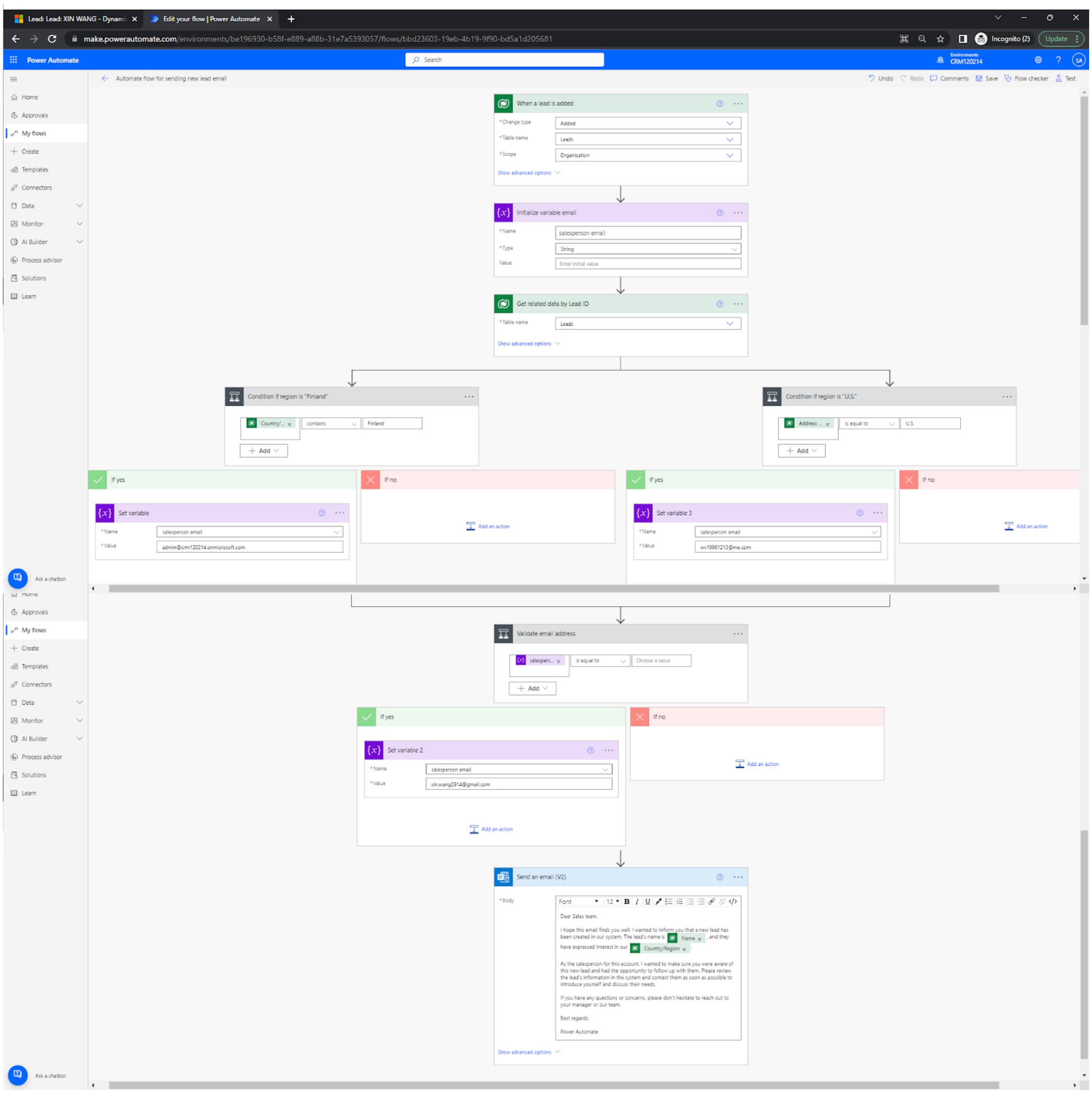

Figure 24. Complete Power automate flow structure.

3.3.2 Demonstration

When the flow is saved, “Your flow is ready to go. It's turned on and will run when it's triggered.” is showing on the top of the flow details page. You can turn this flow off by clicking the “Turn off” button at any time you wish.

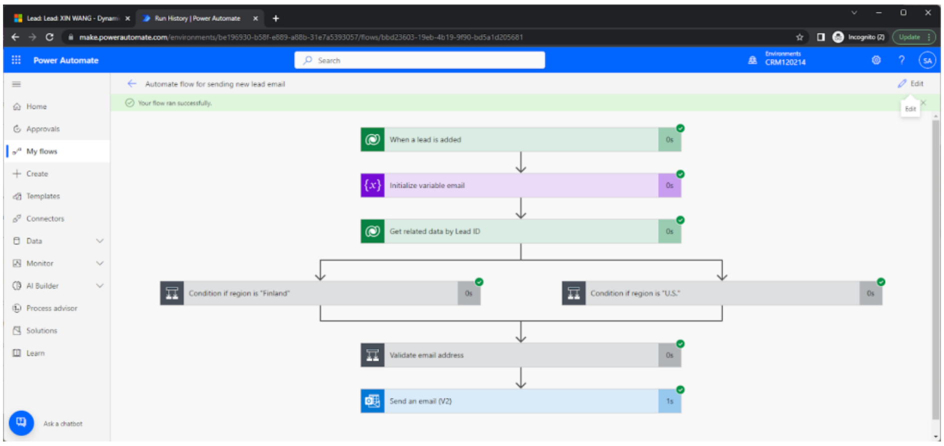

Figure 25. Process of sending new lead email.

From now on, once the flow is triggered, the following process will run automatically in the background as Figure 25 shows. Then the specific salesperson will receive an email which is sent by flow creator shown in figure 26.

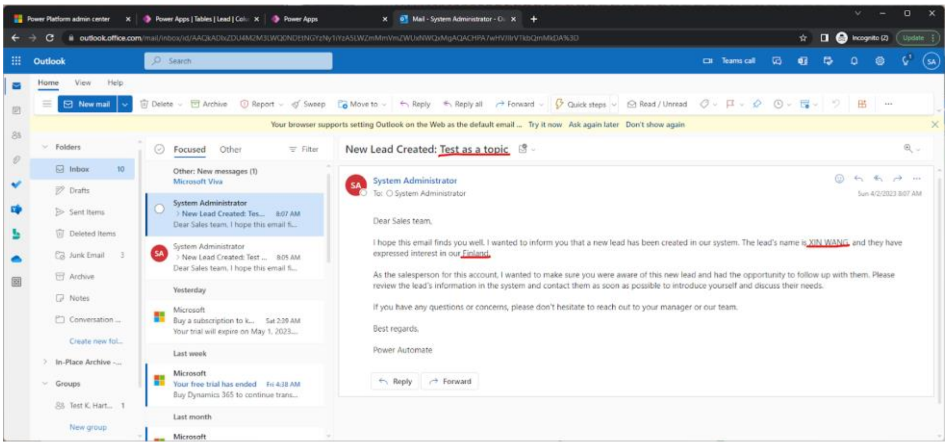

Figure 26. Flow triggered email.

3.4 Lead dashboard by Power BI

In this subchapter a lead dashboard will be built. It can help sales teams visualize and manage their leads effectively. It provides an at-a-glance view of important metrics related to leads, such as the number of leads generated, the stage of each lead in the sales process, the source of the leads, and the conversion rates.

First is to get the database ready. Connect Power BI to the Dataverse by clicking “Get Data”, choose “Dataverse”, then open the environment data (CRM120214), and use search engine to find the needed table (lead), then click load. After about 10 seconds the data will connect successfully with Power BI. Figure 27 is the visible process.

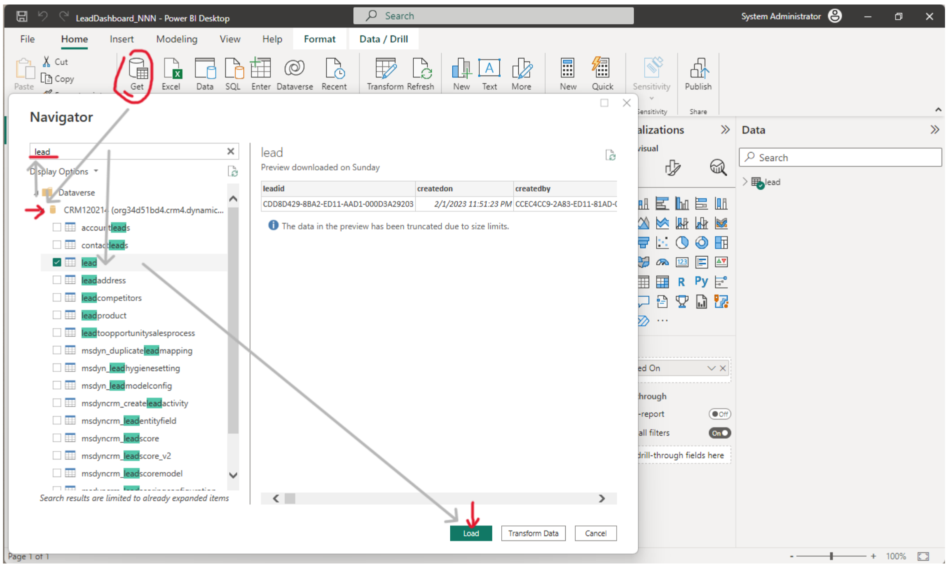

Figure 27. Connect with Dataverse.

In this Lead dashboard, there will be three main components, a pie chart, a line chart, and a Table. By having this information readily available, sales teams can quickly identify the insight of current leads, and make data-driven decisions.

Figure 28 is the pie chart to illustrate the distribution of leads across different owners or sales representatives. Each slice of the pie represents a specific owner, and the size of the slice corresponds to the number or percentage of leads they have. This can help the sales team to quickly identify which owners have the most leads, which ones have the fewest, and which ones may need additional support or resources to improve their performance.

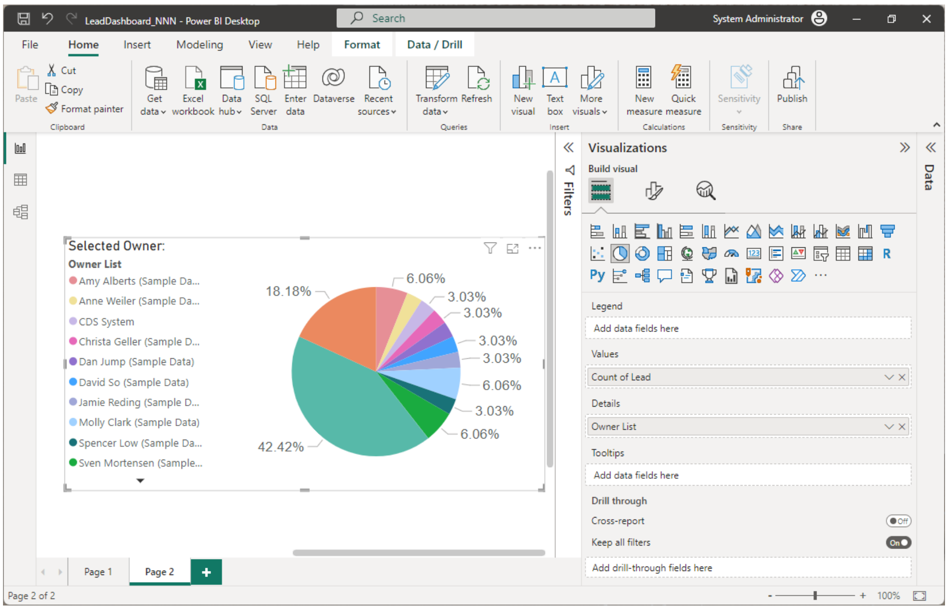

Figure 28. Pie chart: Owner and Count of Lead.

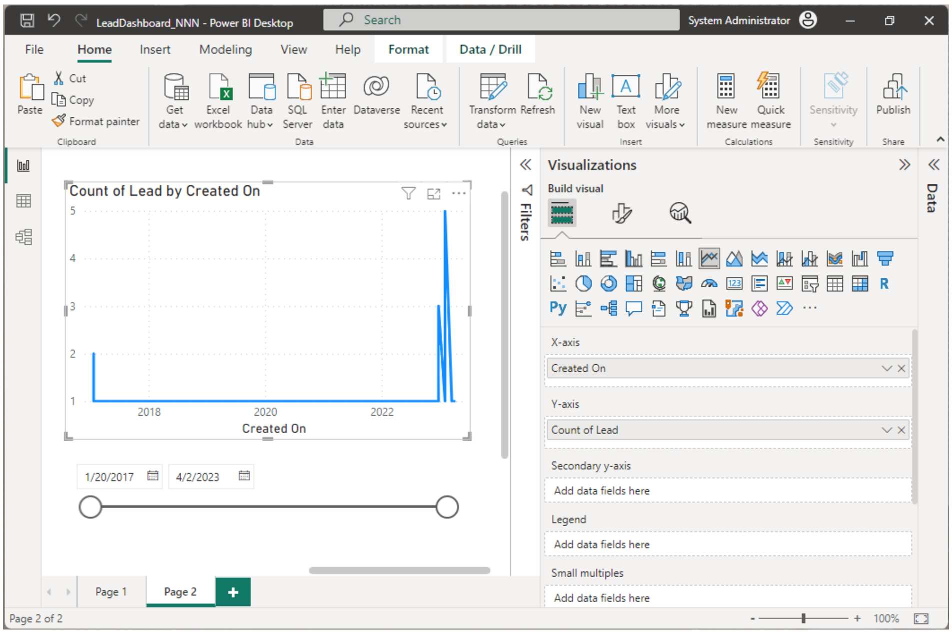

Figure 29. Line chart: Count of Lead and Created Date.

Figure 29 shows a line chart with a slicer that can illustrate the relationship between the count of lead and the created date by plotting the count of lead on the vertical axis and the created date on the horizontal axis. With the help of slicer, the line chart can show the trend of lead creation over time, it also allows the sales team to focus on a specific period and analyse the lead generation trend.

The table in the dashboard contains the following columns: Lead Topic, Contact, Location, Decision Maker, Purchase Timeframe, Lead Source, and Rating.

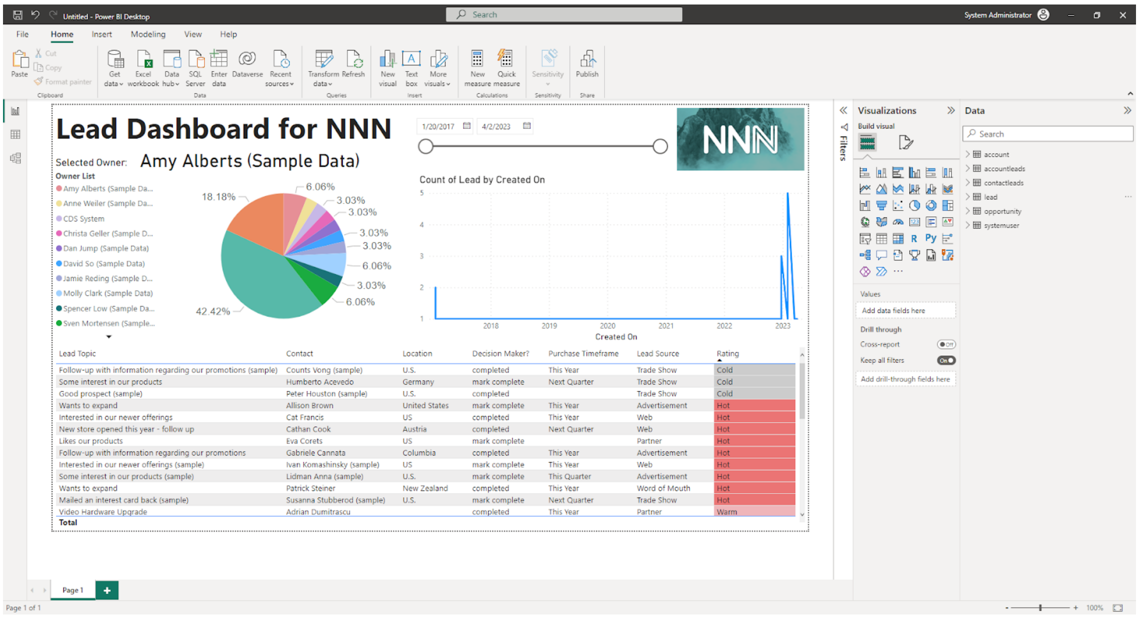

Figure 30. Lead dashboard.

After assembling those three main components mentioned above, a title and some decorations can be added. The finished Lead dashboard is shown at Figure 30. This dashboard is very flexible and interactive. The period of data shown can be adjusted from slicer, which then the entire dashboard updates dynamically. Additionally, by clicking on the name of the salesperson, it is easy to see the number of sales cases they currently have. Both dynamic functionalities can be used simultaneously. An example is shown in Figure 31 below, this example administrator has 5 leads with different ratings created between 12.1.2022 and 4.2.2023.

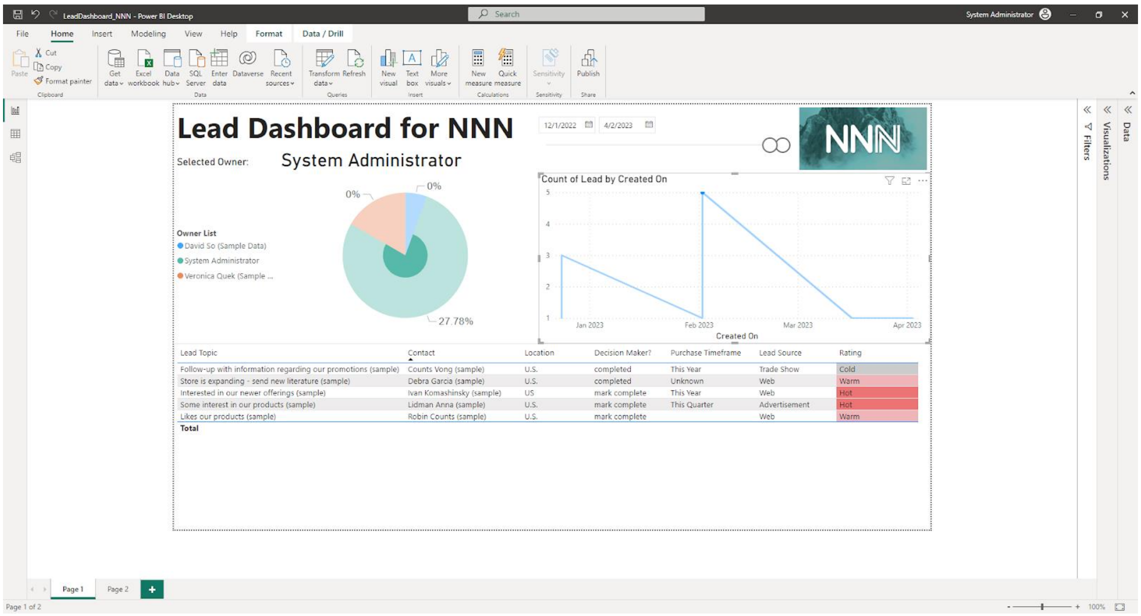

Figure 31. Dynamic Lead Dashboard example.

3.5 Result

Prior to implementing Microsoft's Power Platform, Company NNN faced challenges with managing its business operations and gaining real-time insights into its data. The company's reliance on manual processes and disparate systems led to inefficiencies, delays, and a lack of collaboration among employees. As a result, Company NNN found it difficult to make informed decisions and stay ahead in the market.

However, after implementing Power Platform solutions, Company NNN experienced significant improvements in its business operations and data management. By using Dynamics Sales, the company streamlined its workflows and made it easier for employees to collaborate.

The company also used Power Automate to automate its lead generation flow and notify sales managers by email. This resulted in faster and more efficient processes and helps them to take quick action and follow up with potential customers, which can increase the chances of converting them into actual customers.

With the help of Power BI, Company NNN gained real-time insights into its data and made informed decisions. The company's marketing manager could analyse the lead data and identify trends. These insights enabled the company to adjust its strategies and make informed decisions that helped it stay ahead of its sales process in the market.

Overall, the implementation of Power Platform solutions enabled Company NNN to track their sales process easily, improve collaboration among its employees, manage leads more efficiently, and gain valuable insights into its data. This case study explores the details of the implementation and the impact it had on the company's operations and data management.

4 Conclusion

The original idea of my thesis came from my internship when I first learned about Microsoft Power Platform. After starting to work in Tietoevry, I encountered many projects of different scales. The goal of the thesis was to get to know the Power Platform products and how they are implemented in real business processes, which was well achieved in terms of the theory and the implementation part. The theory part in chapter 2 described four key Power Platform products Power Apps, Power BI, Power Automate and Power Virtual Agents. The chapter explained what the product is, what is the capability, and what product is intended for. The implementation part is introduced in chapter 3. To describe the various functions of the Power Platform more coherently and comprehensively, I constructed a fictional company NNN, using Power Platform to address current concerns and analyse the differences before and after using the solution as a result.

The application trend of low-code platforms is analysed from Kang Rong in 2020, Vice President and General Manager of Marketing and Operations of Microsoft Greater China, the perspective of market development, “At present, most companies have many non-digital internal company processes, and this time Covid19 will force all companies to transform. Not just technology companies, but companies in every industry in the world are facing digital pressure. Low-code platforms are an effective means for enterprises to achieve digital transformation. It is estimated that by 2024, more than two-thirds of enterprises will use low-code development tools and platforms.” Hence the subject of my thesis is very topical, especially under current trends and the strong promotion of Microsoft, companies will gradually adopt the different areas of the Microsoft Power Platform as solutions in their business in the future.

This paper took me about five months from conception to completion of the first draft. During this period, while I became more and more familiar with the power platform, I was also observing related job demands. From the perspective of the job market, the demand for citizen developers is on the rise and many companies are willing to train a graduate to meet the vacancies of related positions. From my point of view, the content of this article is an introduction to the Power platform and the actual project, which is friendly to a reader who has never been in contact.

If readers want to expand the scope of this thesis work, they can conduct a survey on the company's use of the Power platform, to gather feedback and improve. A good example is to take customer satisfaction as the main basis for investigation and analysis. The survey items can contain employee satisfaction with the system convenience, satisfaction with the difficulty of use, and satisfaction with the use effect, before and after using the power platform.

5 Acknowledgement

I would like to extend my sincere appreciation to my thesis supervisor, Tapio Wikström, for his exceptional guidance, support, and motivation throughout the course of this research. His extensive knowledge, insights, and feedback have been crucial in shaping the direction and quality of this thesis.

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Finally, I would like to acknowledge and express my thanks to my colleagues at Tietoevry, whose assistance and feedback have been instrumental in shaping the direction and outcomes of this research. Their collaboration and expertise have been of immense value in the success of this study.

References

1 Chen W-E, Lin Y-B, Yen T-H, Peng S-R, Lin Y-W. DeviceTalk: A No-Code Low-Code IoT Device Code Generation. Sensors. 2022 Jun 30;22(13):4942.

2 Duggal N. 18 Top Technology Trends for 2023 [Internet]. Simplilearn.com. Simplilearn; 2022. Available from: https://www.simplilearn.com/top-technology-trends-and-jobs-article

3 Critical Capabilities for Enterprise Low-Code Application Platforms [Internet]. Gartner. 2023 [cited 2023 Mar 19]. Available from: https://www.gartner.com/en/documents/4023306

4 KumarVivek. Microsoft Power Platform documentation - Power Platform [Internet]. learn.microsoft.com. [cited 2022 Oct 12]. Available from: https://learn.microsoft.com/en-us/power-platform/

5 KumarVivek. Microsoft Power Apps documentation - Power Apps [Internet]. learn.microsoft.com. [cited 2022 Oct 12]. Available from: https://learn.microsoft.com/en-us/power-apps/

6 MSFTMan. Power Automate documentation - Power Automate [Internet]. learn.microsoft.com. [cited 2022 Oct 12]. Available from: https://learn.microsoft.com/en-us/power-automate/

7 maggiesMSFT. Power BI documentation - Power BI [Internet]. learn.microsoft.com. [cited 2022 Oct 12]. Available from: https://learn.microsoft.com/en-us/power-bi/

8 iaanw. Microsoft Power Virtual Agents documentation - Power Virtual Agents [Internet]. learn.microsoft.com. [cited 2022 Oct 12]. Available from: https://learn.microsoft.com/en-us/power-virtual-agents

9 udaykirang. Welcome to Dynamics 365 Sales [Internet]. learn.microsoft.com. Available from: https://learn.microsoft.com/en-us/dynamics365/sales/overview

10 Create and manage Word templates in Dynamics 365 Sales [Internet]. GitHub. 2023 [cited 2023 Apr 1]. Available from: https://github.com/MicrosoftDocs/dynamics-365-customer-engagement/blob/main/ce/sales/manage-word-templates.md

11 Professional Advantage. Microsoft 365 and Office 365 [Internet]. Enterprise Software Blog - Professional Advantage. 2021 [cited 2022 Oct 10]. Available from: https://blog.pa.com.au/topic/blogs-by-product/microsoft-365-and-office-365/

12 Wheeler V. Guo, Kim, & Rubin (2014) [Internet]. 2014 [cited 2022 Oct 10]. Available from: https://vmw25.net/m-ed-portfolio/article-reviews/guo-kim-rubin-2014/

13 Pearson M, Knight B, Knight D, Quintana M. Pro Microsoft power platform : solution building for the citizen developer. New York: Apress Media Llc, New York; 2020.

14 Introducing Microsoft Power Fx: the low-code programming language for everyone [Internet]. powerapps.microsoft.com. [cited 2022 Oct 12]. Available from: https://powerapps.microsoft.com/en-us/blog/introducing-microsoft-power-fx-the-low-code-programming-language-for-everyone/

15 Roine J. An in-depth look at Microsoft Power Automate Desktop and building Robotic Process Automations [Internet]. Jussi Roine. 2021 [cited 2022 Oct 12]. Available from: https://jussiroine.com/2021/04/an-in-depth-look-at-microsoft-power-automate-desktop-and-building-robotic-process-automations/

16 Microsoft Power Platform 2023 release wave 1 plan overview [Internet]. learn.microsoft.com. [cited 2023 Apr 7]. Available from: https://learn.microsoft.com/en-us/power-platform/release-plan/2023wave1/

Appendix

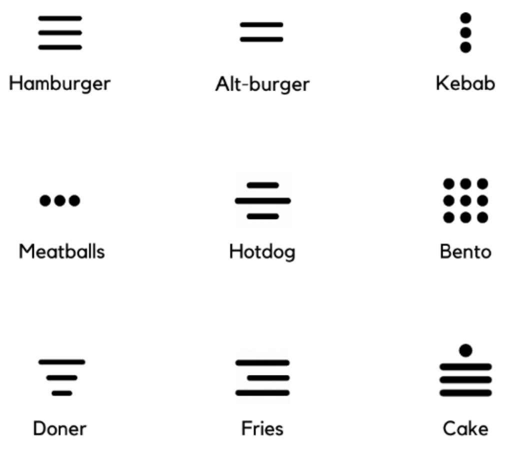

Figure 32. Name of different menu icon.