Benefits and Challenges in Robotic Process Automation: A Case Study in DHL Global Forwarding (M) Sdn Bhd Malaysia

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DECLARATION OF ORIGINAL WORK

I hereby declare that all the work of this thesis entitled “Benefit and Challenges in Robotic Process Automation: A Case Study in DHL Sdn Bhd Malaysia” is original done by myself and no portion of the work encompassed in this research project proposal has been submitted in support of any application for any other degree or qualification of this or any other institute or university of learning.

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DATE : 30 JANUARY 2023

DEDICATION

I'd want to express gratitude to the members of my family who took the time and effort to see to it that I got a good education and stayed motivated to keep going to college. Inaddition, I would like to thank Dr. Amiruddin Bin Ahamat, my professor and the supervisor for my senior capstone project, and all my other classmates and friends. Throughout this investigation, they have been there for me, offering guidance and assistance at every turn. The timely completion of this study is dependent on their approval and support.

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ABSTRACT

An examination of the literature that has come before on the same topic is offered here. Robotic process automation (RPA) is a method for completing repetitive business processes without the need for human intervention. Researchers have also published previous papers proposing solutions to help the logistics and supply chain industries deal with the challenges brought by RPA. In this research, there were three things that have been figured out: The benefits of implementation of RPA, Challenges of RPA, and technology acceptance among DHL Global forwarding (M) Sdn Bhd Malaysia employees. The goals of this study were attained by the development and testing of enlarged research questions. DHL Global Forwarding (M) Sdn Bhd Malaysia. Bhd. undertook a review of the framework which is Technology Acceptance Model (TAM) to evaluate the qualitative methods to deal with the benefits and drawbacks of their current situation. Three workers of DHL Global Forwarding (M) Sdn Bhd in Malaysia were interviewed to provide the bulk of the study's main data. This study employs a qualitative approach to research. Using the descriptive approach as a study design, the researcher crafts questions for respondents to answer in an interview. The researcher founded the benefits of implementation RPA which are to increase better customer experience, increase in productivity, increase efficiency, reduced errors, and better data analytic and for the challenges are lack of knowledge and experiences, technical support, and computer anxiety. Lastly, the researcher believes that robotic process automation brings positive impact towards DHL Global Forwarding (M) Sdn Bhd Malaysia.

Keywords: Robotic Process Automation (RPA), Technology Acceptance Model (TAM), Benefits, Challenges

ABSTRAK

Pemeriksaan kesusasteraan yang telah datang sebelum topik yang sama ditawarkan di sini. Automasi proses robotik (RPA) adalah kaedah untuk menyelesaikan proses perniagaan berulang tanpa memerlukan campur tangan manusia. Penyelidik juga telah menerbitkan kertas kerja sebelumnya yang mencadangkan penyelesaian untuk membantu industri logistik dan rantaian bekalan menangani cabaran yang dibawa oleh RPA. Dalam penyelidikan ini, terdapat tiga perkara yang telah difikirkan: Manfaat pelaksanaan RPA, Cabaran RPA, dan penerimaan teknologi di kalangan kakitangan DHL Global forwarding (M) Sdn Bhd Malaysia. Matlamat kajian ini dicapai dengan pembangunan dan ujian soalan penyelidikan yang diperbesarkan. DHL Global Forwarding (M) Sdn Bhd Malaysia. Bhd. telah menjalankan kajian semula rangka kerja tersebut iaitu Model Penerimaan Teknologi (TAM) untuk menilai kaedah kualitatif bagi menangani faedah dan kekurangan keadaan semasa mereka. Tiga pekerja DHL Global Forwarding (M) Sdn Bhd di Malaysia telah ditemuramah untuk menyediakan sebahagian besar data utama kajian. Kajian ini menggunakan pendekatan kualitatif untuk penyelidikan. Menggunakan pendekatan deskriptif sebagai reka bentuk kajian, penyelidik membuat soalan untuk responden menjawab dalam temu bual. Penyelidik mengasaskan manfaat pelaksanaan RPA iaitu untuk meningkatkan pengalaman pelanggan yang lebih baik, meningkatkan produktiviti, meningkatkan kecekapan, mengurangkan kesilapan, dan analisis data yang lebih baik dan untuk cabaran adalah kekurangan pengetahuan dan pengalaman, sokongan teknikal, dan kebimbangan komputer. Akhir sekali, penyelidik percaya bahawa automasi proses robotik membawa impak positif kepada DHL Global Forwarding (M) Sdn Bhd Malaysia.

Kata kunci: Automasi Proses Robotik (RPA), Model Penerimaan Teknologi (TAM), Faedah, Cabaran

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LIST OF ABBREVIATIONS

ABBREVIATION	MEANING
RPA	Robotic Process Automation
HITL	Human-In-The-Loop
AI	Artificial Intelligence
OCR	Optical Character Recognition
TRA	Theory Reasoned Action
TAM	Technology Acceptance Model

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CHAPTER 1

INTRODUCTION

1.1 Introduction

This chapter will include the background of the study, problem statement, research questions and objectives, scope of study, research limitations and significance of the study.

1.2 Background of Study

During the last several years, a growing number of businesses have shifted their focus to digital systems. It is very uncommon for broad adoption of such technologies to lead to significant changes in the operations of existing businesses, the birth of new business models, and even the introduction of whole new sectors (Berman, 2012). The process through which these adjustments are made is called "digital transformation" (Suryono, R, 2015). Another frequent definition of digital transformation is "the act of making something better by causing it to change significantly in keyways by making extensive use of digital information, computing, communication, and connection technologies" (Vial, G., 2016).

Numerous studies have shown that this method of transforming organizations improves organizational resilience, which is defined as "the firm's ability to effectively absorb,develop situation-specific responses to, and ultimately engage in transformative activities to capitalize on disruptive surprises that potentially threaten organization survival" (Zhang et al., 2021). In the future, "digital technology will be an increasingly vital part of corporate resilience," with data analytics, digital tools, and automation becoming essential for all businesses (El-Shahawy et al., 2022).

More and more organizations are turning to IT solutions, chief among which are software robots, to automate operations, laying the groundwork for digital transformation.Even more intriguing is Swan's emphasis on the rise of an automation economy, which centers its analysis of economic functioning on scenarios in which robotic technology is used to supplement or replace the majority of human work (Swan, 2017).

The phrase "software robot" has close ties to the idea of Robotic Process Automation (RPA). There are two schools of thought on the topic in academic literature. From a more restricted perspective, RPA is only the program that allows developers to create software robots that can do human jobs (Willcocks, 2016). From what we can see, RPA solutions are the most rapidly expanding subset of digital transformation technologies in the present IT market (Wadhawani, 2020). In a larger sense, RPA implementation is not equivalent to software implementation; rather, it should be seen in the context of the execution of a seriesof business changes and the outcomes of those changes (Willcocks, 2016).

With robotic process automation, specific technologies are applied to automate mundane, routine, standardized tasks, leading to increased productivity and value for a decreased cost. This is accomplished by letting a computer program, or "software bot," capture and interpret applications for processes that involve data manipulation, transaction execution, triggering responses, and communicating with other digital systems within the domain (Sobczak, 2022).

Due to the high frequency of transactions and the substantial advantages that may be achieved in a very short amount of time, this method is quickly gaining favour, particularly in the banking and financial industries. When manual processing bottlenecks are addressed, automation's advantages grow in proportion to the degree of the enhancements made. The RPA platform gives companies the scalability it needs to execute at a high level and remain there (Sobczak, 2022).

1.3 Problem Statement

According to Elizabeth Mixson (2021) RPA "bots" aren't always compatible with other programs. Automation leaders may get beyond these hurdles by expanding their use of robotic process automation (RPA) and creating a company-wide strategy for using RPA that is intrinsically tied to their digital transformation initiatives. Pascal Bornet's recent book, "INTELLIGENT AUTOMATION," includes a case study in which a bank improved its resolution of fraud by 30 percent after using a single RPA tool. More than 70 percent more fraud cases were resolved and $100 million was saved when the bank used the tool throughout an end-to-end process and integrated it with several digital technologies.

Moreover, Elizabeth Mixson also states that it is simple and inexpensive to automate between 70 and 80 percent of a process. But at that point, the price of technology tends to explode. A study found that although full automation is ideal, it might be five times more costly than automating only 80% of a process. This is because automating the last 20% wouldneed far more complex automation code than was needed for the first 80%. Many businesses instead choose a human-in-the-loop (HITL) method, also known as Attended Robotic Process Automation (RPA). To fulfil its task, attended RPA must engage with a human in some way. To illustrate, suppose an anomaly or mistake is encountered by the RPA bot. Instead of continuing as normal, the bot will alert a human to double-check the data. Over half of all RPA processes (57% as of early 2018) involve human interaction, and attended RPA has a more developed adoption maturity and bigger installed base in terms of license quantities than unattended RPA (no human intervention necessary).

According to Jason Dzamba (2022) due to a lack of adaptability in RPA, it is difficult to test various processes. Businesses that decide to engage in RPA must often front hefty startup expenditures to get their automations up and running. When the bot is up and running, there is not much money left over to improve its performance or add new features. The robots has experience with all the main RPA systems, including UiPath and Automation Anywhere. Typical RPA providers have high initial costs and ongoing license fees for each bot automaton. Traditional RPA suppliers' insistence on costly bot licensing undermines the promise of digital transformation. A company should use iterative testing to determine which kind of automation will be most beneficial. It is important to have licensing and implementation flexibility when determining which processes may be automated using RPA. The creation of an RPA goes through cycles of development. While bots may seem easy to create in theory, integrating them into an organization's current framework is a complex task that is frequently disregarded. Leaders may choose the next steps for the automation pipeline if they make educated choices about the return on investment and effect of their RPA.

1.4 Research Questions

The researcher determined two research questions in this study:

i- How could RPA benefits in DHL Global Forwarding (M) Sdn Bhd Malaysia?

ii- What are the challenges of RPA in DHL Global Forwarding (M) Sdn Bhd Malaysia?

iii- What are the perceptions of technology acceptance of RPA among DHL Global Forwarding (M) Sdn Bhd Malaysia employees?

1.5 Research Objectives

In this research, there are two research objectives to be figured out:

i- To determine the benefits of Robotic Process Automation (RPA) in DHL Global Forwarding (M) Sdn Bhd Malaysia.

ii- To investigate the challenges of adopting Robotic Process Automation in DHL Global Forwarding (M) Sdn Bhd Malaysia.

iii- To investigate technology acceptance of RPA in DHL Global Forwarding (M) Sdn Bhd Malaysia.

1.6 Scope of the Study

The research is focuses on in DHL Sdn Bhd Malaysia which aims to determine the benefits and challenges of Robotic Process Automation. The data collection will be collected from DHL employees. The research would be done through the utilization of interview questions during interview session and other references. Thus, with the results that gain from them, the researcher can profile the benefits and challenges of Robotic Process Automation in in DHL Sdn Bhd Malaysia.

1.7 Significant of Study

The logistics and supply chain sectors stand to gain from this study by learning how robotic process automation might improve their operations. Next, this study will aid the logistics and supply chain sectors in overcoming the obstacles presented by RPA. Finally, future researchers would benefit from this study because they would have access to additional material that may be useful to them in their own investigations and, perhaps, have some of their own questions addressed.

1.8 Definition of Terms

I. Robotic Process Automation (RPA)

Robotic process automation (RPA) is a technique for carrying out routine corporate tasks by computerizing the ways in which humans now accomplish those tasks, whether it via a single application interface or a combination of interfaces, analytics, and rules-based decision making (Deloitte, 2017)

II. Digital Transformation

To adapt to changing business and market needs, organizations are increasingly turning to digital transformation, which entails reimagining or redesigning core elements such as procedures, organizational culture, and customer interactions. Digital transformation refers to this process of rethinking company practices for the Internet Age (SalesForce,2020).

III. Artificial intelligence (AI)

This 2004 article (PDF, 106 KB) by John McCarthy provides a definition as he sees it "The study and development of intelligent devices, in particular software that can think for itself. The goal of utilizing computers to study human intelligence is similar, but AI is not limited to approaches that can be seen in living organisms."

1.9 Summary

In conclusion, this chapter discusses the overview of the study. It discussed the background of the study, problem statement, research questions, research objectives, scope and limitation of the study, and significance of the study. In the coming chapter, the researcher will carry out the literature review of the study. The information will be broader and more understandable.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

In this chapter, the researcher will discuss some of the debates and studies that have come before on this same issue. The researcher will present a thorough review and improvement on the research done on the benefits and challenges of RPA in DHL Malaysia. The research framework will be considered while chapter 2 is being written.

2.2 Definition of Robotic Process Automation (RPA)

Robotic process automation (RPA) is a technique for carrying out routine corporate tasks by computerizing the ways in which humans now accomplish those tasks, whether it via a single application interface or a combination of interfaces, analytics, and rules-based decision making (Deloitte, 2017). Robotic process automation (RPA) is the automated execution of processes, activities, transactions, and tasks across many software systems, with human exception handling (IEEE Corporate Advisory Group, 2017). Repetitive process automation (RPA) may automate operations that employees must consistently execute to improve processes, and RPA solutions are intended to lessen the load of basic, repetitive jobs on workers (Aguirre & Rodriguez, 2017). Therefore, RPA is comparable to other conventional forms of automation, such as the use of assembly-line technology (Moffitt, Rozario, & Vasarhelyi, 2018). Thus, RPA automates portions of the process by exchanging current human processes with automated ones at the presentation layer only, as opposed to developing new systems or reengineering old ones (IRPA, 2016). Therefore, RPA maystreamline corporate processes and boost efficiency by substituting human labour with digitallabor.

Robotic process automation (RPA) is quickly becoming an integral part of modern businesses. Payroll, hiring and onboarding new employees, managing finances, issuing invoices, keeping track of stock, generating reports, migrating data, and other fundamental business activities may all benefit from automation. In addition, RPA may be used in many

other sectors, including the healthcare and pharmaceuticals industry, the financial services sector, outsourcing, the retail sector, the energy and utilities sector, real estate, and the fast-moving consumer goods sector (Madakam, Holmukhe, & Jaiswal, 2019). The RPA, for instance, may be employed as an autonomous overlays of current IT systems to carry out consolidated audit activities or analysis across disparate software platforms (Huang & Vasarhelyi, 2019). Naver introduced a cardbot in September 2015; it provides purchasers with a number of different choice practices based on one of the most commonly requested queries (Heo & Lee, 2018). Financial organisations increasingly utilise smart spreadsheets to provide automated financial services, tablet banking, and virtual contracting processes (Chang & Park, 2018). In the realm of artificial intelligence for recruitment, integratedsolutions can quickly assess data from vast pools of candidates via document inspections, personality tests, interview screening, and judgement suggestions (Son, Lee, & Chang, 2019).Firms looking to deploy RPA should weigh the projected operational improvement from RPAagainst the price of hardware/software investment/implementation and related change management expenses.

2.2.1 History of RPA

Numerous sectors have expanded their investment in software automation in response to the rising popularity of automated processes. Automation technology was utilised by companies like IBM, Oracle, and others in the 1990s to push the automation of administrative tasks. Early screen scraping tools, industrial process software, and even Microsoft Office's "Macro" feature all contributed to the evolution of robotic process automation. To convert the information shown on a computer screen into a format that can be stored in a database, there is a tool called a screen capture tool. Banks, travel agencies, airlines, and other businesses now regularly use the practise of screen scraping. Software designed to automate operations that are traditionally carried out manually inside an organisation, such as approvals, changes, and data entry, have numerous potential uses.

There has been a worldwide uptick in cost-cutting strategies for manufacturing since the turn of the century. These strategies include the Lean Six Sigma management model, process optimization, business software enhancement, and outsourcing of workers. Many businesses nowadays turn to RPA because of the money it may save them in this area.

Currently, they have used RPA across a wide range of repetitive business processes in an effort to boost productivity and enhance the quality of their offerings to customers.

Everest Group on the Evolution of RPA states that there are three distinct phases of RPA development.

One, it uses a logical and organised framework for handling massive amounts of data. For instance, it may get rule information from emails, enter it into a spreadsheet, save the spreadsheet to a database, and then send out emails to clients and staff.

Second, it's built on complicated tasks and unstructured data. Optical character recognition (OCR) technologies are used to enter non-standard data into various systems, while chatbots and voice recognition technology are used extensively to provide instantaneous support to customers.

Thirdly, AI is integrated into the system to handle complex mental workloads. At this point, RPA uses well-crafted algorithms to suggest the best course of action and offer an advisory choice. For instance, a robot may utilise machine learning to analyse loans and expert algorithms to approve insurance policies, as well as offer the best items to clients. The future of cognitive automation is AI integration with RPA.

2.2.2 Capabilities of RPA

Here are a few ways in which RPA stands apart from other automation methods:

i. Since RPA may be deployed on top of already infrastructure and have access to pre-existing platforms through the presentation layer, no new underlying systems programming logic is required (Enríquez et al., 2020).
ii. Robotic process automation (RPA) is a piece of computer code designed to do tasks in a manner like a person. It's simple to use; simply move and drop symbolsaround and connect them to make new things (Yucun Wang, 2021).
iii. There is no requirement for a database, as there would be with a Business Process Management system, since RPA does not generate a new application or store the transactional data (Enríquez et al., 2020).

2.2.3 Benefits of RPA

Since RPA increases both worker output and overall workflow efficiency, it presents significant new possibilities for businesses. Automation aids in the control of routine tasks and the establishment of uniform procedures. The most notable gains from using RPA are:

i. Spend less money on manufacturing without sacrificing quality, since "RPA adoption permits cost savings of 25% to 75% by enhancing the performance metrics of the applied functions" (Willcocks & Lacity, 2016). Real estate consultant Jones Lang Lasalle predicts that as a result of banking process automation, the number of bank branches could drop by as much as 20% within the next five years, and the average bank branch could shrink in size from 5,000 square feet to 3,000 square feet,saving as much as USD 8.3 billion per year according to Sylwia Wojciechowska- Filipek (2019).

ii. Increase output since people are no longer wasted on low-value tasks thanks to robotic process automation. RPA will increase overall system efficiency by promoting the new team division method of "machine Plus human." Robots can conduct routine tasks like data entry, report generation, and account management, while humans can focus on more nuanced tasks like report analysis and routine quality control (Yucun Wang, 2021). Unlike human employees, RPA is available around the clock to tackle international issues.

iii. Errors at work are minimised, and data is secure and trustworthy, provided the logic settings are applied correctly. Repetitive process automation (RPA) is useful for lowering the rate of mistakes made by humans while doing routine operations(Yucun Wang, 2021).

iv. Instead using techniques that expose sensitive data (like outsourcing businesses), RPA may retain everything under internal control (Yucun Wang, 2021).

v. This RPA system can accommodate a wide variety of tasks and system designs (Yucun Wang, 2021). Concurrently, the RPA system may be deployed in a variety of ways and scales quite well.

vi. Speed up the time it takes for a business to respond to a customer inquiry by using robotic process automation (RPA) to deliver consistent answers to frequently asked questions, boost the quality of interactions with customers, and scale up the quantity and quality of service provided to many users simultaneously (Yucun Wang, 2021).

As a conclusion, RPA can guarantee operational and economic advantages.Automation of banking procedures is essential for the safety of client data and the continued success of the institution as a whole (Yucun Wang, 2021).

2.3 Robotic Process Automation and Digital Transformation

According to Sanket Daptardar (2021) Several original ideas combined to create RPA. One example is automated equipment that mimics human motions to keep mechanical systems functioning normally. Additionally, in the world of enterprise content management,it is common practise for businesses to filter and electronically transmit information that has been extracted from incoming structures. The devices were similarly effective as RPA at extracting information from one system and importing it reliably and rapidly into another.

Moreover, Sanket Daptardar (2021) also stated that these days' RPA outcomes are like macros in Excel; they set free the accounting procedure. The most up-to-date tech allows users to keep a log of their day without worrying about how to explain to the RPA exactly what they did. Accordingly, customers may go in and adjust the cycle recording as they see fit.

The goal is simple: to get rid of boring, manual tasks. Companies should find such tasks while using RPA and automate them (Maedche, 2018). There has been a noticeable drop in both error rates and the total amount of time spent on projects, as reported by several satisfied customers. Positive results may often be acknowledged in a short period of time, freeing up resources for use in other areas.

2.3.1 Robotic process automation is a part of the digital transformation toolkit.

The company must be the agent of any technological shifts. However, it is imperative that IT be mandated in order to implement the essential innovations. The litmus test is that IT is limited in its ability to make wholesale changes to all facets of the company at the same time. Before any RPA, and advanced transformation effort begins, it is possible that the IT

department will need to update or replace a critical framework according to Sanket Daptardar (2021).

Redesigning the customer's experience is the first stage in fully mechanising and meticulously altering a cycle. As time goes on, the effort put into the shift smoothed out the UI's information data sources and the results it produces. As time goes on, more and more downstream frameworks benefit from the accumulated data (Sanket Daptardar, 2021). Over time, IT will be able to automate more policies behind the scenes, reducing or eliminating the need for human involvement in the lawful management of data.

Utilizing RPA, businesses are able to do a significant portion of their work. It allows the company to automate tasks without having to wait for individual adjustments to be completed (Kroll,2016). When implemented correctly, RPA may help departments make up for lost time as they wait for their turn to be prioritised.

When companies allow employees to build bots on their own, RPA has extra benefits. Later robots learn quickly about human behaviour by observing it. Why are they automating this? Where do they stand in terms of issues? Similar to how shadow IT exposed unmet need for IT personnel, RPA reveals to IT where it should focus on advanced transformation initiatives (Sanket Daptardar, 2021).

2.4 Artificial intelligence and robotic process automation

According to Sanket Daptardar (2021), human-related tasks may be automated via robotic process automation (RPA). Artificial intelligence (AI) is often seen as a technology with the potential to completely automate and replace human labour (unattended computerization). Robotic process automation (RPA) makes use of structured information with justification, whereas artificial intelligence (AI) makes use of unstructured data and infers its justification from scratch. By combining RPA with artificial intelligence, we may create a system that governs itself completely. To fully robotize a process from beginning to end or to optimise a mechanical cycle whenever it has been relayed, companies need both RPA and AI. This is because businesses have both structured fields such as structural and unstructured which free content and ordinary discourse information.

According to Vom Brocke (2018), offering the self-assistance options that so many customers need requires comprehensive robotization. Think about how creating a new online

ledger can be fully automated with the help of RPA and AI, leading to happy customers and cost savings for the bank. Our patron necessitates the creation of a new online journal. The chatbot determines what kind of account the customer requires a business account and establishes a connection with the backend of the application. The completed structure is then sent over to still another robot, who repeats the process in order to access yet another database. The robot may do tasks such as verifying a client's identity using Google and social media and vetting their FICO score, among other back-end responsibilities (Decker, 2018).

The client then transfers the checked reports with the revised record structure to an intelligent OCR robot for analysis. When comparing the client's name in the system with her driver's licence, it finds a discrepancy (Sanket Daptardar, 2021). This exception will be mediated by a person. John Doe and John Jane Doe are both given the same Social Security number by the expert; thus, they must be the same person. After receiving input from humans, robots may evaluate how to respond in similar situations. In order to verify the authenticity of the transmitted archives, the robot uses techniques like text analysis and everyday language to identify and categorise crucial data hidden within the open-source material (Decker, 2018). When the puzzle pieces are in place, the robot starts the sequence of tasks required to establish the new business account by interacting with the various back-end systems at the bank. If the customer's details are valid, the bank's robot will contact them with an invitation, their account information, and any necessary credentials (Taglloni, 2017). At long last, the robot gives live feedback to the computer control system on a job well done.

2.5 RPA Adoption in Businesses

2.5.1 Market size of RPA

According to The Expresswire (2022) rapid changes in technology's function are occurring all the time. Multiple waves of technological development in the previous few decades have had substantial effects on commercial expansion. As companies throughout the world adapt to the new digital landscape, adoption of these technologies has slowed to a trickle. However, growth and refinement of RPA are expected throughout the projection horizon. Today's businesses want RPA tools to be quick to deploy, run, and scale. Workflow is processed considerably more quickly and effectively, relieving human employees of dull and repetitive everyday activities.

According to MarketWatch (2022), The worldwide RPA market was worth $260 million in 2018, and it is projected to be worth $12.1 billion by the end of 2025, rising at a compound annual growth rate (CAGR) of 61.3% between 2019 and 2025.

2.5.2 Competitive leaders in the robotic process automation (RPA) market

In the years between 2001 and 2005, the foundations were laid for the majority of the top RPA firms in the globe. There are RPA providers on the market that were created by AI makers or major Internet corporations. RPA firms are through a period of rapid expansion; the largest RPA businesses in the world now generate annual revenues of more than $100 million and are valued at over $7 billion. It is expected that the RPA market would continue to develop and mature during the next three years. To quote Gartner: "The top 10 RPA software suppliers' control over 70% of the market share in the RPA industry"(STAMFORD,2020). According to the Gartner Magic Quadrant for RPA in 2020, UiPath, Automation Anywhere, and Blue Prism are the three most promising providers.

i. UiPath

UiPath, which was established in Romania in 2005, has become the industry standard for robotic process automation (RPA). The company employs about 3,100 individuals across its 19 international locations. UiPath has filed a secret draught registration statement with the U.S. Securities and Exchange Commission for an IPO with a value of $20 billion or more (Saikat Ray et al., 2020). This was done on December 17, 2020. After receiving $750 million in Series F fundraising on February 1, 2021, UiPath reported a post-money value of $35 billion (Katie Roof, 2020). UiPath's technological capabilities include an automated desktop, online application, flexible virtual terminal, cloud environment hosting method, robust customization, and integration. UiPath studio, a design environment that allows for both codeand graphical programming, and UiPath robot, a development and deployment platform, are the two primary offerings now.

According to Yucun Wang (2021) UiPath's primary RPA use cases centre on business operations including accounting, procurement, human resources, and customer support. Software authorization, partners/agents based on customers' real circumstances, and delivery/implementation form the backbone of the company's business strategy. UiPath is supported by an active and helpful community of trainers. There are related courses offered at

colleges, publications written on the subject, and a top spot-on Deloitte's North American high tech 500 for 2019.

ii. Automation Anywhere

Automation Anywhere (AA) started in 2003. With revenues of $130 million and a post-investment valuation of $2.6 billion, it was valued at $550 million in 2018 by the Softbank vision fund. In 2019, AA employed about 2400 people in various locations throughout the globe. It has established a presence in major metropolitan areas such as Hong Kong, Taiwan, Beijing, Shanghai, and Shenzhen, and has offices in more than 40 countries. AA developed the Automation Anywhere Robotic Interface (AA-Robot) in 2020 to serve as a digital assistant for the purpose of automating internal processes(Mary Ann Azevedo, 2021). Weare pleased to announce the release of AA's cloud-native RPA platform, accessible over the web. Product distribution, operation, and upkeep are all handled digitally. According to their specific requirements, businesses may implement a hybrid local/cloud deployment. The "rpa- as-a-service" stage may be achieved when workers within an organisation can launch RPA robots from any web browser or mobile device.

Over 3500 unique companies from over 90 different nations were being supplied by AA as of November 2019. Financial services and banking, manufacturing, healthcare, retail, and human resources are just few of the industries it serves as its primary clients.

iii. Blue Prism

Founded in 2001, Blue Prism (BP) announced in 2016 that company had gone public on the London Shares Exchange and raised £100 million (about $130 million) by issuing additional stock (ET Bureau, 2021). In 2020, BP was working with 2,031 different businesses all around the globe. In his capacity as BP's CEO, Jason Kingdon boasts, "We created 46% increase in revenue, acquired £180m in client commitments, kept 98% of customers by revenue, and decreased adjusted EBITDA loss by 47%" (Ron Miller, 2019).

Aimed for major corporations, Blue Prism is a computerised labour management and control software with a "centralised" design. Business owners and managers rely on it to optimise the allocation of resources and the effectiveness of mission-critical operations.

2.5.3 Adoption of Robotic Process Automation in Major Industries

Numerous sectors, from banking to utilities, are embracing RPA. As it is, it is most prevalent in support roles across industries, including finance, manufacturing, retail, supply chain, HR, and CS. Administration and reporting, customer assistance, data transfer and capture extraction, analysis, and others are subcategories of the application criteria (Blue prism, 2020). The research summed up the procedure in the dominant sector that is now benefiting from RPA adoption. Table 1 displays various businesses using RPA within each industry.

Banking	Insurance	Telecom	Retail	Logistics
Get to know your clients	Intake and Handling of Claims	Checking applicants' credit records	Classifying Products	Information Management Systems Documentation
Transactions involving loans	Reconsideration of Appeals	Replacing a SIM Card	Computerized refunds	Shipping Status Reports
Initiation of Trades	Addressing interrogations from a spouse	Settlement of Complaints from Customers	Advertising campaigns	Process of Taking Orders
instantaneous wire transfers	Application Form	Customer Number Portability	Management of the supply chain	Accounting and Finance
Account Deactivation	Renewal of Premiums	Production of Reports	Internet-based product sales	Managing Records
Audits	Reducing risks	Direct transmission of queries	Monitoring stock levels	Relationship with Customers

Table 1: Application of Robotic Process Automation (RPA) in Multiple Sectors

2.6 RPA Adoption in Logistics and Supply Chain

Many freight forwarding companies are seeing a decline in profit margins, prompting their CEOs to search for methods to boost top-line revenues, such as by providing additional,

high-priced services, or to decrease expenses elsewhere in the business. Manufacturing outsourcing has reached its current stage of development because to reductions in transportation costs and enhancements in cross-cultural communication channels such as the Internet. Because of this, the most well-known companies in the world may take use of low-cost labour to produce their goods. As a result, these nations were able to invest more in their education systems, which in turn paved the way for the rise of new service industries like contact centres and IT development hubs. Business process outsourcing (BPO) refers to the practise of contracting out IT-enabled business operations to an outside vendor (Mani et al. 2010).

To take advantage of this cheaper service workforce, several big freight forwarders, also known as logistics service providers, established BPO centres of excellence. If you need someone to make a bill of lading or monitor a cargo, but you don't want to spend $10 to $20 an hour, consider hiring someone in India, Malaysia, or the Philippines instead (Sullivan & Simpson, 2021). However, many SMB logistics firms lacked the necessary scale to outsource their documentation job, while others operated in a too dispersed, loosely linked manner. Automation and digital workflow optimization are increasingly becoming a legitimate option to outsourcing to a nation with a reduced labour cost as these businesses, in particular, aim to cut operating expenses.

2.6.1 RPA as a Solution towards Logistics and Supply Chain Industry

As the trend toward digitization spreads across the corporate world, automation has emerged as a key component. Although there are other types of automation, this article will focus on robotic process automation (RPA), a cutting-edge technique that is generating considerable buzz in the logistics sector. By its own definition, the Institute for Robotic Process Automation describes RPA as "the use of technology that allows enterprise personnel to develop computer software or a 'robot' to gather and interpret existing applications for processing a transaction, modifying data, triggering responses, and linking to other digital systems" (Institute for Robotic Process Automation 2020). Previously unaffordable industries can now automate, according to studies of RPA's deployment (Barnett 2015). 10–19% of the cost of a full-time employee (FTE) in-house, 33%–50% of the cost of an FTE at a distant location, is the cost of a virtual RPA robot worker (Prangnell and Wright 2015; Slaby 2012; Willcocks et al. 2015). These prices suggest significant savings are possible when compared

to the current way businesses are run. In light of the difficulty of fully automating white- collar documentation tasks, this chapter will focus on how RPA might be used in such a way as to overcome this obstacle.

It is important to define RPA and discuss its potential applications inside a global logistics firm before going into the topic further. A logistics company's huge staff of clerks may be tasked with drafting various documents, including bills of lading and invoicing. Such papers are often crafted by reusing information from existing client files. By mimicking the actions of these clerks, a well-trained piece of automated technology may potentially take over this job. RPA bots, in particular, function at the display layer of the system and mimic human behaviour by clicking and typing (Slaby, 2012). Robotic process automation (RPA) bots may operate on top of preexisting software or systems, such as a Windows desktop or SAP's enterprise resource planning (ERP), or they can operate independently of them (Aguirre and Rodriguez, 2017). This makes it possible for the bot to function on several platforms, decreasing the number of integrations and the likelihood of interference with the system's logic. Robotic process automation (RPA) bots are more like human workers and need less technical expertise from their operators than traditional system-to-system automation (Asatiani and Penttinen, 2016; Slaby, 2012).

2.6.2 Taking RPA into Account: Process Considerations

Since most small and medium-sized businesses (SMBs) lack the necessary scale to realise the benefits of automating these types of rote and repetitive processes, they are unsure of the return on investment (ROI) for having the bot developed by one of the 20+ RPA providers. In order to save costs and improve efficiency, businesses should divide regulatory-based operations that need close monitoring into their own distinct departments (Lowers et al., 2016). With so many moving parts and people involved in almost every overseas shipment, it's hard to know exactly how many jobs will need to be completed. Due to system failures, form modifications, different documentation formats, and so on, RPA systems need to "learn" like people. In spite of this, there is a present deficiency in technological competencies (van der Aalst et al., 2018). The objective of "continuous improvement" is held by many large logistics companies, and automation makes operations more efficient while also allowing for regular monitoring. It's not always obvious, but there is a price tag associated with "monitoring" operations in the context of an RPA bot, as you'll need

knowledgeable employees or consultants to make sure everything is running well. You will need to spend heavily in order for your bots to learn your business' processes and carry them out automatically, on top of the time and money you now devote to monitoring them.

2.6.3 Centre of Excellence as a Leader of RPA

Many international logistics companies have moved overseas to take advantage of tax breaks and other advantages offered by nations like China, India, the Philippines, and Malaysia for investing in information technology. Considering that human labour would represent the most significant drop in input for these facilities, labour cost arbitrage is crucial to the success of these enterprises. It's easy to see how technology, especially robotic process automation, may render BPO obsolete, what with rising labour costs and greatercompetitiveness of the aforementioned nations in terms of available talent (Casale, 2014). To achieve this goal, RPA must reduce not only the financial cost but also the technological complexity that may not yet be available. It is important to factor in economies of scale when assessing RPA and BPO operations, since the upfront costs of constructing or training a bot may be higher than those of training a person to perform the same task. Business process outsourcing (BPO) companies with strong customer relationships may be best positioned to pioneer RPA implementation (Hallikainen et al., 2018). One possibility is to include your BPO workers into an RPA project team.

2.6.4 Impact of RPA on Logistic and Supply Chain Industries

i. Management by Exception for Delays or Changes to the Shipping Schedule

According to Adeogun (2021) Robotic process automation (RPA) in supply chain management is useful for shippers since it allows for instantaneous notification of management of any modifications to the delivery schedule. Delays caused by schedule shifts may be very costly for businesses and may even result in a loss of customers. TechTarget.com suggests that "RPA might improve supply chain management and logistics by automating repeated time-consuming procedures like data entry," which would lead to more efficient workflows. Bots, or autonomous software robots, are used in robotic process automation to transfer information between programmes. The integration of this application

improves communication and transforms logistics, hence reducing significant dispute between shippers, carriers, and management.

ii. After-Sales Service to Handle Customer Needs

Adeogun (2021) stated thatAfter the sale, robotic process automation (RPA) serves another crucial purpose in supply chain operations. Customers are followed up with by after-sale support to make sure they are happy with everything, even the delivery. When using this service, clients have a simple avenue to get their opinions heard. If there are any problems, the clients may get help right away. By promptly responding, the organisation can better serve its customers.

iii. Automation of Data Entry

Logistics managers may save time and energy by using automated data input to streamline their operations. Logistics automation, such as RPA, may improve the efficiency of the upstream supply chain by eliminating time-consuming routine procedures that might take up important resources, particularly during peak seasons. The use of robotic process automation (RPA) to manage these tasks will improve the effectiveness and efficiency of supply chain services. Time is wasted when it must be spent manually entering consumer information. In addition to reducing administrative burden, automated systems may keep track of previous orders and provide that information to shippers without any more intervention (Adeogun, 2021).

iv. Enabling Order Management

Using RPA in supply chain operations paves the way for more streamlined order management in addition to automating back-office tasks. Manual operations are prone to inefficiency, which may result in misplaced documents, slowed processing times, and even missed deliveries. Substandard order processing might prohibit timely shipments. As a result of the domino effect, shippers may lose business, and logistics providers and freight forwarders may lose shippers (Adeogun, 2021).

v. Identifying, Implementing, and Continuously Optimizing Network Processes

Order fulfilment, multi-mode shipping, vendor verification, and the identification of supplementary requirements may all benefit from RPA's efficiency gains. Efficiency, however, extends beyond just the act of implementation. Continuous, proactive, and preventive maintenance for network activities, as well as continual route optimization coupled to other systems of record, are all made possible by incorporating RPA into supply chain processes (Adeogun, 2021). Also, software requires monitoring so that problems maybe found as soon as they appear. Management and other users will need to put in effort to guarantee the right care and maintenance of their solutions, such as when using these procedures to reorder goods or consolidate communications.

vi. Increase Efficiency with RPA in Supply Chain Processes Throughout Your Network

When it comes to supply chain procedures, RPA takes care of everything from administrative errands to customer care once an order has been fulfilled. By modernizing the network's software bots, many supply chain specialists will be able to handle the infuriating and perplexing aspects of shipping more easily. (Clint Boulton,2018) To get started with RPA Labs, just request a demonstration.

2.7 Challenges of RPA

I. Expecting quick management approval. We assumed that at the very least upper management would be enthusiastic about the new RPA program given the chance to save money and increase productivity. Clearly, we were wrong. It came as a surprise to us that there was some pushback from upper management, even as we encountered reluctance from frontline employees who were afraid of losing their jobs. Some executives, it seems, believe that it is the responsibility of the RPA owner to assess future possibilities for automation of other process stages (Fantina et al., 2022).

II. Trying to automate the whole process when just a subset of it can be effectively automated. Multiple stages in a process may be tedious and time- consuming to do manually, but this does not always indicate that they can all be automated right now. While it may be the dream of the company owner, a fully

Automated processes are often impractical. Don't forget that by automating even a little portion of a process, you may improve efficiency, save costs, and delight customers. You should evaluate the time savings of automating the whole process you have sketched out, and if just a portion of the process can be automated and still provide desirable outcomes, then you should automate only that portion. Get on board with the company (Storozhuk et al., 2022).

III. Failure to get enough background info. Even though we helped the requesters fill out the form, we missed details sometimes. In the future, we'll be able to avoid that problem thanks to our revised form, but please keep in mind that the requestor may not provide all the facts we need. Experts in the field should be consulted becausethey know the ins and outs of the process, not just what the paperwork says it should be. Most of the time, they don't match up very well with one another (Kamal Goyal et al., 2022).

2.8 Empirical Literature Review

(Sullivan, 2021) conducted a study in which the role of Robotic Process Automation (RPA) in logistics stated that the Internet and other global communication technologies have contributed to a rise in manufacturing's trend of outsourcing. This allowed the world's leading corporations to have access to inexpensive factory labor. Therefore, these developing countries should invest more in their educational systems, creating opportunities in fields likecontact centers and IT development.

(Tashrifa & Shadman, 2017) found that an example of the Fourth Industrial Revolution's democratization of non-IT professionals is RPA technology, which will allow users to accomplish more with their current systems at an affordable rate, as shown by the rise of RPA. The twenty-first century should have shown far more of what Peter Drucker referred to as knowledge work, where non-routine, cerebral activity is driving the global corporate world's economic growth and value creation. In order to free up human knowledge workers from monotonous, repetitive jobs and assist the logistics business in exploring new areas of innovation, using automation will be critical. RPA might be a good place to start for logistics organisations across the world that are scrambling to locate their first digitalization pilot projects.

(Kaushal & Kumar, 2014) in their research on the Impact of Automation Technology on Logistics and Supply Chain Management discussed about the Automation technology utilised in logistics and supply chain management, including newer technologies such as automation with automated identification of goods and objects, is the primary focus of paper's findings on The article also covers the influence on logistics and supply chain management of automation technology and the challenges of applying automation technology. In order to gather information on different advances in logistics and supply chain management technologies, the author primarily employs primary and secondary data from both primary and secondary sources. Technology has a critical role to play in improving the competitiveness and performance of the supply chain by enhancing its logistics system.

(Yucun Wang, 2021) carried out a study Applying Robotic Process Automation in the Banking Industry. This thesis examines robotic process automation (RPA) in depth, offering concrete recommendations for implementing RPA in banking environments. The research gives a case study of a bank that has integrated RPA, quantifying the cost savings and efficiency gains that the bank has seen as a result of using RPA. The research does not only focus on the positive aspects of RPA, but also details the possible drawbacks and offers effective solutions to such problems.

2.9 Theoretical Framework

Technology Acceptance Model (TAM)

Davis (1986) claims that TAM may be seen in his PhD dissertation's figure 1. Taking the Theory Reasoned Action (TRA) model, which seeks to describe how IT is used in different contexts and workplaces and adapting it to the realities of today's technology led to the development of the TAM model. According to both the Theory of Action Motivation and the Theory of Reasoned Action, therefore, human behavior is driven by the goal of achieving that behavior. This is noteworthy since people's actions are often entwined with their larger goals and values (Davis, F. D., 1989). The fundamental TAM model centered on two key beliefs established by Lai, P. (2017): perceived usefulness (PU) and perceived easeof use (PEOU) (PE). Therefore, these two aspects are included as technical drivers in this study, since they affect the RPA implementation in various industries.

To better forecast the behavior of and provide a theoretical explanation for the effective application of technology, TAM set out to illuminate the mechanisms behind such acceptance. The use of TAM was to educate professionals about potential precautions they may take before introducing new technology. Several procedures were used to achieve the goals of the theory

(Davis, 1989; Davis, 1993). By outlining the procedures that mediate the connection between IS features (external variables) and actual system usage, Davis laid the groundwork for the creation of the model of technology adoption. There was a need for a model like this in the IS literature, and the missing piece was the Theory of Reasoned Action, which offers a psychological viewpoint on human behavior (Davis, 1989; Davis, 1993).

The second phase included figuring out which variables best describe system use and validating these measurements. Multi-item measures for perceived ease of use and perceived usefulness were designed, pre-tested, and validated in many studies based on past empirical research on human behaviour and the management of information systems. Previous studies provided support for the idea that these two factors were crucial in determining users' willingness to embrace a new product or service (for example, see (Johnson & Payne, 1985; Payne, 1982; Robey, 1979). According to the findings, a person's choice to engage in a certain behaviour is influenced by how much they stand to gain from the action in comparison to the costs and efforts involved (Johnson & Payne, 1985; Payne, 1982). That is to say, the information system's adoption is based on users' assessments of the benefits and drawbacks of their involvement with it (Davis, 1989). The perceived utility of a technology was defined as the degree to which a person believes its usage enhances performance. Bandura's idea of outcome judgement, in which one's anticipation of a favourable result motivates action, provided the inspiration for this concept (Bandura, 1982).

The Technology Adoption Model (TAM) states that there are three stages to the technology acceptance process. First, an external element (system design characteristics) triggers a cognitive reaction (reported ease of use and perceived utility) (Davis, 1989; Davis, 1993). Transtheoretical Model (TAM) Behavior is the result anticipated by the perceived ease of use, perceived usefulness, and behavioural intention (Figure 1). The confidence that a behaviour will provide desirable results and the assurance that it won't be time-consuming are both captured by the notion that a behaviour is "easy to employ" and "useful" (Davis, 1989). An attitude toward behaviour, which is an emotional assessment of the possible outcomes of the behaviour, may stand in for behavioural intention, according to follow-up research (Davis, 1993). (Ajzen, 2011).

Positive emotional reactions predict future behaviour. Perceived usefulness may have an immediate impact on actual usage, highlighting the significance of this factor in forecasting behaviour. Perceived ease of use indirectly influences use behaviour because it supports the impact of perceived usefulness (Davis, 1993). An application's ease of use is correlated with its perceived usefulness to the user and, by extension, its likelihood of fostering widespread

adoption, as shown by the model (Davis, 1989; Davis, 1993). Tremendous theoretical contributions and significant practical usefulness have resulted from the creation of the model and metrics for technological adoption. Due to a lack of validated subjective measurements, evaluating users' desire to embrace a variety of technologies has previously been impossible until the model for assessing IS usability was used (Hwang, 2005; Gefen, Karahanna, & Straub, 2003; Arajo, & Casais, 2020). Understanding the cognitive and emotional aspects governing the influence of system features on technology adoption was made feasible with the establishment of constructs having a strong and substantial association with usage behaviour (Davis, 1989).

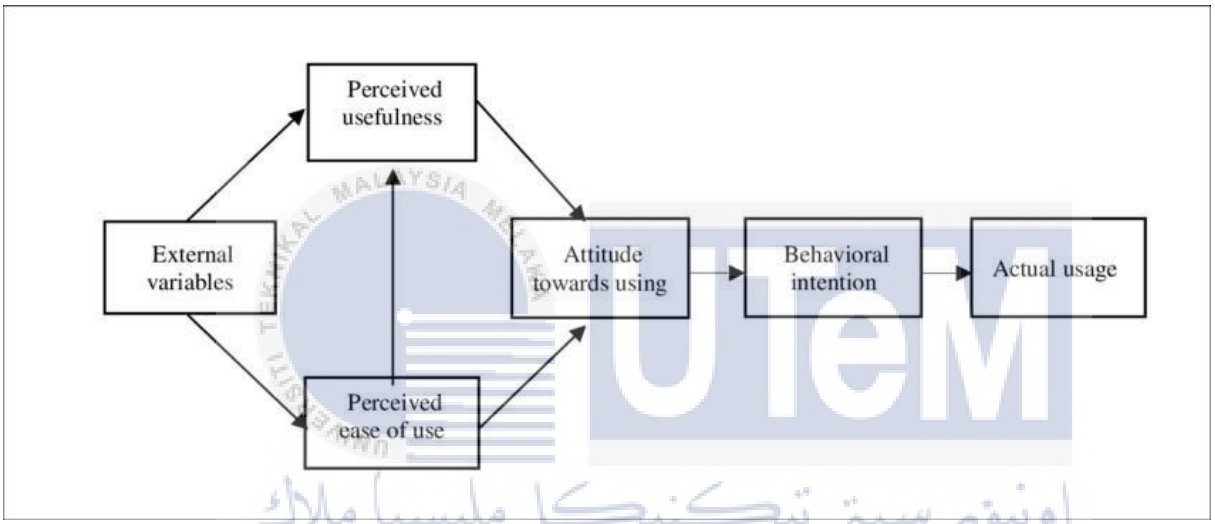

Figure 1: Technology Acceptance Model (TAM) [Source: Davis, F. D., (1986)]

Technology extension model (TAM 2)

After the original TAM was developed, studies investigating the connection between organisational adoption of technology and company productivity continued to take precedence (see, for example, (Goodhue & Thompson, 1995; Davis, Bagozzi, & Warshaw, 1992)). Technology Acceptance Model (TAM) has been widely used, proving the theory's sturdiness. However, the model's creators still want to improve TAM's predictive capacity. Reason for the expansion of the model was a lack of information on the factors that influence how people think about and utilise technology. Effect size analyses showed that perceived utility was the most important factor in predicting future behaviour change (Venkatesh & Davis, 2000). However, research about the components that drive the impression of technological utility was lacking in the literature. While it has been suggested that users' impression of utility and simplicity of use predict intention (Venkatesh & Davis, 1996), more research into the factors that shape these

attitudes is necessary to fully grasp acceptance and to give suggestions for the creation of systems. The goal of this study was to provide a general framework for understanding and foreseeing the adoption of technology in business contexts by examining the most important antecedents of perceived usefulness. In 2000, (Venkatesh and Davis).

When TAM2 was released, the picture construct was the second new idea. "the degree to which usage of an invention is considered to boost one's standing in one's social system," as described by Moore and Benbasat (Moore & Benbasat, 1991). Rogers's Theory of Diffusion of Innovation provided the inspiration for this term (Mahajan, 2010). According to TAM2, there is a causal link between subjective norm and appearance. This correlation was found when researchers found that those whose social standing was important followed the recommendations of their peers (Pfeffer, 1992; Chassin, Presson & Sherman, 1990). TAM2 also postulates that there is a positive correlation between appearance and how helpful an item is thought to be. To "obtain membership and the social support that such membership gives, and maybe goal accomplishment which can occur only via collective action or group membership," it is necessary for a person to behave in ways that are deemed acceptable by the group's standards (Pfeffer, 1992). So, according to TAM2, having a good reputation among friends may boost how others see the usefulness of technology in the workplace (Venkatesh & Davis, 2000).

A person's sense of usefulness is influenced both directly and indirectly by their job's relevance (Venkatesh & Davis, 2000). One definition of work relevance is "the degree to which the person believes the target system is appropriate to his or her job." Various theoretical models that try to explain why people would use a certain piece of technology in the workplace all point to the direct influence of job relevance. The proposed link between occupational relevance and perceived usefulness is based on the task-technology fit and cognitive fit theories (Goodhue, 1995; Vessey, 1991). It was hypothesised that output quality moderates the relationship between work relevance and feeling helpful (Venkatesh & Davis, 2000). Quality of results is how well a job is thought to have been accomplished by using technology. While previous research has confirmed a direct and personal relationship between output quality and perceived usefulness (Davis, Bagozzi, & Warshaw, 1992), TAM2 proposes that higher output quality increases the likelihood of a positive perception of technology by improving the judgement of the technology's relevance for the task at hand (Venkatesh & Davis, 2000)

Therefore, Davis' model may be used to quantify how an extrinsic environmental feature (the existence of other devices on the network) affects perceived ease of use (PEoU) and perceived usefulness (PU) in describing or influencing attitudes and behaviours about information technology. To properly grasp the impact of TAM on the customer's intended usage, it's important to consider customers' perspectives, especially with regard to their perceptions of the product's usability and value (Albayati, H., et al, 2020).

TAM2 may explain for between 37% and 52% of the variation in use intention, and 60% of the variance in perceived usefulness, according to empirical testing of the newly presented model (Venkatesh & Davis, 2000). The hypothesis has added to the body of work the elements that shape how we understand technology. It filled a need in the literature by investigating the elements that influence perceived utility in addition to those that influence perceived ease of use (Venkatesh & Davis, 1996). The TAM extension provided a thorough account of the key determinants of judgement about the usefulness of technology by incorporating both social influence factors (such as subjective norm, use voluntariness, and image) and cognitive factors (such as evaluation of job relevance, result demonstrability, output quality, and perceived ease of use) (Venkatesh & Davis, 2000).

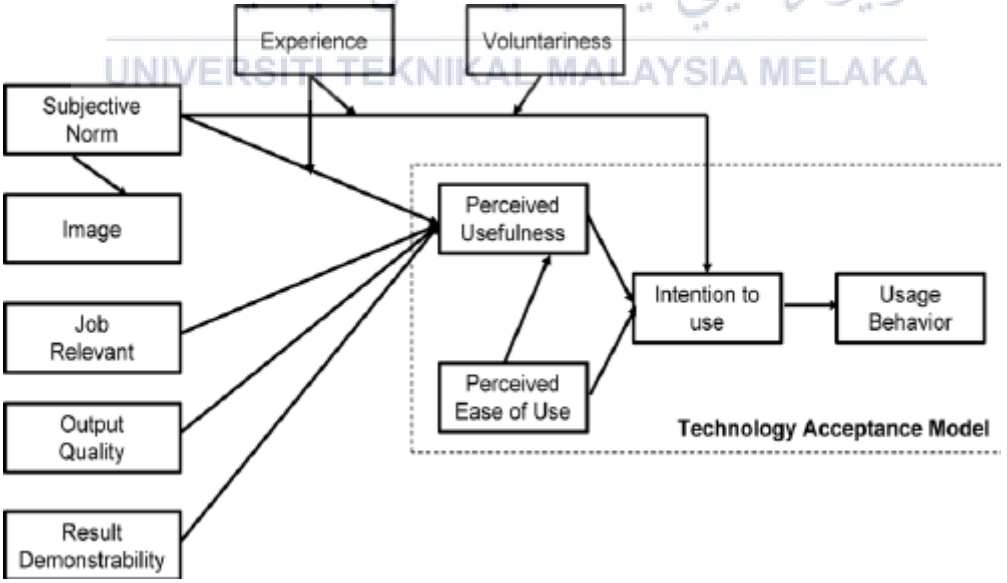

Figure 2: Technology Acceptance Model 2 (TAM) [Source: Davis, F. D., (1986)]

Technology extension model (TAM 3)

Key drivers of use intention had been explained in depth by TAM, TAM2, and other findings (Davis, 1989; Venkatesh & Davis, 2000; Venkatesh & Davis, 1996). Even still, studies of treatments meant to boost the pace at which new technologies are adopted were few and few between (Venkatesh & Speier, 1999). For this reason, Venkatesh, and Bala (Venkatesh & Bala, 2008) combined the antecedents of perceived usefulness and perceived ease of use in a single model and investigated the relationship between antecedents and perception variables to exclude cross-over effects, as TAM was criticised for providing few actionable guidelines to practitioners (Lee, Kozar, & Larsen, 2003). By taking this tack, we hoped to provide a nomological network that would adequately explain the spread of technology. To clarify the research, which had been discordant in terms of the predictors of the two perception components, the authors theorised different impacts of variables on perceived usefulness and perceived ease of use (Agarwal & Karahanna, 2000; Venkatesh & Davis, 2000).

The expanded theoretical framework is shown in Figure 3, and it posits that a person's behaviour may be anticipated by their behavioural intention, and that behavioural intention is supported by the antecedents of perceived utility and perceived ease of use. Considerations such as subjective norm, image, work relevance, output quality, and demonstrability of results have not altered since TAM2 (Venkatesh & Davis, 2000). Direct determinants of perceived ease of use were included into the model, and these include self-efficacy, perceived external control, computer anxiety, playfulness, perceived pleasure, and objective usability (Venkatesh & Bala, 2008). Evidence on human decision making provided the inspiration for include these precursors. Two groups of factors—anchors and adjusters—make up the antecedents of perceived ease of use. Anchoring factors influence users' first impressions of an information system's usability, whereas adjustment factors take hold once users have had some hands-on practise with the technology (Venkatesh, 2000). Anxiety, self-efficacy, a sense of external control, and a sense of play are the anchoring variables in computer use. Users' confidence in technology and their ability to effectively use it are reflected in the first three pillars (Venkatesh & Bala, 2008).

Users are categorised in terms of their level of apprehension or fear when it comes to

using technology (Venkatesh, 2000); their confidence in their ability to complete a task with the help of the technology (Compeau & Higgins, 1995); and their confidence in the availability of the necessary organisational and technical resources to facilitate system use (Venkatesh et al., 2003). "the level of cognitive spontaneity in microcomputer interaction" is the technical definition of computer playfulness (Webster & Martocchio, 1992). It's a symbol of the pleasure and satisfaction that get from working with computers. Perceived pleasure and objective usability are two of the elements that may be adjusted. They evaluate how easy or difficult it is to use information systems for certain activities and how much fun they are to use (Venkatesh, 2000). The third iteration of the Technology Acceptance Model (TAM) also adds three additional experience-based moderating effects on the correlations between a) computer anxiety and perceived ease of use, b) perceived ease of use and perceived utility, and c) perceived ease of use and intention to use. While developing TAM2, it was not possible to determine how familiarity with the system would affect its sense of ease of use (Venkatesh & Davis, 2000).

TAM3's ability to describe how people utilise information systems or their plans for doing so has been shown to be rather solid. The model explained around 36% of the variation in actual behaviour, and between 40% and 53% of the variation in intent to act (Venkatesh & Bala, 2008). Like TAM2, which accounted for 37%-52% of the variation in use intent, this model was able to explain a large proportion of the observed variation (Venkatesh & Davis, 2000). Nonetheless, the extension's strongest feature is the creation of a behavioural model of the variables that precede both perception and cognition (perceived ease of use and perceived usefulness). This presents a comprehensive range of situations in which technological adoption is most likely to take place. TAM3 provides a thorough list of interventions that have direct consequences for IT adoption and management decisions by outlining the links between antecedents, perceived ease of use, and perceived usefulness (Venkatesh & Bala, 2008).

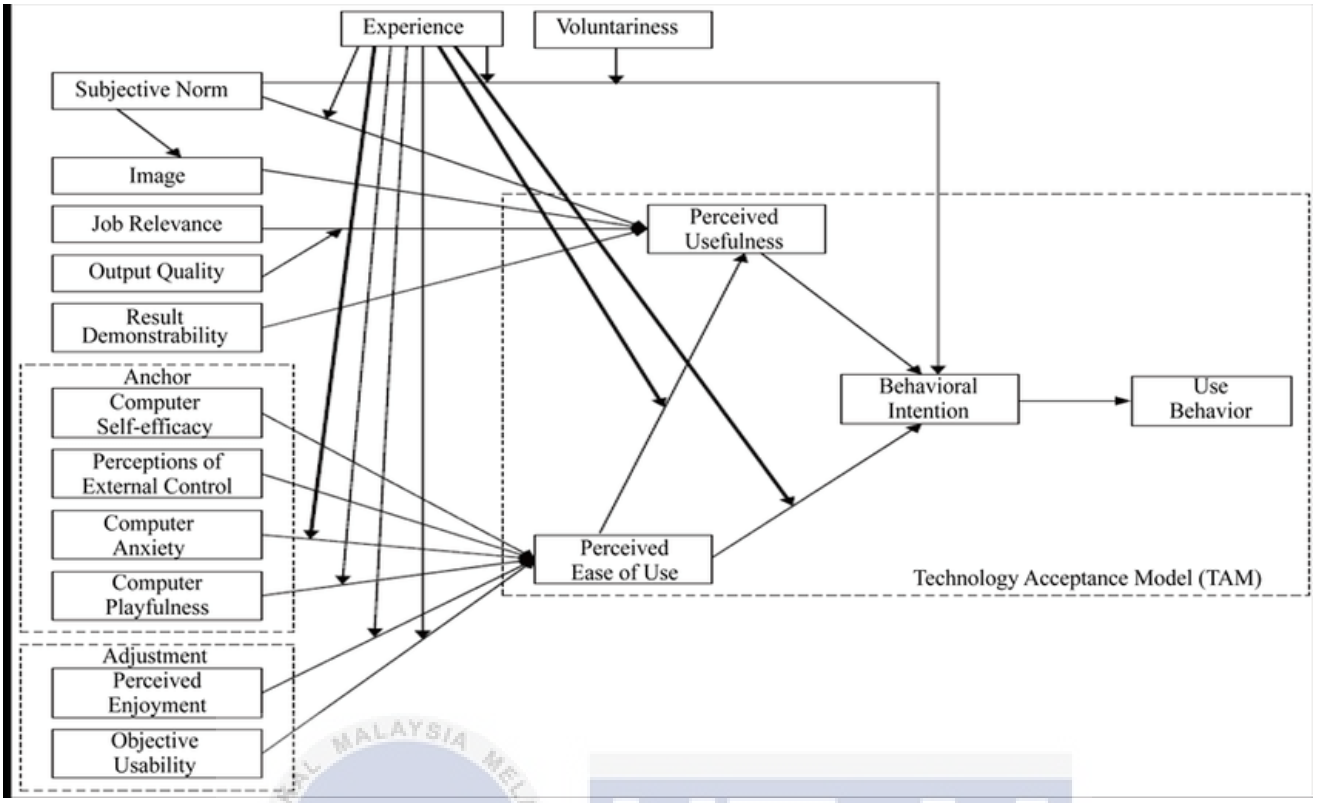

Figure 3: Technology Acceptance Model 3 (TAM) [Source: Davis, F. D., (1986)]

External Variables in TAM

i. Image

In the context of technology acceptance model (TAM), "image" refers to the perception or belief that using a particular technology will enhance an individual's prestige or status within their organization or among their colleagues and superiors. This perception can play a role in shaping an individual's attitudes towards technology and their likelihood of adopting it.

ii. Job Relevance

Job relevance in Technology Acceptance Model (TAM) refers to the extent to which an individual perceives that using a specific technology is important for their job performance and responsibilities. It is a measure of how well technology aligns with the tasks, goals, and objectives of the job, and how well it supports the individual's work processes. The more relevant an individual perceives a technology to be to their job, the more likely they are to adopt and use it. This construct is typically measured using self-report surveys or questionnaires.

iii. Output Quality

Output quality refers to the level of accuracy, completeness, and effectiveness of the output or results produced by a technology. In the context of Technology Acceptance Model (TAM), output quality would be considered as a key factor in determining an individual's perceived usefulness of a technology. Technology that produces high-quality output would be perceived as more useful by the user, as it would help them accomplish their tasks more effectively and efficiently. Conversely, a technology that produces low-quality output would be perceived as less useful and less likely to be adopted.

iv. Result Demonstrability

Result demonstrability in Technology Acceptance Model (TAM) refers to the extent to which the user can see or measure the results achieved by using the technology. It is a key factor that affects the perceived usefulness of the technology, as users are more likely to adopt a technology if they can see that it is producing results that are beneficial to them. This includes, for example, being able to measure the time saved, the increase in productivity, or the reduction in errors. The result demonstrability of a technology can be influenced by factors such as the quality of the technology itself, the user's ability to use it, and the availability of support or training.

v. Computer Self efficiency

Computer self-efficiency in Technology Acceptance Model (TAM) refers to the extent to which a person believes that using a particular technology is easy to use and understand. This construct is a key determinant of a person's acceptance and use of a technology. A person who perceives a technology to be easy to use and understand is more likely to adopt and continue to use it, whereas a person who perceives a technology to be difficult or confusing is less likely to adopt or continue to use it. Factors that may influence a person's perception of a technology's ease of use and understandability include the technology's design, user interface, and the availability of training and support resources.

vi. Perception of External Control

Perception of external control refers to the extent to which an individual feels that the technology is being controlled by external factors, rather than by the individual themselves. This can include things like the technology being controlled by a central authority or by another person. A low perception of external control would indicate that the individual feels they have a high degree of control over the technology, while a high perception of external control would indicate that they feel they have little control over it. This perception can have an impact on an individual's acceptance and use of technology.

vii. Computer anxiety

Computer anxiety refers to the feeling of unease or discomfort that an individual experiences when using a computer or other technology. This can manifest as physical symptoms such as increased heart rate and sweating, as well as cognitive symptoms such as confusion, difficulty concentrating, and a feeling of helplessness. Computer anxiety can be caused by a lack of knowledge or experience with technology, fear of making mistakes, or concerns about security and privacy. It can negatively impact an individual's ability to use technology effectively and can be a barrier to the acceptance and adoption of new technologies.

viii. Computer Playfulness

Computer playfulness refers to the enjoyment and interest a person has towards using a computer or technology for leisure or non-work related activities. It is a personality trait that can influence how a person perceives and interacts with technology, as well as their likelihood of engaging in playful activities with technology, such as playing games or experimenting with new software. In the context of the Technology Acceptance Model (TAM), computer playfulness can affect a person's perceived ease of use and perceived usefulness of a technology, as well as their overall attitude towards it.

ix. Perceived enjoyment

Perceived enjoyment refers to the subjective level of pleasure or satisfaction that an individual experiences while using technology. It is a measure of how much an individual enjoys using a technology and how much they look forward to using it again in the future. This construct is often used to evaluate the usability and user experience of a technology. Studies have found that perceived enjoyment can be a strong predictor of continued use and adoption of a technology. In the context of the Technology Acceptance Model (TAM), perceived enjoyment is considered to be a key factor in determining an individual's attitude towards a technology and their intention to use it.

x. Objective usability

Objective usability refers to the quantifiable aspects of a technology's ease of use, such as the time it takes to complete a task, the number of errors made, and the number of steps required to complete a task. It is a measure of how well a product or system is designed, and is usually determined through user testing and evaluation methods. Objective usability is often used to compare different products or systems, and to identify areas for improvement.

2.10 Summary

This chapter talks about previous research that has dealt with the same questions as the current study. Previous studies and recommended ways to assist businessesin assessing the potential benefits of robotic process automation have also been presented by researchers. and making progress despite RPA's challenges. The advantages of RPA in the logistics and supply chain sectors are the main topic of discussion.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

Accuracy and accuracy in language are crucial to the scientific approach. However, a scientific and thorough approach would be to look at how much of an influence fresh, high-quality results may have on the field. In-depth descriptions of the methods used to carry out the study are provided here. We can thus roughly estimate how long the study will take. This evaluation relies heavily on a qualitative methodology, which was specifically designed for this purpose. Interviews are a common way to collect information and data for qualitative analysis.

3.2 Methodological Choices

Researchers' worldviews are reflected in qualitative research because of the specific scientific ideas and vocabulary utilized in the study. Researchers utilize qualitative data analysis to examine the findings of numerous procedures that seem to meet a certain methodological framework in general data quality collecting. Education, social sciences, and many other sectors use this kind of study. A detailed grasp of the data collecting techniques and the inferences that may be drawn from the findings is required for this method to be effective.

For discovering new ideas and experiences, qualitative research is employed. Considering the present situation, this will let the researcher examine several pointsof view that share a similar issue. Uses qualitative methods to investigate the link between entrepreneurial leadership style and organizational success.

3.3 Research Design

There are three distinct approaches to doing research. This studytakes an inquisitive, descriptive, and explanatory approach to its research methodology. It is

recommended that research methodologies be used to establish the degree of uncertainty around a study issue (Zikmund et al., 2013). Research as a notion is a methodology for addressing a research issue (Copper and Schindler, 2003).

Designing a study is a methodical process that helps researchers write their studies. The purpose of this is to analyze issues in depth. The questions of what, where, when, who, how, and why are among the most pressing. When planning a study, it's important to consider how and when you'll collect data. As a result, this is what will guide the strategy for gathering data to answer the studies' questions (Abdul Hassan, 2014).

3.3.1 Descriptive Research Design

The researcher has settled on a descriptive research design. Because of the findings of this study, DHL collaborated with UiPath, the market leader in robotic process automation software, to establish a central center for the automation of business processes throughout the globe. The goal was to improve the efficiency of the DGFF's shared-services model by automating routine but crucial internal procedures using RPA and other cutting-edge technology.

Descriptive research tends to focus on what has already occurred. Because recycling methods have been established for some time, this study strategy is appropriate for the topic. It is made up of the syllables "re" (which means "to return again") and "cycle" (which means "to go around in a circle"). (2001–2014, Harper). The purpose of this descriptive study is to identify the opportunities and threats presented by RPA implementation at DHL Malaysia.

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3.4 Primary and Secondary Data Sources

Data gathering is a crucial step in carrying out research investigations. Researchers have a responsibility to ensure the authenticity and trustworthiness of such information. Both quantitative and qualitative approaches may be used to gather information. Both primary and

secondary sources might be used for this purpose (Douglas, 2015). For particular research aims, primary data must be acquired directly, as explained by Salkind (2010). Surveys, in- depth interviews gleaned from time spent in the field, and informal experiments done by the researcher themselves are all examples of the most popular methods. As a result of collecting and analysing this data, new insights, interpretations, and conclusions may be uncovered.

The secondary data collection process for this dissertation is well underway. The study's article and book reviews were based on the researcher's use of academic databases including Emerald Insight, Elsevier, and Scopus. As an added measure, data is being culled from social media sites. Since then, I've been able to answer my research issue with more precision thanks to the information I've acquired from my studies. The investigated data fromsecondary and primary sources throughout the inquiry guarantees the legitimacy and reliability of this investigation.

Data gathering is a crucial step in every research project. In order to assure the authenticity and trustworthiness of such information, researchers must take precautions. There are two broad sorts of data-gathering techniques. Both primary and secondary sources might be used for this purpose (Douglas, 2015). For particular research aims, primary data must be acquired directly, as explained by Salkind (2010). Surveys, in-depth interviews gleaned from time spent in the field, and informal experiments done by the researcherthemselves are all examples of the most popular methods. The value of this source lies in the fact that it may be mined for new insights, interpretations, and conclusions.

The researcher in this study consults both primary and secondary sources for information.

3.5 Research Location

The logistics and supply chain sector is the focus of the study conducted on A Dhl Global Forwarding (M) Sdn Bhd. The venue for the next interview is DHL Global Forwarding (M) in Subang Jaya. The study's subjects were selected because they represent one of the largest supply chain and logistics firms to use robotic process automation (RPA). This is an appropriate research design for a study that is narrowly focused on the RPA- implementating firm.

3.6 Research Population

The researcher plans to interview a convenience sample of DHL employees. The researcher will contact potential participants through email or in person to ask them to spend around 25 minutes answering interview questions. Factors like age, gender, marital status, or ethnicity are not being examined. Knowledge of the interviewee is not as important as other factors. The interviewer will not probe the interviewee with inquiries about the company that might make them feel uneasy or unwelcome. This should set the stage for an open dialogue. The researcher has connections to between fifty and one hundred people who satisfy the study's eligibility requirements, therefore that's how many people they're expecting to participate. Researchers often interview between 5 and 10 people for their studies. Study witha limited number of participants (also referred to as small “n” research) is the standard in qualitative studies. Researcher insight and descriptive depth about participant experience are both enhanced by the limited sample sizes of such investigations (Creswell, 2009; Merriam, 2009).

3.7 Time Horizons

Time frames for longitudinal and cross-sectional investigations are varied. Longitudinalstudies include the collection of information over an extended time frame. Cross-sectional studies are time-consuming since they need collecting data just once. Due of time constraints,a cross-sectional design was employed for this investigation. The study must complete Chapters 1–5 in full within ten months. The time frame for finishing the data collecting and analysis is three months.

3.8 Research Strategy

Eight (8) distinct categories of research methods have been outlined. Experiment, survey, archival/documentary research, case study, ethnography, action research, grounded theory, and narrative inquiry are all types of qualitative and quantitative research methods. Researchers in the fields of finance, accounting, and economics make the most use ofarchival and documentary sources. Management professionals are encouraged to make use of research methods including surveys, experiments, and case studies.

Case studies were used to investigate the advantages and disadvantages of RPA in DHL Malaysia, and the researcher settled on this method of inquiry after refining her research questions and goals. Research into the reason for writing a research paper necessitates a thorough examination of the research questions and goals that will inform the technique chosen.

3.9 Scientific Canon

These are statements on the accepted body of scientific knowledge. In this chapter, we will go further into the concepts of internal validity, generalizability, or external validity and dependability. As mentioned, the scientific code is meant to aid researchers in obtaining trustworthy results and producing relevant study designs. That a tool can reliably measure the things it claims to measure is what we mean by its validity (Sekaran and Bougie, 2016). The capacity of measuring instruments to measure ideas that will be constantly measured is what is meant by reliability. For the sake of clarity, let's define validity as the correctness of the measurements used, and reliability as their capacity to be consistently reproduced, or "replicated," by other researchers (Saunders et al., 2016).

3.9.1 Internal Validity

The degree of trust in the association between cause and effect is a measure of internal validity (Sekaran and Bougie, 2016). The degree to which the study design will support hypotheses about the relationships between independent and dependent variables is a key component of internal validity. The level of experimentation in a study is also a function of the experiment's internal validity. Also, it may help avoid misunderstandings. To guaranteethe study's internal validity, the researcher must keep their investigation inside the confines ofthe study's stated subject, questions, and goals. This study examines the benefits and challenges of RPA in DHL Malaysia. As a result, the study's methodology has to be consistent with the research questions and goals. The following table 2 explains several potential challenges to internal validity that researchers should be aware of in addition to the study questions and aims.

Threat	Definition and explanation
Evaluating	The consequence of the evaluation on the opinions or behaviours of people involved. Participants may change their behaviour or thoughts during the research if they fear it will have a negative impact on them in the upcoming. As a result of this, the researcher informed the participants that this study is just for educational reasons and is not meant to be used for any other intention. Aside from that, the goal of this study is to identify the most effective ways for aiding a paper recycling company in overcoming obstaclesrather than uncovering the firm's flaws, faults, or undesirable aspects. In lightof this, the study didn't set out to assess whether or not participants would share confidential details. In addition, all responders can stay anonymous in the dissertation, where their identities will not be used. This ensures that the interviewees' privacy is respected while they are able to freely express their opinions.
Maturation	Impact of a volunteer's views or behaviours that were not influenced by the research. Individuals involved in training programmes, as instance, may modify their thoughts subsequently in the research. Even before report was released, respondents were advised to notify the researcher if they had changed their minds regarding the questions they had been asked during the interview.
Mortality	Contributors' refusal to participate in studies has a significant impact. During the course of a study, it is not uncommon for volunteers to either depart their employment or get promoted. A depth interview was requested if the first respondent cancels or is no longer able to participate in the study. The additional responder served as a standby for the first one.

Table 2: Threats to Internal Validity

Source: Research Methods for Business Studies (2016)

3.9.2 External Validity.

The extension of the causality findings of the study to the setting, people, or an event is what we mean by "external validity." The low precision in correlation is one of the determinants for external validity. A better understanding of this contextual allows the

researchers comprehend how their findings may or may not be useful to others (Sekaran and Bougie, 2016). Outcomes and findings from the study assist the researcher to highlight the Benefits and challenges of RPA. Throughout the paper, such benefits and challenges may be applicable to all Logistics and supply chain industries, not just DHL Malaysia.

3.9.3 CONSTRUCT VALIDITY

According to the agreement's reliability, outputs from the use of measures conform to the ideas included in the questionnaire that is being conducted (Sekaran and Bougie, 2016). Additionally, the validity of the contract is based on the number of questionnaires used to gauge the scope for access. According to this definition, a contract's validity is determined bythe level of the material evaluated to which it corresponds to the fundamental theory (Saunders et al. 2016).

Convergent validity can be used to evaluate the agreement's integrity. While results from two separate instruments assessing identical idea have a variety of convergent validity. Discrimination validity may also be described as the practical discovery of two variables previously thought to be irrelevant to the theory and subsequent judgments based on their evaluation (Sekaran and Bougie, 2016).

The construct's validity can be strengthened by resorting to outside references or attempted theories to verify the accuracy of the measurements. Analysts may use it as a guideline to keep their eyes upon that big picture by keeping an eye on the broad scope of their work. It is crucial to validate generalisations in order to determine the validity of a theory. However, it is crucial to determine when research addresses the aspects being examined, such as the research question's attributes.

3.9.4 RELIABILITY

Using reliability as a measuring technique, ideas may be evaluated, and the quality of tests examined (Sekaran and Bougiee, 2016). Consistency may also be determined by the reliability of a product (Zikmun et al., 2010). Using the internal reliability of the measure, it is sufficient to analyse how homogeneous each item in the measurement is. Results and conclusions can be considered reliable if other researchers are able to achieve identical results from alternative data gathering methods, similar observations, or roughly similar interpretations. For addition, researchers may be able to replicate previous study designs and

yet get the same outcomes. Table 3 shows that there is a risk to dependability that has to be addressed.

Threat	Definition and example
Researcher error	Some situations that alter the researcher's original findings. As contrast, a researcher who is tired or unprepared might misinterpret the more nuanced judgments of their interviews. The researcher must be engaged and well-prepared throughout the data collection process in order to prevent research misjudgments. It was necessary for the researcher to jot down every word that the study participants said or responded to. As a precaution, the researcher should properly prepare by drafting down the appropriate additional questions during interviews. It was necessary for researchers to reiterate what they'd heard from interviewees afterward. This would be to ensure that outcomes of the researcher are compatible with the participants.
Researcher bias	A certain element of the researcher's documentation of replies that contains biased. As an alternative, a researcher would permit their own personal biases to get in the middle of accurately capturing the replies of respondents and correctly analyzing their findings. Furthermore, bias in research may be overcome if the researcher had an objective view of the subject matter. In no way, shape, or form, could the researcher influence the respondents' thoughts, perspectives, or conclusions. In this manner, the finding and outputs would be accurate, precise, as well as trustworthy.
Participant error	There is everything that can decrease a volunteer's ability. Participant responses may be affected by the timing of an inquiry when contrasted to a less sensitive period, such as shortly before lunchtime (i.e. they may not take care and hurry to complete it). The interview sessions were arranged to prevent the possibility of participant mistakes. This research's interviews conducted were place during the workweek. This is since the people who were picked to react do during regular business hours. Also, as consequence, the researcher can set up meetings with the company's upper management and administrative employees.

Participant bias	Incorrect responses are one of the contributing factors. For instance, the responder was questioned right after finishing a discussion with the boss to address issues at work. An emotional atmosphere is created for the responder to accomplish the interview, which encourages the respondent's emotional response to the question.

Table 3: Threats to reliability

Source: Research Methods for Business Studies (2016)

Researchers are also encouraged to be cautious when scheduling interviews with respondents in order to prevent participant mistakes. The researchers in this study decided to conduct an appointment from 9 a.m. to 3 p.m. on weekdays. Most of those who responded were employed throughout regular business hours. Furthermore, participants can better plan their work by listening to the researcher's interview at the most convenient moment. For the sake of avoiding prejudice, interview sessions or data gathering methods should be conducted attentively. As a result, participants can communicate their thoughts and ideas openly and without compulsion.

During interview session, researchers must be enthusiastic and well-prepared to prevent the risk of making a mistake. Every respondent's thought and replies will be recorded by the analyst. Initial interview, the researcher will get in touch with the subject and ask thema few questionnaires to have a better understanding of the research topic. During the interview, the candidate will only address the questions that are directly related to their experience and qualifications. In addition, when the meeting is complete, the researcher must verify the responses made by the interviewees. This guarantees that the responses obtained from the respondents are accurate with the objectives stated of them.

In possible to lessen study bias, researchers must also prevent presenting viewpoints that are diametrically opposed to the subject matter under consideration. Respondents cannot be influenced by researchers in any way, shape, or form. The information gathered in this manner is based on factual, precise, and dependable data.

3.10 SUMMARY

In this section, the researcher explains the approach taken in conducting the study. To conduct the research, analysis was used to analyze an empirical formula. Paper recycling could be unusual to Malaysia, but it's not unfamiliar to the entire world. Asia Honour Paper Industries (M) Sdn Bhd is a Malaysian company that employs plant fibre in its product offerings and obtains plant fiber through a paper recycling method. Although this fibre is relatively new in Malaysia, this is not so in the global market. Qualitative data were used in this study due to the researchers' methodological approaches in data analysis and acquisition. Qualitative analysis helps researchers to acquire data without bias and perform in-depth analyses.

Furthermore, analysts at Asia Honour Paper Industries (M) Sdn Bhd conducted consultations from several sectors in order to gather important information. To accomplish this study, researchers relied on datasets, particularly referencing papers, journals, websites, and books. For their case study, researchers chose Asia Honour Paper Industries (M) Sdn. Bhd. Analyses and research may be carried out in a realistic environment.

CHAPTER 4

DATA ANALYSIS

4.0 Introduction

In this chapter, the result of the cases study in DHL Global Forwarding (M) Sdn Bhd Malaysia is analyzed. Firstly, the researcher had targeted to conduct the interview session with five DHL Global Forwarding (M) Sdn Bhd Malaysia employee. However due to the time constraint, the researcher only successfully conducted the interview with three employees which are respondent A, respondent B, and respondent C. The objective of this study is to investigate the benefits of Robotic Process Automation (RPA) and the challenges of adopting Robotic Process Automation in in DHL Sdn Bhd Malaysia.

Hence, the result will be presented based on the technology acceptance, benefits of Robotic Process Automation (RPA) and followed by the challenges of implementation Robotic Process Automation in DHL Global Forwarding (M) Sdn Bhd Malaysia.

In this research, data is collected through DHL Global Forwarding (M) Sdn Bhd Malaysia employees by using qualitative research methods. This is because the researcher wanted to understand this study in more detail. Qualitative research method can give a deeper understanding of RPA that the researcher wants to study. The results of the cases study will elaborate further in 2 parts. The first part is about the benefits of implementation Robotic Process Automation (RPA). The second part will be the challenges of adopting Robotic Process Automation.

4.1 Respondent Background

The cases study was conducted by using qualitative research method to conduct a semi-structured interview with three DHL Global Forwarding (M) Sdn Bhd Malaysia employees.

Figure 4: DHL Official Logo
Source:

Respondent A

The first respondent that the researcher interviewed is Respondent A. Respondent A has been working at DHL Global Forwarding Sdn Bhd Malaysia for more than five years. Mr. Norman Hakim is the first respondent I reached. Mr. Norman Hakim has been in the logistics industry for more than 7 years and for the past 4 years he has involved in implementation of RPA in DHL Sdn Bhd Malaysia.

Respondent B

The second respondent that the researcher interviewed is Respondent B. Respondent B has been working at DHL Sdn Bhd Malaysia for eight years. Mr. Syahmi Adli is the second responder that the researcher had the opportunity to interview. As a respondent B, Mr. Syahmi Adli currently works in human resources department at DHL Global Forwarding (M) Sdn Bhd Malaysia located at Petaling Jaya, Selangor. He anticipates having 3 years of expertise in the implementation of RPA in DHL Global Forwarding (M) Sdn Bhd Malaysia.

Respondent C

The third respondent that the researcher interviewed is Respondent C. Respondent C has been working at DHL Sdn Bhd Malaysia for seven years. Mr. Fatihin Maozad is the third responder that the researcher had the opportunity to interview. As a respondent C, Mr. Fatihin Maozad currently works in human resources department at DHL Global Forwarding (M) Sdn Bhd Malaysia located at Petaling Jaya, Selangor. He anticipates having 4 years of expertise in the implementation of RPA in DHL Global Forwarding (M) Sdn Bhd Malaysia.

Figure 5: Interview session with respondent A

4.2 Perceived Usefulness

The researcher had conducted a few interview sessions with the experienced respondents to identify the perceived usefulness of the selected respondents using the selected variables. There are a lot of benefits in the perceived usefulness given by adopting RPA in DHL Global Forwarding (M) Sdn Bhd Malaysia. The researcher found that there are five major benefits of implementing robotic process automation that benefits the selected respondents which are to increase productivity, increase efficiency, reduce errors, and better data analytics.

Perceived usefulness is one of the key factors in the model and is defined as the degree to which a person believes that using a specific technology will enhance their job performance or personal life. It is the belief that a technology will be beneficial to the user and that it will help them achieve their goals. This belief can be influenced by various factors, such as the person's job requirements, personal goals, and the technology's perceived ability to meet their needs.

The concept of perceived usefulness is important in the model because it is believed to be a direct determinant of a person's intention to use a technology. In other words, if a person believes that a technology will be beneficial to them, they are more likely to have a positive attitude towards it and be more inclined to adopt it. Additionally, perceived usefulness is also believed to have a direct impact on a person's actual use of technology.

The researcher believes that perceived usefulness is a key factor that determines whether a person will adopt a new technology or not. It is the belief that using a specific technology will enhance their job performance or personal life and it will be beneficial to them. The more useful a technology is perceived, the more likely it is to be adopted.

Table 4 shows the external variables from perceived usefulness in implementing RPA accepted from the selected respondents that the researcher had interviewed in this research.

RESPONDENT / External Variables	A	B	C
Image			
Job Relevance			
Output Quality			
Result Demonstrability			

Table 4: External variables of Perceived Usefulness accepted by selected respondents.

4.2.1 Job Relevance

Job relevance refers to the degree to which an individual perceives that using a specific technology is relevant to their job performance and job outcomes. Job relevance is considered a key determinant of an individual's perceived usefulness of a technology and their intention to use it. This means that if a person perceives technology as relevant to their job, they will be more likely to find it useful and will have a greater intention to use it.

Job Relevance – Improve job performance.

During the interview the researcher found that respondent A said there are several steps to evaluate the usefulness of RPA according to his job scope. He said the first step is to research the features and benefits of the technology and compare them to my job requirements. Then, asked for feedback from my colleagues who had been using the technology for a while and finally by testing it out on some of his tasks. With that, He founded that RPA could improve his job performance by taking a comprehensive approach to evaluate the perceived usefulness of RPA.

"I took a comprehensive approach to evaluating the perceived usefulness of the technology in relation

to my job tasks and responsibilities, by considering the features, the feedback of my colleagues, my own experience, compatibility, and external references." (Respondent A,2022)

"Firstly, it would allow me to organize my tasks and projects more efficiently" (Respondent A,2022)

"The technology would enable me to collaborate more effectively with my team" (Respondent A,2022)

Meanwhile, Respondent B took a approach different styles to evaluate the usefulness of RPA according to their job tasks. Respondent B analyzes how RPA can improve efficiency and accuracy in the processes he is responsible for and measures how it affects the workload, customer relations, employee engagement and how it can reduce the time spent on manual tasks. He also stated that RPA can improve his job performance by reducing the amount of repetitive and mundane tasks.

"I measure these metrics before and after implementing RPA to assess its effectiveness." (Respondent B,2022)

"This would improve my job performance by allowing me to work more efficiently and effectively. Additionally, RPA can also improve the accuracy and consistency of the work." (Respondent B,2022)

4.2.2 Output Quality

Output quality is a technology's correctness, completeness, and efficacy. In the Technology Acceptance Model (TAM), output quality is a major criterion in assessing a technology's usefulness. High-quality output technology helps users work more efficiently and effectively. Technology that delivers low-quality output would be less beneficial and less likely to be adopted.

Output Quality - Increase in productivity and efficiency.

Businesses today are increasingly using RPA to automate and standardize a wide range of activities, all in the name of greater operational efficiency. Respondent A stated that employee productivity may be increased by using RPA bots to tackle "busy tasks." According to Technology Partner,2021 research shows that these machines can do their tasks anywhere from two to five times quicker than people, with an 80 percent decrease in mistakes. There are a lot of positive outcomes

that might result from this increased output. Expect a 25-50% reduction in costs. Such RPA jobs scale well with the expansion of your business.

Respondent B believes that the most significant benefit of RPA is that it allows workers to devote their time and energy to more meaningful projects that make use of their expertise. Having a more invested staff is good for business eventually. Respondent B stated a result which both employee morale and retention improve dramatically.

Automating manual processes using robots has become more popular because of its ability to boost productivity while also cutting expenses. RPA has a similar influence on digital business operations as physical robots had on the manufacturing production line. Respondent C said that Robotic process automation (RPA) allows for a continuous flow of work even after normal business hours have ended. After the sun goes down, software robots keep functioning, putting off human attention for any problems until morning. Machines have no need for rest or refreshments.

"*This is not something that humans are incapable of doing, but rather something that RPA excels at*". (Respondent C,2022)

Employees can make better use of the time they have by delegating time-consuming work to robotic process automation software robots, which frees them up to focus on more important projects and responsibilities that require creative problem-solving and decision-making.

Respondent B claimed that a contented staff is more likely to work together, exchange ideas freely, and readily transfer information across departments. As trust in team members grows, more time can be devoted to identifying problems, conducting in-depth investigations, applying cross-functional optimization, and to boost customer happiness.

Employees can make better use of the time they have by delegating time-consuming work to robotic process automation software robots, which frees them up to focus on more important projects and responsibilities that require creative problem-solving and decision-making. With the help of RPA, Respondent A stated that individuals and groups are able to radically alter the organizational dynamic by reorganizing work processes. It enables top-level administration to realign everyone's priorities with the team's goals and the company's long-term objectives.

"Robotic process automation (RPA) bots can handle the majority of data input tasks to improve accuracy, efficiency, and security." (Respondent A,2022)

Respondent A portrayed an example in which the end goal for freight management is moving

freight from the point of origin to the destination in the most efficient manner possible. Delivering goods on time, in the correct quantities and at the lowest possible cost are all areas where RPA can help optimize your freight management. Tasks associated with planning optimization can be automated, as can appointment scheduling, load prioritization and consolidation, route optimization and freight accounting.

Finally, tools for robotic process automation (RPA) are potent resources for automating a variety of corporate processes and boosting output. The success of RPA depends on a thorough assessment of the technology's potential and drawbacks, as well as meticulous planning and execution tailored to the specific requirements of the company. Efficiency benefits that result from effectively managing and growing your RPA operations may have a positive effect on both employees and customers.

Output Quality - Better customer experiences

The way a company treats its customers is one of the most important aspects of its approach to the market. Especially if the business is dynamic and its technology is always evolving, this might be a challenging task to do. Respondent B claimed that with the help of RPA technologies, businesses can provide a unified service across all touchpoints with customers. Applications that use RPA software enhance the quality of customer support in several ways. He stated that by reducing administrative and back-office tasks, RPA customer support ultimately enhances client satisfaction. The collecting of data from various systems, the execution of service requests, and the updating of client records are all sped up by software robots.

According to research by Automation Anywhere, workers spend an average of 40% of their time on mundane, manual chores that might be automated with no effort on their part. Respondent A believes that one of the advantages of RPA is that it speeds up the operations and reduces the amount of repetition, both of which contribute to an improvement in the satisfaction and loyalty of consumers. He added that robotic process automation (RPA) produces positive outcomes and improves customer service by allowing personnel to give prompt and consistent assistance while spending less time on each individual instance.

Meanwhile, according to the UiPath 2021 Office Worker Survey, 67 percent of all employees throughout the world are stressed out by routine job. Workplace happiness and increased output are both possible outcomes of intelligent automation of routine chores. Respondent A admitted that employees will have more time to concentrate on giving great service to clients if monotonous tasks can be automated away. It fosters a more upbeat atmosphere at work, which leads to an increase in

output in a shorter amount of time with a greater degree of accuracy and leaves less opportunity for human error.

"In the end, each one of the customers wants to know that they are a priority."(Respondent A,2022)

Conversational artificial intelligence (AI) and other forms of automation help organizations better fulfil customers' expectations by reducing the room for mistakes. Errors made by humans while inputting client data may be avoided with the use of robotic process automation technologies, which also improve efficiency. Respondent C opinion is that RPA solutions provide improved job tracking, knowledge sharing, and consistent service delivery, all which aid personnel in providing superior contact center customer support. He believes reducing the amount of time spent on mundane chores will allow workers to focus on more vital projects.

"*By having robots do routine, repetitive chores like updating customer service requests, businesses can free up employees to concentrate only on interacting with customers and focused more on other vital projects.*" (Respondent C,2022)

Respondent C also said the best way to boost client satisfaction is to answer their questions about your business in real time by presenting them with readily available, accurate information. So, here is where the robots come in. By placing a human-tended robot on the site, businesses may not only capture vital consumer data in real time as they respond to questions about items, but also expand their database. They will only understand that their time is precious to you if you provide them with an exceptional experience. Also, you may achieve all of that and more with the assistance of RPA solutions.

Ultimately, RPA technologies in customer support also reduces the possibility of making mistakes while gathering information, which in turn increases satisfaction levels among customers. Support staff may have more efficient and personable interactions with customers consequently. An IDC white paper estimates that businesses lose upwards of $62.4 million per year due to human error. More than 65 percent of expenditures may be cut using RPA and return on investment can be realized in as little as six months.

Output Quality - Better data analytic

Using RPA, firms may automate mundane and time-consuming operations, allowing workers to focus on higher-level, more valuable work. However, Respondent B stated RPA can do much more than just automate routine operations. It also has the potential to be a game-changer in the field of data analytics. The ability to make sound decisions and maintain a competitive edge in today's data-driven business environment requires the analysis of massive amounts of data. To streamline the data analytics process, RPA may automate data collection, purification, and transformation, and provide real-time insights and analysis.

"Collecting and analyzed data takes lots of effort and time, and it's not always accurate to analyze data by hand." (Respondent B,2022)

Respondent B added that the collection and cleaning of data is an early stage in data analytics. Processing data from several sources and in various forms may be a time-consuming and laborious task. All the respondents agreed that RPA automate this process by taking data from numerous sources, including as databases, websites, and Excel sheets, and cleaning it up by eliminating mistakes and duplication. Information may be standardized using RPA to make it more easily analyzed by applying a common format across all records.

Data gathering is another area where RPA shines. It can be taught to glean information from a wide range of online and offline resources, including websites, social media platforms, and databases. Respondent C gives an example which tasks like data validation, which check that the information obtained is correct and comprehensive, are also within its programmable capabilities. Robotic process automation (RPA) may be taught to spot and get rid of inaccurate, obsolete, or redundant information.

"*Data standardization is an example of a job that may be coded into the tool, with the end goal of achieving consistency in data across all a company's data storage and processing systems."* (Respondent C,2022)

Respondent C believes RPA gives real-time insights and analysis by continually monitoring data streams and issuing alarms when criteria are fulfilled. For example, He stated that an RPA bot trained to monitor sales data and deliver an alarm if sales fall below a given level. This may assist DHL Global Forwarding SDN BHD in promptly identifying and addressing possible concerns and opportunities. RPA may also be used with artificial intelligence (AI) and machine learning (ML) technologies to improve the accuracy and speed of data processing. This may help firms acquire more accurate and up-to-date information and make more educated real-time choices according to respondent C.

"Usually, company will gain real time and accurate and will use it for us to make better decision." (Respondent C,2022)

Moreover, Respondent A added that RPA aids in automated reporting by employing software robots to automate repetitive, time-consuming processes like data input, data manipulation, and report production. He said RPA enables quicker and more accurate reporting since robots can operate without pauses or rest and can accomplish jobs with greater precision than humans. Furthermore, He experienced RPA can configured to extract data from several sources, like databases, spreadsheets, and ERP systems, and merge it into a single report. This removes the need for manual data input and enables more efficient and accurate reporting. As a result, He conclude that the time and effort necessary to compile accurate and up-to-date reports is reduced.

"I feel more relaxed after the implementation of RPA because I don't have to focus more on compiling data." (Respondent A, 2022)

By automating data collection, purification, transformation, and reporting, as well as giving real-time insights and facilitating collaboration and integration, RPA may greatly improve data analytics. It may also grow and adapt to the organization's demands, freeing up analysts to concentrate on more complicated jobs and giving real-time insights. Organizations may improve their data analytics efforts and make better informed choices by adopting RPA. Overall, RPA and data analytics are a fantastic fit.

4.2.3 Image

The technology acceptance model (TAM) defines "image" as the assumption that employing a certain technology would boost an individual's standing inside their business or among their peers and superiors. This perspective may influence a person's technology adoption and attitude.

Image – Enhance employee reputation.

In the Technology Acceptance Model (TAM), image refers to the extent to which a person believes that using a specific technology will enhance their image or reputation among their peers, colleagues, or superiors. A technology that is perceived as enhancing a person's image or reputation is more likely to be perceived as useful.

According to Respondent A, he sees the image-enhancing potential of the technology as a positive aspect, but it is not the most important factor in his decision to use it. It shows he also prioritizes other aspects such as usefulness, ease of use and overall impact on their productivity. He can demonstrate that he is proactive in finding ways to improve work efficiency and effectiveness. Additionally, it gives the ability to complete tasks more quickly and accurately, which is viewed positively by everyone else. Above all, he stated that RPA is on par with other emerging software technologies that made image enhancement is not his priority.

"*I believe that it showcases my skills and knowledge, and that it gives me an edge over my colleagues in terms of prestige and status. I feel that it helps to set me apart as an expert in my field and that it enhances my professional reputation*." (Respondent A,2022)

"I've had similar experiences with other technologies I've used in the past. I think it's important to note that image enhancement is not my main concern when I'm evaluating a technology, but it's a nice bonus." (Respondent A,2022)

Meanwhile, Respondent B stated that he sees RPA as something that enhances his skills and knowledge and gives him a sense of prestige and status. He also stated that he sees the technology as something that helps to set him apart as an expert in their field and enhances their professional reputation. He claimed that his reputation is important as the image-enhancing potential of RPA can reflect his work and gain recognition and respect among his colleagues and superiors.

"Using RPA enhances my image or reputation among my colleagues and superiors by demonstrating my ability to implement and manage new technologies effectively." (Respondent B,2022)

"It can also showcase my dedication to improving processes and increasing efficiency. Additionally, the image-enhancing potential of this RPA can also reflect positively on my work and help me to gain recognition and respect among my colleagues and superiors." (Respondent B,2022)

Respondent C stated that he had a positive experience with the image-enhancing potential of the technology in the past, specifically in a situation where it helped him solve a specific task and problem. He also suggests that the person's knowledge of the technology and its capabilities has helped to enhance their image and reputation among their team and superiors.

"It also demonstrates my commitment to continuous improvement and my ability to effectively

implement new technologies." (Respondent C,2022)

"I do recognize that being able to demonstrate the positive impact of RPA on overall business performance can enhance my image and reputation." (Respondent C,2022)

All in all, the majority of the respondents consider their professional experience, this technology stands out as the best in terms of image enhancement and overall performance. It also suggests that the technology's reputation for being innovative and widely adopted in the industry, as well as its ability to improve efficiency and productivity, are features that are highly valued by their colleagues and superiors.

4.2.4 Result Demonstrability

Respondent A claimed that the organization has a structured approach to measuring the results achieved by using RPA. They track key performance indicators such as process efficiency, accuracy, and cost savings, they also track customer satisfaction and employee engagement. It also suggests that they compare the performance of RPA with the manual process, and they monitor the accuracy of the output produced by RPA to ensure that it meets the standards.

"We measure the results achieved by using RPA in our organization by looking at key performance indicators such as process efficiency, accuracy, and cost savings. We track the time it takes to complete a process both manually and using RPA and compare the two. We also regularly monitor the accuracy of the output produced by RPA to ensure that it meets our standards. Additionally, we track cost savings by comparing the costs of manual labor to the costs of using RPA. We also track customer satisfaction and employee engagement as well."(Respondent A,2022)

Meanwhile, Respondent B had difficulties which he had a negative experience with RPA where the results achieved by using RPA were not able to be demonstrated. It also suggests that the person realized that this was an isolated incident due to lack of proper testing and validation before implementation, and that this experience affected their perception of the usefulness of the technology. However, it also highlights that Respondent B understands the importance of thorough testing and validation to ensure the successful implementation of RPA and prevent similar issues in the future.

"Yes, I have been in a situation where the results achieved by using RPA were not able to be demonstrated. It was a situation where the RPA implementation had not been properly tested and validated before being put into production. The result was a lack of accurate data and metrics to

demonstrate the results achieved. This experience made me realize the importance of thoroughly testing and validating RPA before implementation. It also made me question the usefulness of the technology, as I couldn't see the concrete benefits it provided. However, I also realized that this was an isolated incident and that proper testing and validation can prevent these types of issues in the future."(Respondent B,2022)

Finally, respondent C also claimed that the result demonstrability of RPA is very important to him as it allows him to see the tangible benefits of using the technology and to communicate those benefits to his colleagues and superiors. Being able to demonstrate the results achieved by using RPA is crucial for gaining support and buy-in from others in the organization. It also helps Respondent C to justify the investment in the technology and to assess its effectiveness over time. Without the ability to demonstrate results, it would be much harder to convince others of the value of RPA and to make informed decisions about its continued use.

All in all it indicates that the person sees the result demonstrability of RPA as important in their job. It allows them to see the tangible benefits of using technology and to communicate those benefits to others. It also helps them to justify the investment in the technology and to assess its effectiveness over time. It suggests that without the ability to demonstrate results, it would be difficult to convince others of the value of RPA and to make informed decisions about its continued use.

4.3 Perceived Ease of Use (PEOU)

The researcher conducted a few interview sessions with the experienced respondents to identify the benefits and challenges that faced by the selected respondents in adopting RPA in DHL Global Forwarding (M) Sdn Bhd Malaysia. After interviewing the selected respondents, the researcher carried out four external variables in Perceived Ease of Use which are experience, technical support, computer self-efficiency, and facilitating condition.

Perceived ease of use is an important variable in determining a user's acceptance and adoption of technology. It is often measured by asking users to rate their agreement with statements such as "I find this system easy to use" or "I think that I would like to use this system frequently." The higher the score, the greater the perceived ease of use. Perceived ease of use is closely related to the usability of a technology. Usability refers to the ease with which a technology can be used to achieve specific goals. Technology that is easy to use and has a high level of usability is more likely to be perceived as easy to use by users.

Research has shown that perceived ease of use can have a positive impact on perceived

usefulness. When a person believes that a technology is easy to use, they are more likely to perceive it as useful. This can increase their willingness to adopt the technology and to use it in their daily lives. Additionally, perceived ease of use can also have a direct impact on a person's actual use of technology.

In short, perceived ease of use is a key factor that determines whether a person will adopt a new technology or not. It is the belief that a technology is easy to use and does not require a lot of time or effort to learn or use it. The easier it is to use a technology that is perceived, the more likely it is to be adopted. Table 4 shows the external variables used in perceived ease of use.

Table 5: external variables used in perceived ease of use.

RESPONDENT / External Variables	A	B	C
Experience			
Perception of External Control			
Computer anxiety			
Computer Self-Efficiency			
Computer Playfulness			
Perceived enjoyment			
Objective usability			

4.3.1 Experience

Experience - Lack of Knowledge and Experiences

Learning to utilize a software robot is not always an easy procedure. Employees' knowledge of software robot technologies and even fundamental computer systems varies. Many workers may begin to utilize a software robot as their virtual assistant for the first time, whilst others are more used to frequently adopting new software in their job. More than half of all comments mentioned issues with the robot's setup, use, and functioning.

Respondent A, and B said they had to overcome difficulties with first programming and coding. This is an intriguing fact since two of them identified as IT experts and instead identified as business specialists in the industries. Setting up the RPA should be done with care, since this key implementation step has an enormous influence on the overall outcome.

"The initial setup to determine the system's work parameters with a wrong input a little error during this portion of the procedure might result in a considerable volume of worthless data." (Respondent A,2022)

Respondent C said that one of the most challenging components of their employment with the software robot was learning the actual program. He added that new employees with no experience will have difficulty in learning the RPA and making sure everything connected for the RPA works properly.

Moreover, all the respondents said that they needed to learn more about the target systems that the robot was employing to understand how automation works. Some had difficulty learning how to activate the bot, alter the settings, and learn about data filtering, system shortcuts, and other technical capabilities.

"The most difficult aspect of working with a software robot is generally fine-tuning it to function with your software program. You may need to spend some time fine-tuning the RPA settings and parameters

until it performs precisely as you want." (Respondent B,2022)

There is an obvious need for technical reskilling to tackle these issues. According to respondent B, most of the employees in DHL said they learned new skills, such as basic in implementing RPA. The respondents learnt new skills relating to the new RPA program or user interface. He also said that IT help is still required, but others stated that after learning certain coding, they were now able to repair some mistakes on their own. Learning new abilities, such as programming and coding, may help one's career development.

"I need to understand programming in order to make the same modifications should specific difficulties arise." (Respondent B,2022)

The majority of the indicated technical abilities were connected to the widespread use of software robots. This meant that the responses had to understand data entry, the proper inputs, and outputs, and how the robot works in a system at the very least. According to some workers, they must learn to remember formulas, instructions, and other case-specific characteristics.

4.3.2 Perception of External Control

The perception of external control is how much a person thinks technology is controlled by outside forces. A central authority or another person may control the technology. A low impression of external control indicates that the person believes they have a lot of control over the technology, whereas a strong perception indicates the opposite. This impression affects technological adoption and utilization.

Perception of External Control – Technical Support

Change management and error handling were the second most common difficulty categories. For example, Respondent C stated that the robot may not perform as planned, or mistakes may arise if even minor modifications to the system on which it is operating. Several staff said that they had to wait for someone to conduct the debugging and rectify the mistake or adjust.

"When something goes wrong and we don't know why, and someone needs to comb through all the codes to repair it. Because the technology is still relatively new to my business, we usually have to wait for our higher-level support staff to solve it." (Respondent C,2022)

It is difficult to make an adjustment when they are required. Changes and additions are often queued and must wait for resources since software robots are programmed by highly trained people. In certain circumstances, personnel must debug and repair the robot themselves. If you are not an expert in software development or do not completely understand how the robot works, this may be irritating and time-consuming. Even if you are a developer, troubleshooting might be difficult.

"I truly have no clue what to do if there is ever a malfunction or any type of trouble. When an issue arose, it would need troubleshooting. There was the hardware computer, the software, the output, and the process, all of which may be defective. This is very hard to trace due to a lack of error recording or detailed error messages." (Respondent A,2022)

Commentary from Respondent A: From time to time, the robot will make a mistake. When this happens, he must fix it, which causes me to fall behind. The situation becomes challenging whenever the robot is unable to do the task satisfactorily. When the employee does not have a firm grip on how something operates, it is tough to isolate the source of a problem.

Respondent B said sometimes it missed the mark and did not really investigate thoroughly. He made it and has been adjusting to it ever since as he has found new uses for it. Occasionally RPA won't follow orders and make mistakes that you'll have to fix, he said. If it does not work, Respondent B needs to figure out what went wrong and then have it fixed. Most of the time he needs to double-check on a frequent basis to make sure they are not making any mistakes in their operations. Moreover, RPA seems to freeze up when you're the busiest, making employee life even more difficult.

Only one respondent, respondent C, said that he learnt about troubleshooting or fault management after beginning to work with the RPA. The first thing to learn is how to identify where the error or issue occurred. The next step might be to adjust the settings and change the input type or source. An essential requirement is a solid grounding in computer fundamentals, as stated by Respondent C. Years of expertise working with computers, installing software, and troubleshooting simple issues.

In sum, the researcher believes the robot's ability to perform its online duty may be hindered or perhaps impossible in some target systems due to a broken or nonexistent internet connection. Some employees will need to learn how to utilize an internet browser in order to interact with the RPA remotely.

4.3.3 Computer Self Efficiency, Computer Anxiety and Computer Playfulness

Even when no faults have happened, respondents find it difficult to trust the robot's performance. Employees, for example, may mistrust the correctness of the robots' job outcomes, or they may believe that the robot has overlooked something vital. This may also imply more work for employees to manually inspect, evaluate, or monitor the job, which may have a detrimental impact on productivity and efficiency, which are often the aims of automation.

Respondent B argued that human review is necessary because software flaws might occur. Despite his initial reluctance to have faith in the accuracy of the software, he was able to utilize it without incident. Because he was skeptical of the new system, he reviewed everything twice to make sure it was error-free. Depending on and adjusting to certain systems might be challenging. The first phases of adoption are often marked by apprehension. The software's seeming legitimacy was at first hard to accept. It is not easy to relax and let fate take its course. Making sure nothing bad happens requires vigilant monitoring of the situation.

"I wasn't always certain that the software robot was doing the correct thing, so I had to go in and double check to make sure it was running properly."(Respondent B,2022)

"Not understanding the full scope of what the program can accomplish or confirming what I am presently doing. Working with software robots makes it difficult to get a second opinion or examine material since I'm not sure of their correctness for certain activities."(Respondent C,2022)

Even though technology is always evolving to integrate more artificial intelligence characteristics and capabilities, today's software robots lack the cognitive skills that humans have. Despite considerable advances in the artificial intelligence sector, such as the incorporation of machine learning into software robotics, most software robots are still extremely basic and can only execute narrowly specified tasks. This was reflected in the comments as well.

"It was incapable of comprehending subtleties or fresh scenarios."(Respondent C,2022)

"It doesn't have the ability to think; it just responds to particular orders and can't figure out what we want from it if anything is somewhat different from its planned method."(Respondent C,2022)

According to Respondent C These problems may occur, especially if the robot is asked to manage unusual or difficult circumstances. Some employees have voiced their worry that software robots are not very customizable. He wants things to be a bit livelier and sometimes wishes that RPA could do more, but it is not designed to do so.

When working with RPA, Respondent B said employees must improve their analytical and decision-making abilities. He also mentioned data interpretation that It still requires a lot of careful study and expertise to examine the data supplied and make an educated conclusion. He added that he must understand when to utilize the algorithm as a guideline and when to disregard the information.

The researcher believes that it seems in certain circumstances, employees felt the need to learn how to train robots. Employees are required to learn to think more rationally or algorithmically, and to be more methodical, for example, during the installation process, to be able to accomplish this and get the robot to comprehend properly.

4.3.4 Objective Usability

Objective usability measures a technology's ease of use in terms of time, mistakes, and steps. User testing and assessment decide its design quality. Objective usability is used to evaluate and enhance goods and systems.

Objective Usability - Reduced Errors

Respondent B stated that one of the most interesting features of RPA is its ability to reduce errors. We immediately associate RPA with the automation of labor-intensive, error-prone manual processes. Outsourcing the personnel when there are linguistic or cultural barriers might exacerbate the problem. He stated that software robots can operate nonstop with pinpoint precision after RPA has been implemented, reducing the room for human mistake, and maximizing processing speed. When checking that a procedure is carried out in accordance with established guidelines, more attention to detail is required. By using RPA, not only are human mistakes reduced, but regulations are followed, and procedures are carried out more quickly.

"Particularly when dealing with large amounts of data, technology may speed up the data-gathering process." (Respondent B,2022)

Data input may not seem important, but it really is for many businesses and especially in

logistics and supply chain industry. Mistakes at any stage of the process might have far-reaching effects later. Respondent C said that businesses rely on human data entry. But he claimed error-free automation of manual processes like data input is only one of the many benefits that Robotic Process Automation (RPA) provides to organizations of all sizes. Time-consuming activities that are prone to human mistake may be taken over by RPA bots, freeing up employees' time.

The fact that RPA is rule-based means it may significantly speed up processes by eliminating the need for human intervention during data entry. This implies that it always operates according to a very precise configuration that has been defined in advance. Respondent C said that workers will not have to put in long hours of data entry and error correction. Employees are free to devote their efforts elsewhere, maybe to more complex endeavors that need innovative thought and careful planning.

"Through the use of structured data input from human operators, RPA allows more precise data entry operations." (Respondent C,2022)

Robotic process automation is nimble and responsive to evolutions in procedure. The automation bots don't waste time getting used to new data input methods. Respondent A stated that users may fine-tune their robots' performance by adjusting in the robotic process automation program. This method not only reduces the possibility of mistakes, but it also saves time compared to retraining workers. His opinions that companies may save both time and money on training with the aid of adaptable bots that can swiftly respond to new situations.

It should be made clear that RPA is not an aid that can or will eliminate the need for human employees inside an organization. Instead, Respondent A claimed it helps businesses function more smoothly by decreasing the number of mistakes made while entering data, thereby increasing productivity. The employment of robots in robotic process automation has the potential to greatly reduce typographical mistakes made during data input. RPA's major value lies in its ability to automate routine, rule-based processes. To put it another way, he said this may free up workers' time to concentrate on other important projects. Additionally, RPA may assist in enhancing precision by lessening the likelihood of mistakes caused by humans.

Lastly respondent C added that robotic process automation may be used, for instance, to verify that information satisfies certain criteria before it is processed into a system. Because of this, it may be possible to minimize the amount of time spent manually validating and correcting data once it has been submitted into the system. Data inconsistencies like duplicates and gaps may be found and filled in using RPA. Robotic process automation may streamline data cleaning, or the elimination of inaccuracies.

4.3.5 Perceived enjoyment

Perceived enjoyment is a person's subjective sense of pleasure or satisfaction when utilising technology. It indicates how much a person appreciates using a technology and looks forward to using it again. Technology usability and user experience are commonly assessed using this notion.

Perceived satisfaction is a key predictor of technology usage and adoption. According to the Technology Acceptance Model (TAM), perceived pleasure is a major aspect in shaping an individual's attitude toward a technology and their desire to utilize it. According to Respondent A and B, both have similar responses which give a high rated of overall RPA performance and describe them as very useful in their capacities.

"*I would rate my overall enjoyment of using RPA as high. I find it to be an efficient and effective tool that saves me time and energy in completing my tasks*."(Respondent A,2022)

"*I would rate my overall enjoyment of using RPA as moderate. While I do find it to be useful, there are certain aspects of it that I find frustrating or confusing*."(Respondent B,2022)

Respondent A and B claimed that RPA gives instant enjoyment because RPA can save their time which can lead to efficiency in their workplace. Additionally, Respondent A and B have found that the increased productivity and accuracy that RPA has provided has made them feel more confident in their work and has given satisfaction. Overall, RPA has greatly enhanced enjoyment job.

"*I found using RPA to automate repetitive tasks really enjoyable because it freed up my time to focus on more challenging and interesting aspects of my job.*" (Respondent A,2022)

"*I have to admit, at first I was hesitant to use RPA, but after experiencing its efficiency and ease of use, it has greatly increased my enjoyment in my job.*"(Respondent B,2022)

4.4 Behavioral Intention

Behavioral intention to use is a concept in the Technology Acceptance Model (TAM) which refers to a person's intention to use a specific technology in the future. It is a measure of how likely a

person is to use a technology in the future, based on their attitude towards the technology and their perceived usefulness and perceived ease of use of the technology.

Behavioral Intention – Positive Response

All of the respondents give positive feedback on the behavioral intention which if a person has a strong intention to use a technology, they are more likely to use it in the future. According to respondent A the main factors that influence him to use RPA is the efficiency and time that RPA can bring to his work. He also stated that he can automate a task that usually takes hours to finish. He added that RPA is worth using for.

"One of the main factors that influence my decision to use RPA is the efficiency and time savings it can bring to my workload. If I can automate a task that would otherwise take me several hours to complete manually, it's definitely worth considering using RPA." (Respondent A,2022)

Meanwhile, Respondent B claimed that he will likely continue according to the result that RPA benefits him. According to him, RPA benefits him in many ways such as time saving and boosting job performance. RPA will continue to growth in the future with an inclined percentage of users that can be seen as year passed by.

"My decision to continue using RPA in the future would depend on the results it produces, the time it saves me, and the level of support provided by my organization."(Respondent B,2022)

In conclusion, when a person perceives a technology as useful and easy to use, they are more likely to have a positive attitude towards it and to intend to use it in the future. In short, behavioral intention to use is a key variable in the Technology Acceptance Model (TAM) that refers to a person's intention to use a specific technology in the future. It is a measure of how likely a person is to use technology in the future, based on their attitude.

4.5 Benefits of Implementation Robotic Process Automation (RPA)

The researcher analyzed the data from external variables in technology acceptance model. There are a lot of benefits given by adopting RPA in DHL Global Forwarding (M) Sdn Bhd Malaysia. The researcher found that there are five major benefits of implementing robotic process automation that benefits the selected respondents which are to increase better customer experience, increase in productivity, increase efficiency, reduced errors, and better data analytic. Table 6 shows the types of opportunities given by implementing automation that benefits the selected respondents that the

researcher had interviewed in this research.

RESPONDENT / BENEFIT	A	B	C
Better customer experiences	/	/	/
Increase in productivity	/	/	/
Increase efficiency	/	/	/
Reduced errors	/	/	/
Better Data Analytic	/	/	/

Table 6: Benefits of implementation RPA

As mentioned in the table above, the major benefits of implementation of RPA that benefits to the Respondent A, Respondent B, Respondent Care to have better customer experience, increase in productivity, increase efficiency, reduced errors, and better data analytic.

4.6 Challenges of Implementing Robotic Process Automation

The researcher analyzed the data from external variables in technology acceptance model. There are a few challenges given by adopting RPA in DHL Global Forwarding (M) Sdn Bhd Malaysia. The researcher found that there are three major challenges of implementing robotic process automation that affected the selected respondents which are lack of knowledge and experiences, technical support, and computer anxiety. Table 4 shows the challenges of implementing RPA faced by DHL Global Forwarding (M) Sdn Bhd Malaysia employees.

RESPONDENT / CHALLENGES	A	B	C
Lack of Knowledge and Experience	/	/	/
Technical support	/	/	/
Computer Anxiety	/	/	/

Table 7: challenges of implementing RPA.

4.7 Summary

This chapter covered the result and analysis of this study from the data that was collected through the interview method. The interview sessions were conducted with three employees from DHL Global Forwarding (M) Sdn Bhd Malaysia. Each of the respondents shared their experience and knowledge about the benefits and challenges of implementing RPA in their company. The result was presented with the aid of figures and supported by secondary data. Furthermore, recommendations and conclusions will be further discussed in chapter 5.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

In this chapter, the discussion is based on the results of the data analysis on what has been outlined in chapter four. The research objectives of this research are successfully achieved, and the

research questions of this research have been answered. The first research objective is to determine the benefits of Robotic Process Automation (RPA) in in DHL Global Forwarding (M) Sdn Bhd Malaysia. The second research objective is to investigate the challenges of adopting Robotic Process Automation in in DHL Global Forwarding (M) Sdn Bhd Malaysia. In addition, some recommendations for further research are discussed for the purpose of continuing the study on investigating the Benefit and Challenges in Robotic Process Automation.

5.1 Benefits of Implementation Robotic Process Automation (RPA)

Taylor et al. (2013), the implementation of automation relies on the assumption that automation will reduce the operator's cognitive demand and improve performance. As been highlighted in Chapter one Since RPA increases both worker output and overall workflow efficiency, it presents significant new possibilities for businesses. Automation aids in the control of routine tasks and the establishment of uniform procedures. However, the researcher only focused on the implementing RPA that benefit to DHL Global Forwarding (M) Sdn Bhd Malaysia due to time constrains. From the result analyzed in Chapter four, the researcher found that, the four major benefits of implementing RPA in DHL Global Forwarding (M) Sdn Bhd Malaysia are to better customer experiences, increase in productivity and efficiency, reduced errors and better data analytic.

5.1.1 Better customer experiences

Businesses are able to provide a unified service to their clients across all of their various touchpoints with the assistance of RPA technology. RPA customer assistance eventually improves client satisfaction by reducing the workload associated with administrative and back-office chores. According to data conducted by Automation Anywhere, employees spend an average of forty percent of their time doing menial, manual tasks that might be automated with no more effort required from the employees. RPA solutions provide enhanced task monitoring, consistent service delivery, and knowledge sharing, all of which assist people in offering superior contact center customer care. In addition, the use of RPA technology decreases the likelihood of making errors when collecting information, which, in turn, leads to an improvement in the level of pleasure experienced by clients.

According to a white paper published by IDC, organizations lose an average of $62.4 million per year owing to errors caused by humans. Additionally, with the aid of RPA solutions, you are able to do all of that and much more. In the end, the use of RPA technologies in customer service decreases the likelihood of making errors when collecting information, which ultimately results in an improvement in the degree to which customers are satisfied. Because of this, the support personnel

may have encounters with consumers that are both more effective and more pleasant.

5.1.2 Increase in productivity and efficiency

Workers are now able to dedicate their time and energy to more important tasks that make better use of their knowledge thanks to robotic process automation, often known as RPA. The impact that physical robots had on the industrial production line is analogous to the effect that robotic process automation (RPA) had on digital business processes. Software robots continue to operate even after the sun goes down, delaying the need for human attention for any issues until the following morning. The use of RPA software to do busy tasks might lead to an improvement in staff productivity. Research conducted by Technology Partner in 2021 indicates that these robots are capable of completing their work anywhere from two to five times more quickly than humans, with an 80 percent reduction in the number of errors made. Software robots that are part of robotic process automation may perform the bulk of data entry activities, which improves accuracy, efficiency, and security.

Individuals and groups can significantly impact the dynamic of a company by rearranging work processes with the assistance of RPA. As members of the team gain greater confidence, there will be more time available to pinpoint issues, carry out comprehensive investigations, implement cross-functional optimization, and increase the level of satisfaction experienced by customers.

5.1.3 Reduced Errors

The capability of RPA to lower mistake rates is among the most fascinating aspects of this technology. Not only does the use of RPA minimise the number of errors caused by humans, but it also ensures that rules are adhered to and that processes are completed more rapidly. Although the entry of data may not appear crucial at first glance, it really is for many different kinds of companies. RPA bots have the potential to take over labor-intensive tasks that are prone to error when performed by humans. The term robotic process automation (RPA) quickly brings to mind the automation of labor-intensive and error-prone manual procedures.

The use of robotic process automation (RPA) has the ability to significantly cut down on the number of typographical errors that occur throughout the process of data entry. The capacity of RPA to automate mundane, rule-based operations is where the majority of its value rests. Respondent A said that users have the ability to fine-tune the operation of their robots by making adjustments in the robotic process automation application.

5.1.4 Better data analytic

Data insights and analyses may be obtained in real time via the use of robotic process

automation (RPA). RPA has the potential to completely revolutionize the area of data analytics. In order to simplify and expedite the process of data analytics, RPA may be used to automate the data collection, purification, and transformation steps. RPA provides real-time insights and analysis since it continuously monitors data streams and issues alerts when certain criteria are satisfied. Respondent A noted that RPA helps automate reporting by deploying robots to automate repetitive, time-consuming operations including data entry, data processing, and report preparation. This helps reduce the amount of human labor required for these tasks.

This may be of use to DHL Global Forwarding SDN BHD in recognizing and resolving any possibilities and problems in a timely manner. In general, robotic process automation (RPA) and data analytics are a very good pairing. RPA helps automate reporting by deploying robots to automate repetitive, time-consuming operations including data entry, data processing, and report preparation. This helps reduce the amount of human labor required for these tasks. This can be of assistance to DHL Global Forwarding SDN BHD in quickly recognizing and resolving any problems or opportunities that may arise. In general, robotic process automation (RPA) and data analytics are a very good pairing.

5.2 Challenges of Implementing Robotic Process Automation

As mentioned in section 2.3, the researcher had been identifying the challenges of implementing robotic process automation are cost, training, choosing the right automation technology and process, physical and psychological stress, and flexibility According to Forrester (2022), by 2030, automation and robots will have changed as many as 80% of all occupations. This prediction requires organizations and workers to prepare for future difficulties and demands that workers acquire or refresh their abilities to work with robots.

However, the researcher found that there are only three critical challenges faced by most of the selected respondents that the researcher had interviewed. The three critical challenges are cost, flexibility, and training.

5.2.1 Lack of Knowledge and Experiences

The process of mastering how to operate a software robot is not always straightforward. A little more than half of all the feedback cited problems with the configuration, operation, and usage of the robot. Employees had to go through challenges when it came to first programming and coding. In order to comprehend the operation of automation, each responder said that they need further education about the goal systems that the robot was using. It is important to take your time while establishing the RPA since this crucial stage of the implementation process has a significant impact on the final result. The initial setup to identify the system's work parameters with an incorrect input a slight inaccuracy during

this stage of the operation might result in a substantial amount of meaningless data the most difficult aspects of their job with the software robot was learning the actual program, which they were required to use.

A few of DHL's workers struggled to figure out how to activate the bot, change its settings, and learn about data filtering, system shortcuts, and other technological features. The advancement of one's professional life may benefit from the acquisition of new skills such as coding and programming. For me to be able to make the same adjustments in the event that certain problems develop, I need to understand programming. The responders gained new knowledge and abilities related to the newly implemented RPA software or user interface.

5.2.2 Technical support

The second most prevalent areas of difficulties were change management and error handling. Even if just minimal adjustments are made to the system, it is possible that errors may occur. This might be frustrating and time-consuming for you if you are not an experienced professional in the field of software development and do not have a thorough understanding of how robots operate. Troubleshooting might be challenging even if you have experience as a software engineer.

The researcher thinks that the capacity of the robot to fulfil its online function may be limited, or possibly even impossible, in some of the target systems because of a broken or nonexistent internet connection. RPA appears to freeze up when you're at busiest, which makes the lives of your employees much more challenging. He mentioned that sometimes RPA would make errors that you will be responsible for correcting.

5.2.3 Computer Anxiety

Anxiety often permeates the early stages of the incorporation of software robots into businesses. Employees may have skepticism over the veracity of the job results produced by robots, or they may think that the robot has failed to account for an essential factor. This may also mean that personnel may have to put in more effort to manually examine, analyze, or monitor the work being done, which may have a negative influence on both productivity and efficiency. According to one of the respondents, it is not simple to kick back, relax, and let destiny take its course. Relaxing and allowing destiny to take its own path is not an easy task.

Respondent B said that staff need to develop their analytical and decision-making talents in order to operate effectively with RPA. Several workers have expressed their concern that the degree to which software robots may be customized is limited. It is possible for these issues to arise, particularly if the robot is requested to handle conditions that are uncommon or challenging. According to him, "It does not have the capacity to think; it just reacts to precise directions and is unable to figure out what it is that we want from it."

5.3 Contribution of Research

The contribution of this research is a supporting information for the existing knowledge. This research can provide a guideline to the logistic and supply chain who intend to implement RPA in their organization. The company will be understanding the difference between implementing automation and manually. Thus, companies can identify the benefits of implementing RPA brings into the organization. In addition, this research also can make the others company to be more alert with the challenges of implementing RPA. With awareness and general knowledge, companies can handle and conquer challenges while implementing automation.

5.4 Limitations

This research suffers from a few limitations. Firstly, the research has been conducting this research over a short period of time. The time given to complete this research is limited which was about 9 months from January 2022 to January 2023. Secondly, the limitation of this study was the limited respondent gathered in DHL Global Forwarding Sdn Bhd. Therefore, the results of the study cannot be generalized to every logistics companies in Malaysia.

5.5 Recommendations for Future Research

Robotic Process Automation (RPA) is a rapidly growing technology that has the potential to revolutionize the way organizations operate and manage their processes. However, there are still many areas where further research is needed to fully understand the benefits and challenges of RPA. In this essay, we will discuss several recommendations for future research on RPA.

First, research should focus on the scalability and reliability of RPA systems in large and complex organizations. While RPA has been shown to be effective in small and medium-sized organizations, it is not yet clear how well it will perform in larger and more complex environments. Future research should investigate the feasibility of deploying RPA in large organizations and how to

overcome any challenges that may arise.

Next, there is a need to explore the ethical and legal implications of RPA, such as issues related to data privacy and job displacement. RPA has the potential to raise ethical and legal issues that need to be addressed, and future research should investigate these issues and provide recommendations for addressing them.

Furthermore, research should evaluate the impact of RPA on job satisfaction, motivation, and employee engagement. RPA has the potential to improve job satisfaction and motivation by automating tedious tasks, but it could also have a negative impact on employee engagement if it leads to job displacement. Future research should investigate the impact of RPA on job satisfaction, motivation, and employee engagement and identify any potential challenges that need to be addressed.

Finally, research should investigate the integration of RPA with emerging technologies such as AI and machine learning. RPA has the potential to be integrated with AI and machine learning to create more advanced and intelligent automation systems. Future research should investigate the feasibility of integrating RPA with AI and machine learning and identify any potential challenges that need to be addressed.

In conclusion, RPA is a rapidly growing technology with the potential to revolutionize the way organizations operate and manage their processes. However, there are still many areas where further research is needed to fully understand the benefits and challenges of RPA. The recommendations outlined in this essay provide a starting point for future research on RPA and can help guide organizations in making informed decisions about deploying RPA technology.

5.6 Summary

This research is about a study of the benefits and challenges of implementation RPA in DHL Global Forwarding (M) Sdn Bhd Malaysia. In overall, it can be concluded that all the technology acceptance, benefits, and challenges of implementing RPA is very important to every company.

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WEEK/ ACTIVITIES	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
FYP talk									MID SEMESTER BREAK							
Search for FYP topic																
Meeting with supervisor																
Topic discussion																
Title confirmation																
RO & RQ Construction																
Submission Chapter 1																
Submission Chapter 2																
Submission Chapter 3																
First draft of FYP 1																
Submission of FYP 1																
Presentation 1																
Revised of FYP 1																

APPENDIX B

Gantt Chart of Final Year Project (FYP) 2

WEEK/ ACTIVITIES	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Create Questionnaire									MID SEMESTER BREAK							
Distribute Questionnaire																
Collect Questionnaire																
Analysis Data																
Submission Chapter 4																
Submission Chapter 5																
Proposal Correction																
Slide Preparation																
Submission of FYP 2																
Presentation 2																

1. In-depth Interviews (IDIs) Information Profile

INFORMATION PROFILE

In-depth Interviews

Introduction

I, Akmal Saufi Bin Mohd Rosli, am conducting a degree-level research study to examine Benefit and Challenges in Robotic Process Automation: A Case Study in DHL Global Forwarding (M) Sdn Bhd Malaysia. I am interested in exploring through qualitative research paradigm via case study approach as more organizations are turning to IT solutions, chief among which are software robots, to automate operations, laying the groundwork for digital transformation. This study endeavours to explore the benefits and challenges in adopting of Robotic Process Automation (RPA) in in DHL Global Forwarding (M) Sdn Bhd Malaysia also ventures to seek the technology acceptance towards working society.

What is the purpose of this study?

I would like to know the extent of the benefits and challenges in adopting of Robotic Process Automation (RPA) in in DHL Global Forwarding (M) Sdn Bhd Malaysia, while ascertaining the technology acceptance towards working society.

What will happen if you participate in this research interview?

I would like to ask you some open-ended questions about your general perspective on robotic process automation in supply chain and logistic industry, the benefit and challenges of it, current standing, and issues, as well as technology acceptance as a worker in logistic and supply chain industry. **I will take notes of the discussion and a recording will also be made using a digital voice recorder.** After asking these questions today, I will not ask you to do anything further. All information gathered will be treated as **confidential** by the researcher purely for *academic purposes*, and records of the interviews will be kept securely in locked filing cabinets and offices. No personal identification information such as names will be used in any reports arising out of this research.

How long is the duration of this research interview?

The interview will last about less than 60 minutes.

Can I ceased being part of the research interview?

You can opt to stop participating at any time. Just inform the researcher right away if you wish to stop the interview.

What risks can I expect from being in the research interview?

Participation in any research study may involve personal views and opinions. Information you provide about your experiences and opinions will be recorded, but your name will not be used in any reports of the information provided. No quotes or other results arising from your participation in this study will be included in any reports, even anonymously, without your agreement. The information obtained from these interviews will only be used by the researcher for academic purposes. We will do our best to make sure that the personal information gathered for this in-depth interview is kept confidential.

Are there benefits to taking part in the study?

There will be no direct benefit to you from participating in this study. However, the information that you provide will help researchers and policymakers particularly in the logistics and supply chain industry to understand how best to utilize logistic and supply chain through robotic process automation in determining the benefit and challenges as well as technology acceptance.

What other choices do I have if I do not take part in this study?

You are free to choose not to participate in the study. If you decide not to take part in this study, I respectfully accept your decision without prejudice.

What are the costs of taking part in this study?

There are no costs to you for taking part in this study.

What are my rights if I take part in this interview?

Taking part in this study is your choice. You may choose either to take part or not to take part in this interview. If you decide to take part in this study, you may change your mind at any time. No

matter what decision you take, there will be no penalty to you in any way.

Who can answer my questions about the study?

I will personally be delighted to answer all your inquiries, concerns, and questions. You may contact me at (your email) for any other further inquiries.

Giving consent to participate in the study

You may keep this information sheet if you wish. Participation in this interview is **voluntary**. You have the right to decline to participate in the study, or to withdraw from it at any point without penalty. If you do not wish to participate in the study, you should inform the researcher now. If you do wish to participate in this interview, you should tell the researcher now, or at the time of the interview if this is to take place in the future. If you do not agree to quotes or other results arising from your participation in the study being included, even anonymously, in any reports about the study, please tell the researcher now.

2. Personal Interview Consent Form

CONSENT FORM
Study Title: Benefit and Challenges in Robotic Process Automation: A Case Study in DHL Global Forwarding (M) Sdn Bhd Malaysia Researcher: Akmal Saufi Bin Mohd Rosli , UTeM, Malaysia
• The study has been explained to me in a language that I comprehend. All the questions I had about the study have been answered. I understand what will happen during the interview and what is expected of me. • I have been informed that it is my right to refuse to take part in the interview today and that if I choose to refuse I do not have to give a reason, and that it will not prejudice the care that I can expect to receive now, or in the future.

- I have been informed that anything I say during the interview today will remain completely confidential: my name will not be used nor any other information that could be used to identify me.
- It has been explained that sometimes the researchers find it helpful to use my own words when writing up the findings of this research. I understand that any use of my words would be completely anonymous (without my name). I have been told that I can decide whether I permit my words to be used in this way.

Circle response:

I agree to take part in the study:	Yes	No
I agree that my own words may be used anonymously in the report	Yes No	

Signature of participant:

NAME (In capital letters)	**SIGNATURE**	**DATE OF SIGNATURE** (In 12/12/2022)

Signature of Researcher documenting consent:

I have discussed the study with the respondent named above, in a language he/she can comprehend.

I believe he/she has understood my explanation and agrees to take part in the interview.

NAME (In capital letters)	**SIGNATURE**	**DATE OF SIGNATURE** (In 12/12/2022)

CONSENT FORM

Study Title: Benefit and Challenges in Robotic Process Automation: A Case Study in DHL Global Forwarding (M) Sdn Bhd Malaysia

Researcher: Akmal Saufi Bin Mohd Rosli , UTeM, Malaysia

- The study has been explained to me in a language that I comprehend. All the questions I had about the study have been answered. I understand what will happen during the interview and what is expected of me.
- I have been informed that it is my right to refuse to take part in the interview today and that if I choose to refuse I do not have to give a reason, and that it will not prejudice the care that I can expect to receive now, or in the future.
- I have been informed that anything I say during the interview today will remain completely confidential: my name will not be used nor any other information that could be used to identify me.
- It has been explained that sometimes the researchers find it helpful to use my own words when writing up the findings of this research. I understand that any use of my words would be completely anonymous (without my name). I have been told that I can decide whether I permit my words to be used in this way.

Circle response:

I agree to take part in the study:	Yes	No
I agree that my own words may be used anonymously in the report	Yes	No

Signature of participant:

NAME (In capital letters)	**SIGNATURE**	**DATE OF SIGNATURE** (In 12/12/2022)

Signature of Researcher documenting consent:

I have discussed the study with the respondent named above, in a language he/she can

comprehend.

I believe he/she has understood my explanation and agrees to take part in the interview.

NAME (In capital letters)	**SIGNATURE**	**DATE OF SIGNATURE** (In 12/12/2022)

CONSENT FORM

Study Title: Benefit and Challenges in Robotic Process Automation: A Case Study in DHL Global Forwarding (M) Sdn Bhd Malaysia

Researcher: Akmal Saufi Bin Mohd Rosli , UTeM, Malaysia

- The study has been explained to me in a language that I comprehend. All the questions I had about the study have been answered. I understand what will happen during the interview and what is expected of me.
- I have been informed that it is my right to refuse to take part in the interview today and that if I choose to refuse, I do not have to give a reason, and that it will not prejudice the care that I can expect to receive now, or in the future.
- I have been informed that anything I say during the interview today will remain completely confidential: my name will not be used nor any other information that could be used to identify me.
- It has been explained that sometimes the researchers find it helpful to use my own words when writing up the findings of this research. I understand that any use of my words would be completely anonymous (without my name). I have been told that I can decide whether I permit my words to be used in this way.

Circle response:

I agree to take part in the study:	Yes	No

I agree that my own words may be used anonymously in the report	Yes	No

Signature of participant:

NAME (In capital letters)	**SIGNATURE**	**DATE OF SIGNATURE** (In 12/12/2022)

Signature of Researcher documenting consent:

I have discussed the study with the respondent named above, in a language he/she can comprehend.

I believe he/she has understood my explanation and agrees to take part in the interview.

NAME (In capital letters)	**SIGNATURE**	**DATE OF SIGNATURE** (In 12/12/2022)

3. Participant/Informant Interview Questions (Face to Face Interview)

Interview Questions
Interview Focus: Examining the Effect of Marketing Leadership on Internal Marketing in Wealth Industry

Participant ID NO |__|__|__|__| Gender Male / Female Researcher Initials |__|__|__|
Case location |__|__| Date |__|__/__|__/__|__|

Introduction
I am Akmal Saufi Bin Mohd Rosli from UTeM, Malaysia

- ✓ General purpose of the study
- ✓ Aims of the interview and expected duration
- ✓ Who is involved in the process (other participants)
- ✓ Why the participant's cooperation is important

- ✓ What will happen with the collected information and how the participant/target group will benefit
- ✓ Any questions?
- ✓ Consent

Background Info [demographic & marketing leadership history]
Can I ask some details about you and your job?
Job Title _____
Highest Educational attained _____
Are you involved in any forms of robotic process automation? ____Yes_____No
Kindly specify: _____
Age bracket?_____Under 30yrs_____30-40yrs_____Over 40yrs

Participant ID NO |__|__|__|__| Gender Male / Female Researcher Initials |__|__|__|
Case location |__|__| Date |__|__/__|__/__|__|

Introduction
I am Akmal Saufi Bin Mohd Rosli from UTeM, Malaysia

- ✓ General purpose of the study
- ✓ Aims of the interview and expected duration
- ✓ Who is involved in the process (other participants)
- ✓ Why the participant's cooperation is important
- ✓ What will happen with the collected information and how the participant/target group will benefit
- ✓ Any questions?
- ✓ Consent

Background Info [demographic & marketing leadership history]
Can I ask some details about you and your job?
Job Title _____
Highest Educational attained _____
Are you involved in any forms of robotic process automation? ____Yes_____No
Kindly specify: _____
Age bracket?_____Under 30yrs_____30-40yrs_____Over 40yrs

Participant ID NO |__|__|__|__| Gender Male / Female Researcher Initials |__|__|__|
Case location |__|__| Date |__|__/__|__/__|__|

Introduction
I am Akmal Saufi Bin Mohd Rosli from UTeM, Malaysia

- ✓ General purpose of the study
- ✓ Aims of the interview and expected duration
- ✓ Who is involved in the process (other participants)

- ✓ Why the participant's cooperation is important
- ✓ What will happen with the collected information and how the participant/target group will benefit
- ✓ Any questions?
- ✓ Consent

Background Info [demographic & marketing leadership history]
Can I ask some details about you and your job?
Job Title _____
Highest Educational attained _____
Are you involved in any forms of robotic process automation? ____Yes_____No
Kindly specify: _____
Age bracket?_____Under 30yrs_____30-40yrs_____Over 40yrs

Now I am going to ask you some questions about your knowledge and experience on benefits, challenges, and technology acceptance of robotic process automation in your organisation. **Explanation on robotic process automation: Robotic process automation (RPA) is a technique for carrying out routine corporate tasks by computerizing the ways in which humans now accomplish those tasks, whether it via a single application interface or a combination of interfaces, analytics, and rules-based decision making (Deloitte, 2017). Robotic process automation (RPA) is quickly becoming an integral part of modern businesses. Payroll, hiring and onboarding new employees, managing finances, issuing invoices, keeping track of stock, generating reports, migrating data, and other fundamental business activities may all benefit from automation. Since RPA increases both worker output and overall workflow efficiency, it presents significant new possibilities for businesses. Automation aids in the control of routine tasks and the establishment of uniform procedures. **

Domain	Topic and Probes
General knowledge on RPA?	**What do you know and understand about robotic process automation in your capacity?** **Probes:** What is your general knowledge in RPA? Do you have any experience using RPA?
Perceived Usefulness	**What is the impact of perceived usefulness on implementation of RPA?** **Topic: Job relevance** **Prompt:** Can you describe a situation where you had to use a technology that you were not familiar with in your job How did you evaluate usefulness of RPA in relation to your job tasks and responsibilities? How does this technology impact your job performance? **Topic: Output Quality** **Prompt:** How would you rate the output quality of this technology? Can you give an example of a specific task that RPA output quality was particularly useful? How does the output quality of this technology compare to the output quality of manual methods? **Topic: Image** **Prompt:** How does using this technology enhance your image or reputation among your colleagues or superiors? How important is the image-enhancing potential of this technology to you? Have you ever been in a situation where the image-enhancing potential of this technology helped you in a specific task or problem? **Topic: Result Demonstrability**

	Prompt: How do you measure the results achieved by using RPA in your organization? Have you ever been in a situation where the results achieved by using RPA were not able to be demonstrated? How did that affect your perception of its usefulness?
Perceived Ease of Use	**What is the impact of perceived ease of use on implementation of RPA?** **Topic: Experience** **Prompt:** How long have you been using this technology? Have you encountered any challenges or difficulties when using this technology? **Topic: Technical support** **Prompt:** How easy is it for you to access technical support when you need it? How often do you need to contact technical support for assistance? **Topic: Computer self-efficiency** **Prompt:** How comfortable are you with learning new technologies? How confident do you feel when using RPA? **Topic: Facilitating Condition** **Prompt:** how does it relates with improving customer experiences? What process do you think that can be seen getting better in customer experience context? Can you explain more?
Behavorial Intention	**What factors influence your decision to use RPA in your job tasks and responsibilities?** **How likely are you to continue using RPA in the future?** **Can you describe a specific instance where using RPA led to an improvement in your job performance or productivity?**

Closing

Is there anything else you think is important in understanding the impact implementation of RPA?

- ✓ Summarise – I will summarize some key points from our interview.
- ✓ Thank you for your kind participation.
- ✓ I'll be happy to provide any extra and relevant information and contact you.

APPENDIX D

Respondent A Transcript

Interviewer: Assalamualaikum and good evening, sir. My name is Akmal Saufi bin Mohd Rosli, undergraduate students of Bachelor of Technology Management (Supply Chain and Logistics) with Honours from Universiti Teknikal Malaysia Melaka (UTeM). Currently, I am conducting research on Benefit and Challenges in Robotic Process Automation: A Case Study in DHL Global Forwarding (M) Sdn Bhd Malaysia.

Interviewee: Waalaikumsalam Saufi, how may I help you?

Interviewer: First, thank you for your time to do this interview.

Interviewee: Sure, welcome.

Interviewer: First of all, may I know about your general knowledge in RPA?

Interviewee: RPA is a tool that automates routine, processes by simulating human interaction with software in high volume. Some of task that I've experienced by using RPA is data entry, calculation, and task completion, as well as data copying across apps and workflow.

Interviewer: That is impressive. I am interested in how long have you been using RPA?

Interviewee: I have been using RPA for the past two years and it surely helps me a lot.

Interviewer: Can you describe a situation where you had to use a technology that you were not familiar with in your job?

Interviewee: Sure, I can describe a situation where I had to use a technology that I was not familiar with in my job. One example was when my company implemented a new project management software. I had never used this software before and it was not familiar to me. However, I knew that it would be useful for my job tasks and responsibilities, so I took the time to learn and familiarize myself with the software. I evaluated the perceived usefulness of the technology by researching the features and benefits of the software and comparing them to my job requirements. I also asked for feedback from my colleagues who had been using the software for a while. After evaluating the perceived usefulness of the software, I found that it would greatly improve my job performance by allowing me to better organize my tasks, collaborate with my team, and track progress on projects. So, I took the time to learn it and now I am comfortable with it, and it help me to do my job efficiently.

Interviewer: How did you evaluate usefulness of RPA in relation to your job tasks and responsibilities?

Interviewee: When evaluating the usefulness of the RPA in relation to my job tasks and responsibilities, I took several steps. First, I researched the features and benefits of the technology and compared them to my job requirements. This helped me to understand how the technology

could be used to support my job tasks and responsibilities.

Interviewee: Next, I asked for feedback from my colleagues who had been using the technology for a while. They were able to provide me with valuable insights on how the technology was being used in the organization and how it was contributing to their job performance.

Interviewee: I also evaluated the technology by testing it out on some of my tasks, this allowed me to see first-hand how the technology performed in relation to my job tasks and responsibilities. I also considered the compatibility of the technology with my existing work practices and tools. This helped me to evaluate how easy it would be for me to integrate the technology into my work.

Interviewee: Finally, I looked at any case studies or testimonials from other companies or individuals who had used the technology and how it helped them to improve their job performance. This helped me to gain a better understanding of the potential benefits of the technology for my job tasks and responsibilities.

Interviewee: Overall, I took a comprehensive approach to evaluating the perceived usefulness of the technology in relation to my job tasks and responsibilities, by considering the features, the feedback of my colleagues, my own experience, compatibility, and external references.

Interviewer: In what ways did you think RPA would improve your job performance?

Interviewee: I thought that RPA would improve my job performance in several ways. Firstly, it would allow me to organize my tasks and projects more efficiently by providing me with a clear overview of what needed to be done and when. This would help me to prioritize my work and stay on top of deadlines.

Interviewee: Secondly, the technology would enable me to collaborate more effectively with my team. It would allow us to share files and communicate with each other in real-time, which would improve the flow of information and reduce the need for face-to-face meetings. This would save time and improve the overall productivity of the team.

Interviewee: Thirdly, the technology would provide me with better tracking and reporting capabilities. I could track the progress of my tasks, projects and team members and easily generate reports. This would give me a better understanding of how we were performing and how we could improve.

Interviewee: Finally, the technology would improve my job performance by providing me with better tools and resources. It would allow me to access a wider range of information, resources, and tools that would be useful in my job, which would enable me to make better decisions and perform my job more effectively.

Interviewer: With the implementation of RPA in your job scope, do you think it benefits you in any way?

Interviewee: Sure, as for me who has been in the industry for more than 10 years and has been using

RPA about 2 years. I've been there where I feel how the technologies changed and evolved from time to time. For this case, RPA really makes my work-life easier. After the implementation, the major change that I can see is less customer complaints.

Interviewer: That's great. May I know why?

Interviewee: What I can tell is RPA speeds up the operations and reduces the amount of repetition.

Interviewee: So, may I know how does it relates with improving customer experiences?

Interviewee: when the operation can be speed up, we can reduce the amount time of delayed operations. Usually, customer always complain about the delayed operations before this. So, when we can counter the delay problem, it can contribute to an improvement in the satisfaction and loyalty of consumers.

Interviewer: What process do you think that can be seen getting better in customer experience context?

Interviewee: Hmm. Probably RPA can provide prompt and consistent services to customers. With that employees will have more time to concentrate on giving great service to clients if monotonous tasks can be automated away. In the end, each one of the customers wants to know that they are a priority, isn't?

Interviewer: I agreed. For the next question is do you think RPA can boost employee productivity?

Interviewee: Absolutely Akmal, we can see employee productivity significantly increased by using RPA.

Interviewer: Can you explain more?

Interviewee: Sure, RPA bots able to handle lot of data input tasks to improve accuracy, efficiency, and security. I realised that company altered the organizational dynamic by reorganizing work processes by enables top-level administration to realign everyone's priorities with the team's goals and the company's long-term objectives.

Interviewer: Can you give me an example? I still can't catch up with it.

Interviewee: Okay so basically, the end goal of us is moving freight from the point of origin to the destination in the most efficient manner possible. RPA can help us optimize our freight management by delivering goods on time, in the correct quantities and at the lowest possible cost. The example task that can use RPA is tasks planning optimization as well as appointment scheduling, load prioritization and consolidation, route optimization and freight accounting. In the end, each one of the customers wants to know that they are a priority.

Interviewer: now everything is clear. How about the error rate of RPA? aren't you afraid that the software will make a mistake?

Interviewee: As expected that you will ask this question. RPA has been fine- adjusting software program according to the task related. This method not only reduces the possibility of mistakes, but it also saves time compared to retraining workers. Most of the time I just let the software done his work and I focus on another task that is more important.

Interviewer: That is a very clear explanation of you. However, may I know is there any challenges on it?

Interviewee: I think the most crucial challenge in implementation of RPA is lack of knowledge and experiences.

Interviewer: Can you explain more on that?

Interviewee: Sure. I personally faced it when the first time I involved in using RPA. To comprehend the operation of automation, i need further education about the goal systems that the RPA was using.

Interviewer: So, I think it is important to take your time while establishing the RPA?

Interviewee: The initial setup to identify the system's work parameters with an incorrect input a slight inaccuracy during this stage of the operation might result in a substantial amount of meaningless data, since this crucial stage of the implementation process has a significant impact on the final result.

Interviewer: How does using this technology enhance your image or reputation among your colleagues or superiors?

Interviewee: I believe that using this technology enhances my image among my colleagues and superiors because it shows that I am proficient in using the latest tools and technologies. It also demonstrates that I am proactive in finding ways to improve my work efficiency and effectiveness. Additionally, it gives me the ability to complete tasks more quickly and accurately, which I think is viewed positively by my colleagues and superiors.

Interviewer: How important is the image-enhancing potential of this technology to you?

Interviewee: Using this technology makes me feel proud and accomplished. I believe that it showcases my skills and knowledge, and that it gives me an edge over my colleagues in terms of prestige and status. I feel that it helps to set me apart as an expert in my field and that it enhances my professional reputation.

Interviewer: How does this technology compare to other technologies you have used in terms of image enhancement?

Interviewee: I would say that this technology is on par with other technologies I've used in terms of image enhancement. I've had similar experiences with other technologies I've used in the past. I think it's important to note that image enhancement is not my main concern when I'm evaluating a technology, but it's a nice bonus.

Interviewer: Have you ever been in a situation where the image-enhancing potential of this technology helped you in a specific task or problem?

Interviewee: Yes, I have been in a situation where the image-enhancing potential of this technology helped me in a specific task. I was working on a project with a tight deadline and my team was struggling to find a solution. I suggested using this technology and it was able to solve the problem quickly and efficiently. My manager was impressed with my knowledge of

the technology and its capabilities, and it helped to enhance my image and reputation among my team and superiors.

Interviewer: How do you measure the results achieved by using RPA in your organization?

Interviewee: We measure the results achieved by using RPA in our organization by looking at key performance indicators such as process efficiency, accuracy, and cost savings. We track the time it takes to complete a process both manually and using RPA and compare the two. We also regularly monitor the accuracy of the output produced by RPA to ensure that it meets our standards. Additionally, we track cost savings by comparing the costs of manual labor to the costs of using RPA. We also track customer satisfaction and employee engagement as well.

Interviewer: What are other methods that you have done?

Interviewee: We measure the results achieved by using RPA in our organization by looking at key performance indicators such as process efficiency, accuracy, and cost savings. We track the time it takes to complete a process both manually and using RPA and compare the two. We also regularly monitor the accuracy of the output produced by RPA to ensure that it meets our standards. Additionally, we track cost savings by comparing the costs of manual labor to the costs of using RPA. We also track customer satisfaction and employee engagement as well.

Interviewer: Have you ever been in a situation where the results achieved by using RPA were not able to be demonstrated? How did that affect your perception of its usefulness?

Interviewee: Yes, I have been in a situation where the results achieved by using RPA were not able to be demonstrated. It was a situation where the RPA implementation had not been properly tested and validated before being put into production. The result was a lack of accurate data and metrics to demonstrate the results achieved. This experience made me realize the importance of thoroughly testing and validating RPA before implementation. It also made me question the usefulness of the technology, as I couldn't see the concrete benefits it provided. However, I also realized that this was an isolated incident, and that proper testing and validation can prevent these types of issues in the future.

Interviewer: How important is the result demonstrability of RPA to you in your job?

Interviewee: The result demonstrability of RPA is very important to me in my job. It allows me to see the tangible benefits of using the technology and to communicate those benefits to my colleagues and superiors. Being able to demonstrate the results achieved by using RPA is crucial for gaining support and buy-in from others in the organization. It also helps me to justify the investment in the technology and to assess its effectiveness over time. Without the ability to demonstrate results, it would be much harder to convince others of the value of RPA and to make informed decisions about its continued use.

Interviewer: I guess that is all my question for now. I've gathered every information needed from you.

Thank you for your time. Is there anything you wanted to add?

Interviewee: It is okay as everything is good. I don't have anything to add but if you have any question later on, you can always reach me thru WhatsApp.

Interviewer: Thank you very much sir. It was a nice and smooth interview session with you. I hope you have a good day.

RESPONDET B TRANSCRIPT

Interviewer: Assalamualaikum and good evening, sir. My name is Akmal Saufi bin Mohd Rosli, undergraduate students of Bachelor of Technology Management (Supply Chain and Logistics) with Honours from Universiti Teknikal Malaysia Melaka (UTeM). Currently, I am conducting research on Benefit and Challenges in Robotic Process Automation: A Case Study in DHL Global Forwarding (M) Sdn Bhd Malaysia.

Interviewee: Waalaikumsalam, yes, I still remembered about your topic. How may I help you?

Interviewer: First, thank you for your time to do this interview.

Interviewee: Sure, no problem.

Interviewer: So, the first question is may I know about your general knowledge in RPA?

Interviewee: I do think Robotic process automation is the automation of repetitive, low-level operations often performed by humans and performed by software or hardware systems that may switch between different types of software.

Interviewer: So how long you have been using this software?

Interviewee: This year is my fourth year of using RPA. So, I can say that I'm quite familiar with this software.

Interviewer: Can you describe a situation where you had to use a technology that you were not familiar with in your job?

Interviewee: I once had to use a new data visualization tool in my job. I had never used it before, and I was not familiar with its interface or capabilities. I felt a bit intimidated at first, but I decided to take on the challenge. I watched online tutorials and read the documentation, and I was able to quickly learn how to use the tool. It was a valuable learning experience, and I ended up using the tool for several projects. It helped me to gain new insights from the data and it made my job more efficient. Even though it was a new technology, it helped me to improve my work and I was able to demonstrate the results to my manager and colleagues.

Interviewer: How did you evaluate usefulness of RPA in relation to your job tasks and responsibilities?

Interviewee: I evaluate the usefulness of RPA in relation to my job tasks and responsibilities by analysing how it improves efficiency and accuracy in the processes I am responsible for. I also look at how it affects the workload and how it can reduce the time spent on manual tasks. Additionally, I consider how it impacts customer satisfaction and employee engagement. I measure these metrics before and after implementing RPA to assess its effectiveness.

Interviewer: In what ways did you think RPA would improve your job performance?

Interviewee: Another way I thought RPA would improve my job performance is by reducing the amount of repetitive and mundane tasks that I had to perform. As an example, if I worked in an accounting department, I would have to spend a lot of time on data entry and

reconciling accounts. RPA could automate these tasks, freeing up my time to focus on more complex and value-added tasks, such as analysing financial data and identifying potential savings. This would improve my job performance by allowing me to work more efficiently and effectively. Additionally, RPA can also improve the accuracy and consistency of the work. This can be a benefit in the context of my job performance as it eliminates human errors and ensures that the work is done to a high standard.

Interviewee: Furthermore, RPA can improve my job performance by providing me with real-time data and analytics. For example, if I were working in a supply chain management department, RPA could be used to gather data from multiple systems and present it in an easy-to-read format, allowing me to make better decisions and improve the overall performance of the supply chain.

Interviewee: Finally, RPA can also improve my job performance by enabling me to work more independently. Since RPA can take over repetitive tasks, it allows me to focus on more complex and strategic tasks, increasing my job satisfaction, motivation and performance. Overall, I thought that RPA would improve my job performance by reducing the amount of repetitive and mundane tasks, increasing the accuracy and consistency of the work, providing me with real-time data and analytics, and enabling me to work more independently.

Interviewer: What do you think of RPA? Does it give more pros than cons or otherwise?

Interviewee: That is a great question. For me its hard to said which more or which less. Based on my experience, I think no matter how good the technology is, there will still have their own challenges and difficulties. So, what can we do is just encounter the problem in the most effective way.

Interviewer: Does RPA somehow affect customer service?

Interviewee: Yes, it does. Do you know that RPA help our company by providing a unified service across all touchpoints with customers.

Interviewer: Can you explain more about that?

Interviewee: Firstly, a task that used RPA software enhanced the quality of customer service in several ways. By reducing administrative and back-office tasks such as collecting data from various systems, the execution of service requests, and the updating of client records are all sped up by software robots. It ultimately enhances client satisfaction.

Interviewer: Besides that, does RPA bring benefit to you in your work context?

Interviewee: Yes, I believe that the most significant benefit of RPA is that it allows me to devote my time and energy to more meaningful projects rather than facing the same things over and over again. And I can see a result which employee morale and retention improve dramatically after the implementation of RPA. It feels weird but it is real.

Interviewer: It relates to employee morale and retention also? How?

Interviewee: It is like, they will be focus on working together, exchange ideas freely, and readily transfer information across departments because trust me, RPA really saves time. We have a lot of time to focus on others. We can devote ourselves to identify problems, conduct in-depth investigations, apply cross-functional optimization, and the most important thing is to boost customer happiness.

Interviewer: Is there any benefits you wanted to add?

Interviewee: Hmm. Yes, there is another one. RPA can operate nonstop with pinpoint precision, reducing the room for human mistake, and maximizing processing speed. RPA is carried out with attention to detail. By using RPA, not only are human mistakes reduced, but regulations are followed, and procedures are carried out more quickly.

Interviewer: Is there any difficulties or challenge during implementation of RPA?

Interviewee: The most difficult aspect of working with a software robot is generally fine-tuning to make it function. Usually, I may need to spend some time tuning the RPA settings and parameters until it performs precisely as I want. There is an obvious need for technical reskilling to handle this challenge. But there's a positive outcome which I can see most of the employees in can do basic in implementing RPA.

Interviewer: Is it necessary to learn IT for RPA?

Interviewee: Just learn the basics on how to set up the RPA. Because above all IT help is still required, but others stated that after learning certain coding, they were now able to repair some mistakes on their own. Learning new abilities, such as programming and coding, can help their career development.

Interviewer: As you said that RPA can reduce human error, do you totally trust the software?

Interviewee: I can't say that I trust RPA totally. I always reviewed everything twice to make sure it was error-free. Depending on and adjusting to certain systems might be challenging. The software was at first hard to accept. It is not easy to relax and let fate take its course. I wasn't always certain that the software robot was doing the correct thing, so I had to go in and double check to make sure it was running properly.

Interviewee: So, we can't really depend on the software bluntly. How about other challenges?

Interviewee: When working with RPA, the challenge is we must improve their analytical and decision-making abilities. Sometimes data interpretation still requires a lot of careful study and expertise to examine the data supplied and make a conclusion. It's troublesome that I must understand when to utilize the algorithm as a guideline and when to disregard the information.

Interviewer: Have you ever been in a situation where the results achieved by using RPA were not able to be demonstrated?

Interviewee: I have not been in a situation where the results achieved by using RPA were not able to

be demonstrated. Our RPA implementation process includes thorough testing and validation before deployment, and we have robust monitoring and reporting systems in place to track performance and results. Additionally, we have a dedicated team that handles maintenance and troubleshooting, which helps us to quickly address any issues that arise.

Interviewer: How does using this technology enhance your image or reputation among your colleagues or superiors?

Interviewee: Using RPA enhances my image or reputation among my colleagues and superiors by demonstrating my ability to implement and manage new technologies effectively. It also shows that I am proactive in finding ways to improve processes and increase efficiency. Additionally, my colleagues and superiors can see the tangible benefits of using RPA, such as reduced errors and increased productivity, which can reflect positively on my work.

Interviewer: How important is the image-enhancing potential of this technology to you

Interviewee: The image-enhancing potential of this RPA is very important to me as it can help me to demonstrate my technical skills and ability to manage new technologies effectively. It can also showcase my dedication to improving processes and increasing efficiency. Additionally, the image-enhancing potential of this RPA can also reflect positively on my work and help me to gain recognition and respect among my colleagues and superiors.

Interviewer: Have you ever been in a situation where the image-enhancing potential of this technology helped you in a specific task or problem

Interviewee: Yes, I have been in a situation where the image-enhancing potential of this RPA helped me in a specific task. There was a process that was taking a lot of time to complete and was prone to errors. By implementing RPA, we were able to automate the process and improve its efficiency. This resulted in cost savings for the company and a reduction in errors. My colleagues and superiors were impressed with the results, and it helped to enhance my image and reputation within the organization.

Interviewer: How do you measure the results achieved by using RPA in your organization?

Interviewee: We measure the results achieved by using RPA in our organization by tracking metrics such as process completion time, error rate, and resource utilization. We also gather feedback from the end-users of the process to gauge their satisfaction with the automation. Additionally, we measure the ROI of the RPA implementation by comparing the costs of manual labour to the costs of using RPA. We also track the number of transactions processed and the number of FTEs saved. We use these metrics to evaluate the performance of our RPA processes and to identify areas for improvement.

Interviewer: How important is the result demonstrability of RPA to you in your job?

Interviewee: The result demonstrability of RPA is extremely important to me in my job. It allows me

to see the tangible benefits of using technology and to communicate those benefits to my colleagues and superiors. Being able to demonstrate the results achieved by using RPA is crucial for gaining support and buy-in from others in the organization. It also helps me to justify the investment in technology and to assess its effectiveness over time.

Interviewer: Have you ever been in a situation where the results achieved by using RPA were not able to be demonstrated?

Interviewee: Yes, I have been in a situation where the results achieved by using RPA were not able to be demonstrated. It was a situation where the RPA implementation had not been properly tested and validated before being put into production. The result was a lack of accurate data and metrics to demonstrate the results achieved. This experience made me realize the importance of thoroughly testing and validating RPA before implementation. It also made me question the usefulness of the technology, as I couldn't see the concrete benefits it provided. However, I also realized that this was an isolated incident and that proper testing and validation can prevent these types of issues in the future.

Interviewer: I guess that is all my question for now. I've gathered all the information needed from you. Thank you for your time. Is there anything you wanted to add?

Interviewee: It is okay as everything is good. I don't have anything to add but if you have any questions later on, you can always reach me thru WhatsApp.

Interviewer: Thank you very much sir. It was a nice and smooth interview session with you. I hope you have a good day.

Respondent C Transcript

Interviewer: Assalamualaikum and good evening, sir. My name is Akmal Saufi bin Mohd Rosli, undergraduate students of Bachelor of Technology Management (Supply Chain and Logistics) with Honours from Universiti Teknikal Malaysia Melaka (UTeM). Currently,

I am conducting research on Benefit and Challenges in Robotic Process Automation: A Case Study in DHL Global Forwarding (M) Sdn Bhd Malaysia.

Interviewee: Waalaikumsalam, yes, I still remembered about your topic. How may I help you?

Interviewer: First, thank you for your time to do this interview.

Interviewee: Sure, no problem.

Interviewer: So, the first question is may I know about your general knowledge in RPA?

Interviewee: RPA is a kind of automation technology that is replacing routine labour in many businesses today. It's cutting-edge tech that employs AI and machine learning to make computers act like humans.

Interviewer: Can you describe a situation where you had to use a technology that you were not familiar with in your job?

Interviewee: One situation that comes to mind is when our team was tasked with implementing a new CRM system for our department. I had never used this specific system before and I was a bit apprehensive about it at first. However, I knew that it was crucial for our team to be able to use it effectively in order to improve our workflow and customer service. I took the initiative to attend training sessions and workshops, and I also reached out to other colleagues who had experience with the system for guidance. Through this process, I was able to become proficient in the system and I was able to help my team members to get familiar with it as well. It was a bit challenging at first but it was worth it in the end, as it helped us to be more efficient and effective in our jobs.

Interviewer: How did you evaluate usefulness of RPA in relation to your job tasks and responsibilities?

Interviewee: In evaluating the usefulness of RPA in relation to my job tasks and responsibilities, I focus on how it helps me to accomplish my goals more efficiently and effectively. I consider how the automation process affects the speed and accuracy of the tasks, and how it improves the overall workflow. I also consider the level of complexity of the tasks and how RPA can simplify them. I gather feedback from colleagues and superiors to see how it's impacting them as well.

Interviewer: In what ways did you think RPA would improve your job performance?

Interviewee: As a human resource manager, I thought that RPA would improve my job performance by streamlining HR processes and increasing efficiency. For example, RPA could automate tasks such as data entry, onboarding new hires, and processing employee benefits. This would free up my time to focus on more strategic and value-adding tasks, such as talent management and employee engagement.

Interviewee: Furthermore, I thought RPA would improve my job performance by improving data accuracy and consistency. By automating data entry and other HR processes, I can reduce the risk of human error, ensuring that all HR data is accurate and up to date. This would be beneficial for compliance and decision making.

Interviewee: Additionally, RPA could improve my job performance by helping me to identify trends and patterns in employee data. By automating data collection and analysis, RPA could help me to identify areas of the business where employee engagement is low, turnover is high, or other issues that need to be addressed. This would enable me to take action to improve employee satisfaction and retention, which would ultimately improve the overall performance of the organization.

Interviewee: Lastly, RPA can also help me to respond to employees' requests in a timelier manner. For example, automating the leave request process would ensure that employees' requests are processed quickly and accurately, improving their satisfaction, and reducing the load on the HR team. Overall, as a human resource manager, I thought that RPA would improve my job performance by streamlining HR processes, increasing efficiency, improving data accuracy, identifying trends and patterns, and responding to employees' requests in a timelier manner.

Interviewer: Do you gain any benefit from implementation of RPA?

Interviewee: There is a lot of benefit! I Think RPA can improved job tracking, knowledge sharing, and consistent service delivery, all which aid us in providing better customer support.

Interviewer: How does all the task you stated can provide better customer support?

Interviewer: It is easy because when you can reduce the amount of time spent on repetitive tasks, let say updating customer requests, it will make us concentrate only on interacting with customers and focus more on other vital projects.

Interviewer: What are the other examples to boost customer experiences?

Interviewee: To boost customer experience is to answer each of their questions about us which is DHL in real time by presenting them with readily available, accurate information.

Interviewer: So that’s what the robot does?

Interviewee: Yes. By placing RPA on the site, DHL can capture vital consumer data in real time as they respond to questions about items and expand our database. They will think that their time is precious to you if you provide them with top-tier experience. We can achieve that with the help of RPA.

Interviewer: Does it somehow increase the efficiency and productivity of your company?

Interviewee: Of course, as RPA allows for a continuous flow of work even after you go back home after work. Even at night, RPA is still functioning, putting off human attention for any problems until morning. Machines are not like us. they don’t need a rest.

Interviewer: Is there any other benefits that you gain?

Interviewee: I think RPA can reduce errors in each department. Sometimes, employees or even me key in incorrect data. I can say that humans are not perfect. So, after implementation of RPA, it can allow us to have more precise data entry operations. With that, employees like us don’t have to worry much about wrong data and save us a lot of time. So, we can do other

tasks which are more important.

Interviewer: Do you acquire new skills while using RPA?

Interviewee: This is funny because I learnt something new that is not even my major which is about troubleshooting or fault management. I need to learn how to identify where the error or issue occurred. The next step might be to adjust the settings and change the input type or source. Basically, I learnt how to handle the software.

Interviewer: How confident do you use the RPA?

Interviewee: Not understanding the full scope of what the program can accomplish or confirming what I am presently doing. Working with software robots makes it difficult to get a second opinion or examine material since I'm not sure of their correctness for certain activities.

Interviewer: Can you elaborate more?

Interviewee: It was incapable of comprehending subtleties or fresh scenarios. It doesn't have the ability to think; it just responds to particular orders and can't figure out what we want from it if anything is somewhat different from its planned method.

Interviewer: How does using this technology enhance your image or reputation among your colleagues or superiors?

Interviewee: RPA has a positive impact on my image and reputation among my colleagues and superiors by showcasing my technical skills and ability to identify areas of opportunity for automation. It also demonstrates my commitment to continuous improvement and my ability to effectively implement new technologies. Additionally, my colleagues and superiors can see the positive impact of RPA on overall business performance, and it shows that I am able to adapt and improve my job performance.

Interviewer: How important is the image-enhancing potential of this technology to you

Interviewee: The image-enhancing potential of this RPA is not a significant consideration for me, my primary focus is on how it can improve the efficiency and accuracy of the processes that I am responsible for. However, I do recognize that being able to demonstrate the positive impact of RPA on overall business performance can enhance my image and reputation.

Interviewer: Have you ever been in a situation where the image-enhancing potential of this technology helped you in a specific task or problem

Interviewee: No, I have not been in a situation where the image-enhancing potential of this RPA helped me in a specific task or problem. My focus is on how RPA can improve the efficiency and accuracy of the processes and the overall performance of the organization. However, I do recognize the value in being able to demonstrate the positive impact of RPA on the organization, which can enhance my image and reputation among my colleagues and superiors.

Interviewer: How do you measure the results achieved by using RPA in your organization?

Interviewee: As a member of the human resources department, we measure the results achieved by

using RPA in our organization by analyzing key performance indicators such as process efficiency, accuracy, and cost savings. We also track the impact of RPA on employee engagement and satisfaction. We use employee surveys and feedback to gather information on the ease of use of RPA and the impact on their workload. Additionally, we track the number of FTEs saved and the time saved by automating processes, which helps us to assess the overall impact of RPA on our workforce. We also track the retention rate of employees who are using RPA. We use these metrics to evaluate the performance of our RPA processes and to identify areas for improvement. We also track customer satisfaction and employee engagement as well. This approach provides a good balance between quantitative and qualitative metrics to evaluate the performance of our RPA processes.

Interviewer: Have you ever been in a situation where the results achieved by using RPA were not able to be demonstrated?

Interviewee: Yes, I have been in a situation where the results achieved by using RPA were not able to be demonstrated. It was due to a lack of proper training and knowledge of the RPA software, which led to inaccuracies in the automation process. We identified the problem, provided the necessary training and guidance, and were able to recover the results of the process and demonstrate them to the stakeholders. This experience reinforced the importance of proper training and knowledge of RPA software in ensuring accurate and effective automation.

Interviewer: How important is the result demonstrability of RPA to you in your job?

Interviewee: Result demonstrability is a crucial aspect of RPA in my job. It gives me the ability to measure the performance of the automation process and identify areas for improvement. Being able to demonstrate the results achieved by using RPA is also important for communicating the value of the technology to stakeholders and decision makers. Without the ability to demonstrate results, it would be much harder to gain support and justify the investment in RPA.

Interviewer: I guess that is all my question for now. I've gathered all the information needed from you. Thank you for your time. Is there anything you wanted to add?

Interviewee: It is okay as everything is good. I don't have anything to add but if you have any questions later, you can always reach me BACK.

Interviewer: Thank you very much sir. It was a nice and smooth interview session with you. I hope you have a good day.