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ANALYSIS ROLE OF ROBOTIC PROCESS AUTOMATION IN ACCOUNTING AND BUSINESS

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ABSTRACT

Robotic Process Automation (RPA) is a revolution in automation technology that can improve company competitiveness. The purpose of this study is to provide theoretical and empirical evidence of the benefits and role of robotic process automation in accounting and business. The method used in this research is descriptive research method, where this research collects detailed data from various literatures. Robotic Process Automation (RPA) is software or technology that enables software to perform business processes efficiently and quickly. So as to reduce worker errors, research results show that robotic process automation (RPA) is a software or system that can help companies in accounting and business, such as sending messages to many customers using technology/systems. Decision Minister of Industry and Trade Number 121/MPP/Kep/2/2002 which explained that the financial statements. The company must be audited. Based on the regulation, the auditor will remain survive the emergence of RPA.

Keywords: *Robotic Process Automation, Accounting, Business, Decision Making*

1. INTRODUCTION

The company will continue to seek strategic steps to increase productivity and increase cost effectiveness. Increasing productivity and cost effectiveness can be done by implementing advanced robotics technology and computer systems controlled by "robots" called robotic process automation [1]. This technology is capable of developing applications that can mimic human actions. RPA is a robot in the form of software with a digital system to help humans do repetitive work. Robotic process automation (RPA) helps humans have more opportunities to be more productive in doing interesting and creative work, and humans will also be more efficient. Humans will not be bored by doing repetitive work, humans will be more agile in creating new innovations to increase business opportunities for companies. RPA technology can be seen in everyday life, for example the process of payment transactions on toll roads and parking lots [2].

In a case study released by Infosys, RPA implementation can reduce Full Time Equivalent (FTE) by 50%, and reduce manual work by 58%. However, RPA does not exist to replace the role of humans in corporations, but RPA aims to improve employee outcomes, so that robots will become effective and powerful assistants [13]. With close interaction between humans and robots, companies will be able to provide better service and employees will have more time to do more valuable work. Each corporate industry, such as telecommunications, financial services, manufacturing, hospitality, media and transportation has a different process. So it's not easy to get a list of automated processes for specific industry and business functions. Banks, financial institutions and insurance companies process a large number of operations every day. In sectors that require intensive and large operations, RPA can be used as a virtual worker, assisting humans in carrying out daily and repetitive tasks. RPA enables modern banks to meet their high demands for information capture capabilities, security, and data quality, while also increasing operational efficiency. In credit card applications, RPA is used to handle tasks such as issuing cards to users. RPA increases the speed and accuracy of tasks, which in turn increases productivity.

Robotic Process Automation (RPA) is a technological concept that uses robots to assist humans in doing repetitive work. RPA is software that is capable of imitating human activity on a computer with up to 100% speed and accuracy. Through technological developments and digital transformation, practitioners divide technology into

three categories, such as probots, knowbots and chatbots. RPA itself is the evolution of three main technologies, namely screen wrapping, workflow automation, and artificial intelligence [14]. Robotic Process Automation or RPA is a software technology for building, deploying, and managing robotic software to mimic human actions. This software can carry out light actions that humans do when interacting with digital systems and software. For example, navigating the system, identifying data, and various other light jobs that are done repeatedly [16]. In practice, RPA is generally used to perform simple business tasks automatically. The software can work faster, more consistently, and with fewer errors when compared to human labor [16]. The research currently underway is a much broader implementation of RPA. That this RPA is growing with the existence of technology that makes this RPA used in various work sectors to facilitate human work to be more effective [4]. Previous research explained how the challenges of an accountant in the future with the development of RPA and the strategies that accountants must take in dealing with the emergence of RPA [4]. While the current research is how the process of RPA works which does not only have an impact on companies that need technology such as financial services, e-commerce, digital and so on, but the emergence and benefits of RPA have had an impact on all sectors of work. The motivation for current research is that there are technological advances that continue to evolve from time to time, making humans need RPA to facilitate more effective work in various fields [4]. However, this can also be a challenge for workers, that the role of RPA in the world of work does not mean that it can completely shift the role of humans [4]. The role of humans will certainly always be needed even though RPA is also very important to emerge [15]. This research aims to make readers understand the benefits and role of RPA in depth, but also to deal with it with various strategies so that jobs that require humans are still needed in the world of work [15]. Thus, the contribution of this study provides theoretical and empirical evidence about the benefits and role of robotic process automation in accounting and business [4]. The results of this study are expected to provide benefits to academics regarding the analysis of the role of robotic process automation in accounting and business; For future researchers, it is hoped that the results of this study can add references for further research regarding the analysis of the role of robotic process automation in accounting and business and can be used for further academic needs as well as for providing study materials for students in need [4].

2. LITERATURE REVIEW

After the researchers reviewed several studies that Robotic process automation can mimic human actions and can operate various applications with a user interface. Can process data in a structured format and work continuously because it has high accuracy [5]. There are several explanations namely, Robotic Process Automation (RPA) is a software technology with digital systems to perform simple, repetitive tasks and business processes that are normally performed by humans. RPA is a software technology that is easy for anyone to use to automate digital tasks [5]. RPA automation allows users to create bots by observing human behavior in the digital world [5]. Bots are able to learn, imitate, and carry out business processes according to the rules that have been made. RPA software bots are able to interact with any application or system, can operate around the clock (non-stop), and have a faster process with reliability and precision close to 100%. Robotic Process Automation (RPA) is a software that can mimic mouse clicks and keyboard taps to complete work processes. Just like humans, RPA can do things like understand what's on a computer screen, identify and extract data, as well as perform various specified actions. With Robotics Process Automation, users can create software robots, or "bots," capable of learning, emulating, and then executing rule-based business processes. In other words, RPA allows users to create bots by observing human digital actions [6].

Robotic process automation is software capable of imitating human activity in digital systems with up to 100% speed and accuracy. Robotic process automation is a software that assists in completing work performed on digital systems (computers and mobile devices) usually imitated in the form of mouse clicks and keyboard taps in completing the work process [7].

Robotic process automation (RPA) is a technology capable of automating high-volume processes so that repetitive and manual digital work is performed by software robots, or bots. Typically, bots perform tasks that are simple and structurally repetitive, at complexities much higher than the capabilities of the average human [8]. RPA can increase the speed and accuracy of business processes [8]. For example when updating

employee contacts, revenue data or transferring one program to another software, and transferring customer data from spreadsheets to the CRM (Customer Relationship Management) system. Robotic process automation can be seen in figure 1 as follow [7] :

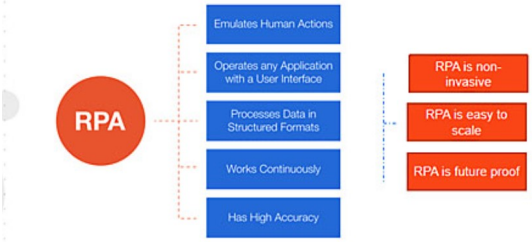

Figure 1 : Robotic process automation

RPA robots utilize the user interface to capture data and manipulate applications like humans. Then, this RPA robot can interpret, trigger responses, and communicate with other systems to perform various repetitive tasks. RPA is arguably the evolution of three main technologies: screen scraping, workflow automation, and artificial intelligence. Screen scraping is the process of collecting screen display data from legacy applications so that the data can be displayed by a more modern user interface. Meanwhile workflow automation software eliminates the manual data entry process so as to increase speed, efficiency and accuracy. Meanwhile, artificial intelligence is an artificial intelligence system capable of carrying out tasks that generally require human intervention and intelligence [5, 19].

There are several business processes that qualify for automation by RPA. First, the process is very manual and repetitive. Second, the rule-based process. Activities with clear processing instructions with standardized and predictive rule-based decision making. Third, the exception rate is low. Activities with a low number of variation scenarios exist in the process leading to different handling procedures. Fourth, process with readable standard electronic input types. Processes are triggered by standard, consistent input. This input must be in a readable input type like Excel, Word, email, xml, PPT, PDF readable. Processes triggered by unreadable input types such as scanned images without OCR are not discarded to automation. Fifth, high volume. Processes with high transaction volume and high frequency. Sixth, the processing method can be changed or system changes. Processes whose processing methods cannot be changed for various reasons and do not require fundamental changes in the underlying technical architecture of the current system. We strongly recommend avoiding automation in processes where change is expected in the short/medium term. Seventh, the potential for operational efficiency. Automating only those processes can provide savings in terms of human effort of a minimum of 2 full time employees. Eighth, the process is mature and stable. Processes tend to be well-documented, stable and predictable with well-known running costs [7, 20].

RPA is an evolution of 3 main technologies, namely: (1) Screen scraping is the process of collecting screen display data from legacy applications so that the data can be displayed by a more modern user interface; (2) Workflow is a process in RPA that eliminates the manual data entry process to increase speed, efficiency, and accuracy; (3) Artificial intelligence is an artificial intelligence system that can carry out tasks that require human intervention and intelligence. Robotic Process Automation function as follow : (1). Robotic process automation mimics human actions; (2) Robotic process automation operates any application with a user interface; (3) Process data in a structured format; (4) Work continuously; (5) Robotic process automation has high accuracy.

Characteristics of Robotic Process Automation (RPA) [7]

1) Robotic process automation (RPA) is non-invasive. Robotic process automation does not require major changes to the information technology architecture or deep integration with the underlying systems. Robotic process automation offers a reliable, fast, and cost-effective solution for “lightweight” integration into processes and information technology assets.

2) Robotic process automation is easy to scale. The amount of work involved in a process can vary, as change tends to occur in most business environments. If a robotic process automation solution is used, companies can easily adapt by scaling up or down the solution, depending on requirements.

3) Robotic Process Automation is future proof. Robots work with today's technology, but automation can be expanded, being able to handle future technology.

4) RPA is Agnostic. The agnostic nature of RPA allows this robot to perform in cross-type applications.

5) RPA Mimics Human Actions. RPA is able to take action quickly because of its ability to imitate and follow human roles.

6) RPA is Scalable. RPA also has a scalable nature that is easy to integrate. So that this system can easily handle changes in workload, both reductions and additions, according to work requirements.

7) RPA is Easy to Learn. Another characteristic possessed by RPA is that it is easy to learn. RPA was developed to make it easy for non-technical people to use. RPA is also designed without programming code, making it easier to learn.

Benefits of Robotics Process Automation (RPA). The benefits of using RPA to meet modern business challenges include the following [8]:

1) Save Time. Process automation allows companies to save time on internal processes, such as creating new employee records, processing claims, updating passwords in bulk, processing invoices from vendors, updating customer records, aggregating information from various IT applications for mailing to customers, etc.

2) Accelerating Digital Transformation RPA is the result of innovative technological sophistication. By implementing RPA in a work system.

3) Save Costs. The conventional way of making multiple IT applications connected to each other and transferring data seamlessly requires the API of these applications to perform “integration”.

4) Increase Employee Satisfaction. Employees can pay attention to more important tasks instead of putting their time into mundane and repetitive tasks such as updating information into multiple databases.

5) Flexible. One of RPA's strongest points is being able to use the same IT systems as an FTE (full-time employee) – minus the complicated integrations with all the applications.

6) RPA is Reliable. Because RPA is a robot, it doesn't get sick, tired, or bored. RPA can record activities that have been completed so that it can easily track work.

7) High Quality and Accurate. Since humans tend to experience burnout, they may forget things and allow a certain degree of carelessness and error. The human factor can turn disastrous for a business, due to the possibility of distorting data.

8) Improve Result Accuracy. The most important difference between Robotic Process Automation and traditional power is the accuracy of the results. RPA has been designed with a certain algorithm so that it can minimize errors in work.

9) Higher Productivity. RPA robots can work 24 hours a day, seven days a week. This allows more work to be done per employee, increasing productivity significantly.

10) Comply with User-Made Rules. RPA robots can follow exact steps as required according to government regulations. The software robots also do not skip steps, ensuring process adherence.

Type Robotic Process Automation (RPA)

Robotic process automation can work in two types of modes, namely the attended mode and the unattended mode.

1) Attended Mode. Bots with attended mode will require a human to run them. Attended mode usually runs on the local desktop, meaning it manipulates the same front office programs that are used by the end user. Attended mode is useful for users to quickly coordinate simple but tedious tasks, such as finding and retrieving specific customer data.

However, in general, the main benefits obtained from the implementation of attended mods are: (1) Fast implementation time; (2) Fast return on investment; (3) Not disrupting existing workflows.

2) Unattended Mode. Meanwhile, unattended mode is a bot that is used for back office functions that have a broader impact on workflow. Unattended mode usually runs on an organization's servers with little or no human intervention. This mode will run on a predetermined schedule or in real time 7 times 24 hours a year. The general benefits that can be obtained from implementing unattended mode include: (1) Digital transformation is the main advantage of unattended mod; (2) Optimizing company-wide processes; (3) Has greater ROI potential.

Processes to be automated by Robotic Process Automation [7]

Figure 2 : Processes to be automated by Robotic Process Automation

Processes that qualify for automation by Robotic Process Automation are as follows [7]:

Basically, iterative, high-volume, business rule-driven, iterative processes qualify for automation [7].

1) Very manual and repetitive process. This is a high transaction volume process, a process that runs very frequently daily & weekly, not monthly or yearly involving high manual work or work prone to human error.

2) Rule-based process. Activities with clear processing instructions with standardized and predictive rule-based decision making.

3) Low exclusion rate. Activities with a low number of variation scenarios exist in the process leading to different handling procedures.

4) Process with readable standard electronic input types. Processes are triggered by standard, consistent input. This input must be in a readable input type like Excel, Word, email, xml, PPT, PDF readable. Processes triggered by unreadable input types such as scanned images without OCR are not discarded to automation.

5) High volume. Process with high transaction volume and high frequency.

6) Changeable processing method or system change.

7) Potential operational efficiency. Automating only those processes can provide savings in terms of human effort of a minimum of 2 full-time or FTE employees.

8) Mature and stable process. Processes tend to be well-documented, stable & predictable with well-known running costs.

Examples of Business Processes that are generally automated with Robotic Process Automation (RPA) [7]:

Figure 3 : Business Processes that are generally automated with Robotic Process Automation (RPA)

The industries and processes where RPA is commonly applied are as follows [7]:

1) Finance Department : (1) Process-to-pay; (2) Order-to-cash; (3) Record-to-report

2) Supply Chain Department; (1) Inventory management; (2) Demand & supply; (3) Planning.

3) Human Resources Department: (1) Payrolls; (2) Onboarding & offboarding; (3) Benefits administration.

4) Information Technology Department; (1) Server & app monitoring; (2) Routine maintenance & monitoring.

5) Customer Services Department: (1) Address changes; (2) Password reset; (3) Payments

3. RESEARCH METHODOLOGY

The method used in this research is descriptive research method, where this research collects detailed data from various literature such as scientific journals and the internet and then conveys in-depth conclusions in a systematic and actual way [18]. The steps used are: 1. Literature study. At this stage, exploration of the research concept is carried out through literature study. 2. Observation Observations are made by observing various RPA implementations carried out by companies through various sources of information obtained from the internet. Researchers will explain the benefits and role of robotic process automation in helping accounting and business automation. The primary data used is the result of interviews with accounting practitioners and experts who use robotic process automation in carrying out the company's operational activities. The primary data used is data generated from interviews regarding the benefits and role of robotic process automation [1].

4. RESULT AND DISCUSSION

The advantages of using RPA in companies are as follows [8] :

1) Reduce Cost: By automating employee routine tasks, RPA will achieve operational savings of up to 30% over the resulting productivity output.

2) Better customer experiences: Implementing RPA will provide real benefits for company resources to stay focused on customer satisfaction.

3) Lower operational risk: RPA will help companies to reduce the risk of human error that occurs due to a lack of knowledge in operating the system.

4) Improved internal processes: RPA will help companies to improve reporting processes to be faster, employee onboarding is faster and internal activities by increasing robot capabilities through Artificial Intelligence (AI) and Machine Learning (ML) then companies will be forced to define their governance procedures clearly [8].

The right industry uses Robotic Process Automation as follows [9]:

1) Insurance. In the insurance industry, RPA is able to reduce costs and improve customer experience by automating claims processing and administration, reports, audit management, updating customer information, registration and eligibility assessment of customers and much more.

2) Banking. The world of banking has become a very large industry and is capable of creating its own "world". Currently, there are many known mobile banking superapps that create a new era in financial services. RPA can help with this by automating the processing of new applications, data migration, credit decisions, customer onboarding, regulatory compliance, mortgage and loan origination and customer service.

3) Health. The health industry has many health documents that are exchanged between divisions. RPA is able to improve patient experience and increase compliance by automating medical record and data management, patient pre-authorization, operational analysis, and claims processing.

4) Manufacturing. Overcome manufacturing processes by automating shipping costs, ERP processes, inventory management, transportation management, shipping costs, purchase order processing, invoice verification, receipt confirmation.

5) Public sector. RPA facilitates connectivity and performance in the public sector by automating procurement, human resources, and financial processes.

6) Science. RPA can help fuel innovation and operational agility in science by

automating back-office productivity, lifecycle management, tracking product safety issues, supply chain management, handling clinical trial data, and handling complaints. RPA is especially useful for compliance because it can ensure compliance reporting is done correctly every time. Another benefit of RPA is being able to create greater ROI in facilitating digital transformation, enabling additional income opportunities and getting employees to focus on improving work that focuses on business processes [9].

RPA Implementation in Corporations [10]

RPA can run 24/7 without stopping, so the quality of work will increase. RPA works best with regular, rule-based tasks that require manual input. At the beginning it was explained that using RPA is able to automate business processes. RPA has greater benefits for businesses, including the following [10]:

1) Maximum productivity. RPA bots make employees more productive because they can speed up workflows and are able to get a lot of work done by running processes automatically. In industries that require a lot of data documentation processes such as the financial, insurance and public sector industries, RPA bots can handle form filling and claims processing automatically.

2) Precise accuracy. With 99.99% accuracy, there will be no rework with near-perfect compliance. The use of RPA in the financial, health and sciences industries can help achieve strict compliance standards. In the accounting industry, RPA is able to increase speed and precision in the order-to-cash and procure-to-pay processes.

3) Cost savings. The RPA bot features an intuitive code-free interface that allows you to quickly master making bots. This will drive ROI quickly. Employee work time will be cut by 40% from administrative work compared to when done manually. In the healthcare industry, RPA bots are able to automate process execution and identify patient results precisely.

4) Can be integrated with other platforms. RPA is application-agnostic, so that in its implementation there is no need to replace the system, because RPA can be integrated with other existing platforms in the company. Companies will get efficiency and effective collaboration results.

5) Great customer experience. RPA bots used in the front office, help agents interact with customers. Customer experience improved 50% and was able to result in reduced call handling time.

6) Utilize Artificial Intelligence (AI). When artificial intelligence (AI) is combined with RPA to create Intelligent Automation, it is able to leverage 80% of an enterprise's unstructured data.

7) Scalability. RPA makes complex business processes easier and adaptable to uncertain times and changing digital environments. Any workload can be handled flexibly [10].

Proper use of RPA will deliver ROI quickly and will create a maximized customer experience. The company will be able to sustain and be one step ahead of its competitors. An example of the application of this robotic software in Business Operations [17]:

1) Data update. Several divisions frequently update data, such as customer data and so on.

2) Data validation. Apart from performing automatic updates, RPA can also perform data validation so that it is possible to avoid fraud.

3) Data extraction, document scanning, etc. RPA is a robotic technology equipped with machine learning that can read documents. So, it can do work such as extracting data to scanning documents.

Marketing And Sales

1) Lead nurturing. Leads can come from multiple platforms like LinkedIn, submission forms, vendors, etc.

2) Create and send invoices. Another advantage of RPA is that you can update accounting records, prepare, or send invoices from the right email account.

3) Updating CRM. Besides being able to update customer data automatically, RPA can also update CRM data to help sales work more efficiently.

Customer Service

1) Conduct initial diagnosis. Robotic software can automate complex systems administration tasks around IT infrastructure and applications, such as performing regular diagnostics at an early stage.

2) Perform error correction. RPA with chat-enabled can be programmed to direct the customer to do minor repairs that can be done by yourself such as troubleshooting.

Technology

1) Software installation. RPA can enable one-click installation of complex systems with integrated components.

2) Automatic testing. Robotic Process Automation technology can develop into a testing tool that can follow user behavior. That way, the testing process can be done automatically and faster.

3) Operate tools. Robotic software can operate tools automatically for both customers and employees.

Finance

1) Financial planning. Financial planning is a routine process that is carried out within a certain period of time. The process can be partially automated using RPA.

2) Processing of checking accounts. can make comparisons of checking accounts with one another more quickly with the help of RPA.

Implementation of Robotic Process Automation in Accounting

There is a research problem that needs to be looked for, namely whether with the existence of RPA to replace the role of humans in corporations? and what is the role of humans in dealing with the increasingly widespread emergence of RPA in various fields of work? this has been obtained from research results which explain that RPA can be used as a virtual worker, assisting companies in carrying out daily and repetitive tasks, for example entering account data for every payment or transaction. For example in the case of accounts payable. We may still be able to enter transaction data via one invoice manually, but in financial institutions such as banks or paying companies, there must be hundreds or even thousands of data and in very large quantities. RPA can be set up in such a way as to enter good data based on the amount of money, the name of the transaction and so on. RPA will automatically enter transaction data accurately and quickly [11].

5. CONCLUSION

Robotic Process Automation (RPA) can be used as a virtual worker, assisting humans in performing daily and repetitive tasks. RPA lacks heart, feelings, and ability to communicate with other people. Static work such as making financial reports will be done by RPA and personal work will still require accountants [12]. Robotic process automation technology can be found in daily activities, such as in health services used to handle patient medical history, records, billing and reports. Robotics Process Automation (RPA) can help companies make their business more profitable, flexible and responsive. In financial services, the most common use of robotic process automation is the use of m-banking and e-banking, managing foreign accounts and auditing payments. In supply chain management, the use of robotic process automation is used to automate procurement processing and payment of orders, monitor inventory levels and track shipments. For example, when shopping online, we can find out the track record of the goods purchased in real time. RPA tools enable modern banks to meet their high demands for information capture capabilities, security, and data quality, while also increasing operational efficiency. In credit card applications, RPA tools are used to handle tasks such as issuing

cards to users. RPA increases the speed and accuracy of tasks, which in turn increases productivity. several factors for successful adoption of RPA in an organization, namely: 1. RPA strategy 2. Human resources 3. RPA implementation partners 4. Processes that are mature, defined, and iterative 5. Project Management 6. RPA technology used 7. Information technology involvement.

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