

ROBOTIC PROCESS AUTOMATION OF ORACLE ERP (AP)PROCESS USING AUTOMATION ANYWHERE TOOL SOFTWARE SOLUTION

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Abstract - This study aims to give organizations insight into how to successfully implement RPA and what factors to beware of to avoid failure. The main literature that is supporting this research is previous research of RPA along with a comparison to IT development via Business Process Management. Experts in the field that have experience of implementing RPA were interviewed for this research. The results are present as a dynamic Oracle ERP for RPA implementation with a description of what risk factors it is necessary to beware of to avoid failure. *The results indicate that the value is not only in the robot. When a number of automated processes increases then RPA gets more complicated. Organizations need to be able to understand RPA and therefore build a structure for RPA with appropriate RPA team. Including change management right from the beginning is fundamental; when the changes are applied, employees have to be prepared for them. Companies need to continuously work on the process assessment and therefore identify, optimize and prioritize processes for the RPA lifecycle. Companies that have RPA team with lack of knowledge could experience that some part of the RPA lifecycle is not carried out successfully, which can have an adverse effect later on in RPA lifecycle and result as project failure. RPA project evaluation depends mainly on the objectives of the project and therefore the type of processes that are automated.*

Key Words: RPA, software robot, BPM, Oracle ERP....

1.INTRODUCTION

Technology is quickly advancing; computers have started listening and speaking, and we have robots that can handle imprecise tasks that are currently done by humans (Brynjolfsson & McAfee, 2014). Organizations have to respond to increased challenges from customers' needs and remain competitive by reducing cost. Robotic Process Automation (RPA) enables organizations to automate repetitive and tedious tasks and therefore provides a way of reducing operating costs (Forrester Research, 2014). Organizations that have made use of the RPA technology have not only noticed massive savings on full-time equivalent (FTE), they have also experienced other benefits including improved service, quality and speed, lower error rate and staff satisfaction (Willcocks & Lacity, 2016).

According to Lamberton (2016), 30-50% of the first RPA projects within an organization fail. The term RPA is relatively new, however, the market is growing fast. To be able to avoid the common mistakes in RPA project failure, it is crucial to define an Oracle ERP for the implementation. In this research, it is investigated how to successfully implement RPA from the beginning of the Oracle ERP, where the business problems are defined, to the end of the entire process when RPA is part of the organization's strategy. A dynamic Oracle ERP to successfully implement RPA is presented as well as a description of what risk factors organizations need to be aware of to avoid project failure. The Oracle ERP is adapted from a combination of literature and interviews with experts in the field.

1.1 BACKGROUND

Automation is a system that functions without direct human interaction. Many automated systems have this in common: taking out the most unreliable factor (human error) thus improving precision, quality, and accuracy. The first idea of how to automate processes using software came in 1935, when the computer scientist Alan Turing described how a systematical algorithm could work processes more effectively. His ideas on algorithms and automation had a lasting impact (Middelburg, 2017). The beginning of the technological development started in 1964 when the first laboratories researching artificial intelligence were opened at MIT, and following, in 1965 the first Robotics Institute was opened (Willcocks & Lacity, 2016). Service Automation is believed to be the next wave of development in automation (Middelburg, 2017). Middleburg (2017) described service automation as a technology that is used to automate services and deliver optimal user experience, where the primary objective is to automate redundant manual labor. Willcocks & Lacity (2016) define RPA as service automation, but other terms apply to service automation. For example, a scripting tool, artificial intelligence, cognitive computing, BPM, etc. RPA addresses the part of service automation that automates structured processes (Willcocks & Lacity, 2016). Robotic Process Automation is defined by the

IEEE Standards Association as: “A *preconfigured software instance that uses business rules and predefined activity choreography to complete the autonomous execution of a combination of processes, activities, transactions, and tasks in one or more unrelated software systems to deliver a result or service with human exception management*” (IEEE Std 2755-2017, 2017). The term Robotic Process Automation (RPA) was first used in 2012 and was created by marketing director Patric Geary, who worked for the RPA software company, Blue Prism (Hindle, Lacity, Willcocks, & Khan, 2018). RPA is a newly developed technology and there is no proper research from the early stages of use. RPA began to gain popularity in 2014 and 2015 when companies started to announce considerable savings due to automation. The market for RPA back-office automation was becoming more significant by early 2016, but it was still relatively small-scale during this time (L. Willcocks & Lacity, 2016).

1.2 RESEARCH QUESTIONS

To investigate the dynamic Oracle ERP for successful implementation of RPA and what factors can cause failure when implementing RPA, the research questions are the following:

How to successfully implement a Robotic Process Automation?

What is Robotic Process Automation?

What factors can cause failure when implementing RPA?

What factors are common for RPA project evaluation?

The researcher found it interesting to investigate how to implement RPA successfully for many reasons. First, RPA is relatively new and there is little prior research on RPA implementation. Second, the researcher believes that RPA will have a high impact on the Icelandic labor market in the next few years and finally, the researcher thinks RPA is an interesting tool to help companies to increase efficiency.

2. OBJECTIVE OF THESE REASEARCH

This research aims to answer the questions mentioned above, with a primary focus on the first question. To answer these questions, a previous research of RPA implementation for different companies was analyzed, theory of implementation workflow was studied, and interviews with experts working in the RPA field were studied. An RPA Oracle ERP with the dynamic structure for the most suitable implementation methods will be

created and described in detail, as well as a table with all factors that are considered to be essential to be aware of to avoid failure.

3. ASSUMPTION AND LIMITATIONS

The field of RPA has little prior research and there are not many organizations that have been working with RPA for a considerable amount of time, thus, this study is largely limited. The researcher found it challenging to find candidates for an interview due to the fact that RPA is a relatively new method, and the number of RPA experts located here in Iceland is limited. The interviews are based on four experts' perspectives, so a small number of interviewees are a limitation. The interviewees have all worked for the same consultant company which can limit.

4. RESEARCH METHODOLOGY

The research method is qualitative. Qualitative research provides findings that are not based on statistical procedures or other quantitative methods. The results of qualitative research are based on analyzes of different types of knowledge (Hoepfl, 1997). Qualitative research can refer to research where only a small sample of interviews are used for the research, both structured and unstructured (Bryman & Burgess, 1994). The process for this research is based on a research process described by Kothari (2004), which is provided in Figure 1. The process starts by describing the research problem, which is done by discussing with experts in the subject field, and then examining available literature review. When research questions have been designed, the researcher executes a literature review in order to prepare the research design. Collection of data was done through interviews and analyzing of the data was done by “coding”. Coding is the process of segmenting sentences into categories and labeling these categories with terms (Creswell, 2014). Finally, the researcher finished writing the report and started preparing for a presentation. A literature review was conducted throughout the research. The literature review covers RPA's main features and background, implementation methods, and comparison to IT development via BPM. The previous research analysis is based on case studies. These case studies include a description of RPA project implementation for different companies. The researcher focuses on five previous research case studies and the key themes of RPA implementation that arise within them

Define research problem

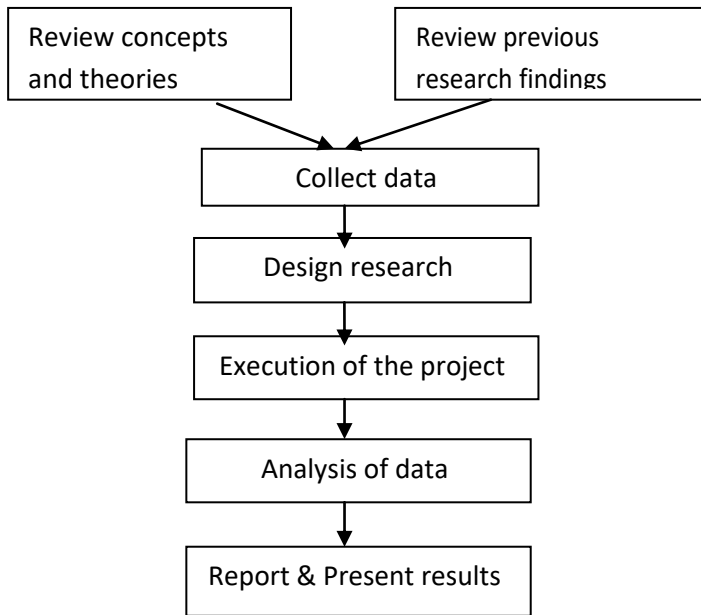


Figure 1: Research process (Kothari, 2004)

5. RPA IMPLEMENTATION

Distinguishing “real” RPA applications is important. RPA software does exactly what it is trained to do so there are no terms of “intelligence” in RPA software (Burgess, 2016). Machine Learning is a subdivision of Artificial Intelligence (AI) that provides learning capabilities. It allows computer systems to learn from data or experience, rather than by following pre-programmed rules (The Royal Society, 2017). With AI it is possible to provide structured outputs from unstructured inputs. Even though RPA does not have self-learning capabilities, it can be used for the further process of the structured output from AI (Burgess, 2016). This is one of many examples of how RPA can be used as an extension to other tools. RPA software is sometimes confused with screen scraping tools. Screen scraping automation tools are easier to learn and cheaper than other process automation tools, but it can sometimes be hard to distinguish between screen automation and process automation tools (Lacity et al., 2016). Screen scrapers only understand a window located in a specific location, so it relies on X and Y coordinates. Recognizing a window defined by a location will no longer work if the window is moved to another screen (Willcocks & Lacity, 2016). Blue Prism is an RPA tool, not a screen scraping tool; it interacts with data through Java, Html, Access Bridge and Surface Automation (Willcocks & Lacity, 2016). Figure 5 gives an example of a process that was automated using robotic software from Blue Prism. The process has the five main tasks, which are the following:

1. Log in to System
2. Open Excel sheet
3. Get data from Excel sheet
4. Put data information from Excel to Order system
5. Take note of Order reference

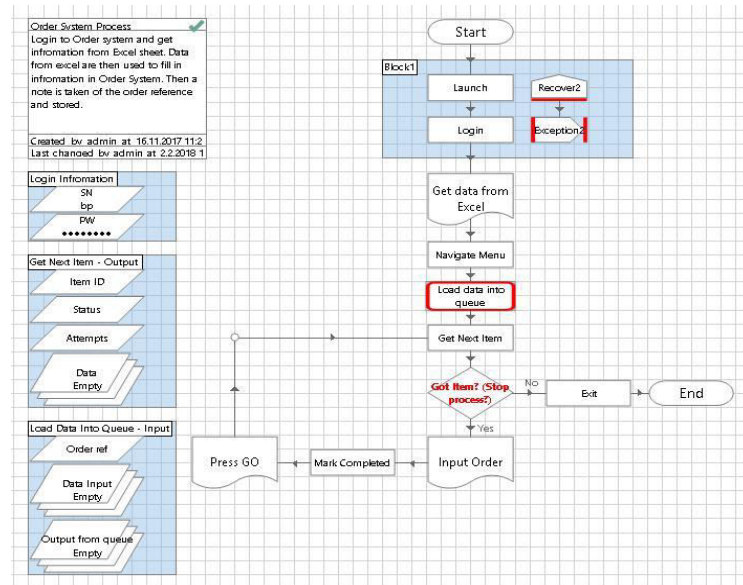


Figure 2: Example of the process automated

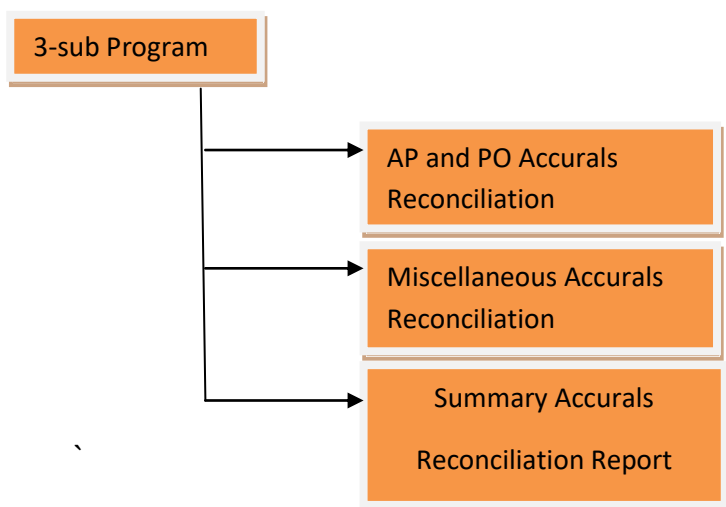
Figure 2 shows the main page on process level in Automation Anywhere. The software includes drop and drag icons that resemble a process (Lacity & Willcocks, 2016). The process is divided into different steps. These steps refer to another page where more detailed information for the specific steps can be found, which is called function level. Function level includes actions that are displayed in object level (Stople et al., 2017). For the process in figure 5, an example of one page in object level is Login to System. Once the RPA developer has instructed the robot in what to do, the controller can monitor the process in the so-called Control Room in Automation Anywhere (Stople et al., 2017).

5. RPA of Oracle ERP (AP) Processes.

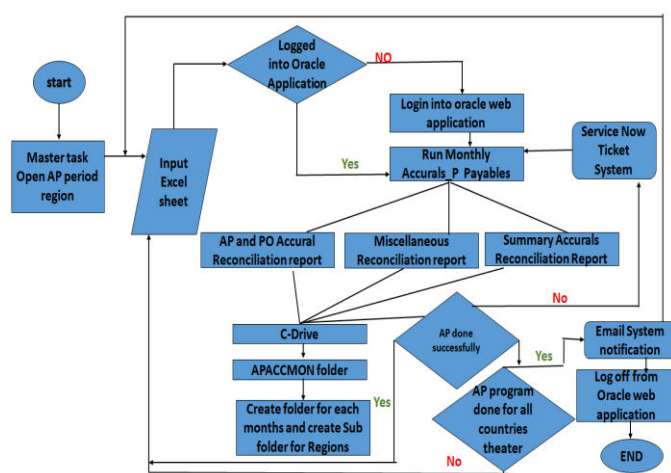
Host the Oracle URL in AA >login using given credentials Run the Program for each country Run Request Set: Monthly_Accruals_P, These can be retrieved based from input sheet for respective country For each row on the Request Set, Input the values Click on Option Button .Change the value of 3rd column to EXCEL from PDF Click on OK Repeat the above steps for all rows in “Submit request ser Click Submit.

The above step Triggers 3 or more Sub Programs

Make sure they are successful they are in desired form



save output of each program in C drive>APACCMON folder When it is generated. the flow chart below explains the flow of the entire oracle ERP processes of automated task.



Flow chart which shows the entire AP oracle ERP processes Automated

from the above flow chart initially the task starts with the given login page where need to host the URL of the website from the drag drop commands of automation anywhere, when once the task is generated it directs to the Master task where in the Master task the AP region period opens where these will be linked to an Excel sheet these because in the excel sheet acts has an template where all the files will be recorded and kept for reference once these is done the login oracle page opens enter the credentials once it's done with an automation the Accruals payables opens which triggers three more files which is explained in the above of the figure then once it's is successful in saving the excel sheet save in the drive and notify the message that AP is done successfully and emails these notification depending on successful file then logout the files these task will be automated using suitable commands from Automation Anywhere Tool.

3. CONCLUSIONS

RPA has become widespread abroad, especially in the Nordic countries. RPA is a relatively new subject here, in Iceland, which is why the researcher found a need to study it further. The aims of this thesis included: investigating RPA, defining RPA, assessing how to successfully implement RPA in companies, and finally, determining the factors that may cause failure. The chosen research questions were the following:

How to successfully implement Robotic Process Automation?

What is Robotic Process Automation?

What factors can cause failure when implementing RPA?

What factors are common for RPA project evaluation?

To answer these questions, the researcher conducted a qualitative research methodology by surveying four experts of varying expertise. The interviewees all have experience of implementing RPA in various roles. The researcher finished a training course in Blue Prism and participated in a successful RPA implementation project to get more understanding of RPA. The conclusion of what the researcher considered crucial to achieve the objective of this research is summarized in this chapter.

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