

Robotic Process Automation for Commercial Proposal Preparation and Approval Process

Dr.N. Baggyalakshmi, S. Jenitha and Dr.R. Revathi

Abstract--- *OFSAC series machine is dependable, small, and easy to service, which means less time spent on it. When the presence of even a trace amount of oil vapour is intolerable at any point in the production process, oil-free air must be used. When the presence of even a trace amount of oil vapour is intolerable at any point in the production process, oil-free air must be used. If the client wants to know about a particular model detail, they can give their response in MS Form and then the flow is created. The correct flow response will be excluded in the Excel. When making product offers to clients and potential clients based on predetermined terms and circumstances, sales quote processing comes in handy. Existing customers, prospects, and potential buyers are given the opportunity to assess the costs of the items or services offered by the company through sales quotations. You can incorporate the products from an opportunity into your quote right from the start. Your company's sales staff may use SAP Cloud for Customer from any internet-connected desktop, laptop, or tablet to generate and manage quotes in real time. We can easily generate new quotes, duplicate current ones, or edit the ones we already have. Everything in the company database, including products and services, can be added or updated by the user. Together with your sales staff or other coworkers, the solution can establish approval workflows prior to presenting estimates to clients or potential clients. To improve the sales quotation process, the client administrator can set elements that impact quotes, such as party processing, document kinds, integration, and follow-up documents. Improving service and making it easy for customers to see the cost of air-cooled and water-cooled compressors are the major objectives. The customer can make use of the OFSAC template That generated in MS Excel.*

Keywords--- *Robotic Process Management, SAP Cloud, Ms Excel.*

I. INTRODUCTION

An opportunity is the starting point for a sales professional to develop a quote. We have included all relevant parties, items, and quantities in the sales quote. The solution, which the Administrator has configured, determines net value by using details like dates, items, and

accounts. It is possible for the salesperson to manually edit the pricing and discounts that have been automatically calculated, or to add additional discounts and surcharges. When certain criteria are surpassed, such as the total net value or total provided discounts, the sales quote may need approval, depending on the system design.

In accordance with the output parameters, the salesperson communicates the price quotation to the client. The status can be changed to Completed and the item set to Won if the customer accepts the sales quote. You can also convert the sales quote into a sales order in the external system with an external integration, such as SAP ERP.

The user can also add and view more details such as external references, notes, and involved parties. A company administrator configures and modifies the fine-tuning activity for sales quotes to meet the needs of the company. This solution set-up offers the user, the sales representative, more possibilities to work with quotes to meet the needs.

The process of commercial proposal preparation and approval can be time-consuming and complex, involving multiple stakeholders and departments. The traditional manual approach to this process can be prone to errors and delays, leading to lost opportunities and reduced productivity.

However, with advancements in Robotics Process Automation (RPA) technology, this process can be automated, leading to greater efficiency and accuracy. RPA can automate repetitive and rule-based tasks, freeing up human resources to focus on more strategic and value-added activities. The benefits and potential applications of RPA in commercial proposal preparation and approval process. The challenges faced by organizations in this process, the advantages of RPA, and the future scope of RPA in this field.

By leveraging the power of RPA, organizations can streamline their commercial proposal preparation and approval process, reduce errors and delays, and improve overall productivity. This paper will provide valuable insights for organizations looking to adopt RPA in their commercial proposal preparation and approval process.

II. LITERATURE REVIEW

Gami et al [6] This document will assist companies in

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implementing robotic process automation in a highly efficient way. It automates the different activities by capturing and interpreting the current applications. The proportion of RPA's applicability to a given problem's resolution is contingent upon the quantity of software applications required to address that specific problem. The more software applications needed to solve the problem; the more applicable RPA will be. It makes enterprise-safe process automation possible. Robotic process automation procedures are designed to handle various tasks in the shortest amount of time.

Kansara [7] Robotic Process Automation (RPA) is the term used to describe these back-end automation solutions. It reduces the need for human interaction by automating the simple processes. The first section of this chapter explains the foundational ideas of RPA and its history. It then goes on to demonstrate its capabilities and a plan for integrating RPA into a company. Additionally, it uses an OSI Reference Model (Open System Interconnection) to illustrate how RPA operates. The benefits of integrating RPA into an organization are discussed in the second half of the chapter.

Šperka and Halaška [8] The purpose of the research being given is to develop and provide a data-driven performance framework that uses process mining (PPAFR) to evaluate the effects of implementing RPA. First, we discuss and summarize current RPA and process mining trends. Second, we outline the goals and techniques of the research using the Design Science Research Methodology. Next, we determine crucial elements for RPA execution and PPAFR design process phases. We use actual loan application process data to illustrate the idea. Process simulation including evaluation of RPA candidates, process analysis, and process discovery using process mining techniques make up the demonstration. The research findings are used to propose a process redesign that prioritizes the use of RPA.

Sahu et al [9] designed the use of natural language processing and clever optical character recognition (OCR), DataBots can read aloud the information that is displayed on the invoice. Robots utilize their login credentials to access the enterprise resource planning system or database of the organization, if it isn't already open, once they have extracted the essential data from every invoice. After that, the robots begin processing each invoice individually by sending the necessary invoice data. The DataBots are also conducting background tasks throughout this entire process, like keeping an eye on the specific invoice folder or its email address, checking to see if the business's database is accessible, and confirming that the vendor details (like the VAT number) on the invoice match those in the database.

Carden et al [10] proposed their business processes were strategically automated by robotics process automation. Robotics process automation offers a lot of advantages, but it's not well recognized how exactly to integrate it into the current infrastructure. This instructional example deals with issues pertaining to the automation of processes at two locations as well as the resources, instruments, and methods associated with project execution. The instance also highlights upcoming problems and difficulties with

blockchain integration, cognitive technologies, and robotics process automation. In addition to learning how to foresee future problems and challenges, including how to leverage the current implementation into future intelligent automation initiatives, students, researchers, and practitioners will also gain an understanding of the benefits and project activities necessary for robotics process automation.

III. PROPOSED METHODOLOGY

In one sales quotation for a material, the user can offer the customer several options with differing pricing conditions and shipping times. If the quotation leads to a sales order, the user can select an alternative item according to the customer's requirements. Sales inquiries and sales quotations let the user enter and store all the important, sales-related information the user use during sales order processing. Sales inquiries and sales quotations that are not complex can be entered quickly in the initial entry screen. These can be entered from scratch or can be copied. For example, when the customer decides the user wants a sales quotation, you can copy a previously entered sales inquiry directly into a sales quotation. For each type the response is collected in MS Form and then the flow is created in power automate according to the data shared. If the condition is true then it will be processed in NSD-1 and if the condition is False then it will run under NSD-2. The cost is estimated automatically and the details the shared to customer's Email.

Instead of a material number the user can also enter a text description of the material if, for example the user can't assign the materials to a customer call straight away. The user can maintain a validity date in the sales inquiries and sales quotations to indicate by which time they should have been answered. The documents can then be monitored and evaluated according to this validity date, which then allows the user to evaluate the sales inquiries and sales quotations on time. This way the user are able to plan and implement the necessary subsequent activities according to the deadline. In one sales quotation for a material, can offer the customer several options with differing pricing conditions and shipping times. If the quotation leads to a sales order, the user can select an alternative item according to the customer's requirements.

Objective of the Project

When compared to more conventional forms of automation, robotic process automation (RPA) has many advantages. With a minimal and non-invasive technical barrier, it allows to cut expenses and free up resources. Other benefits include more consistency, better accuracy (and fewer mistakes), faster service (and more customer happiness as a result), and easier regulatory compliance. Business and digital transformation robotic process automation overview. In workflow and process-related applications (typically legacy systems) and operations, robotic process automation (RPA) refers to the creation and implementation of software robots or bots to automate routine, rule-based tasks that humans do. Robotic process automation (RPA) encompasses not only the software used to automate processes, but also the method of identifying

which processes and tasks are ideal candidates for RPA, as well as the approach to designing and implementing RPA scripts, macros, and algorithms.

Robotic process automation, at its heart, allows applications to mimic human performance of repetitive tasks (such as data entry and transaction processing). Scripts, macros, algorithms, and evolutions all play a role in automating these repetitious operations. User interface interactions provide the basis of the replication. It examines how people use the application in question, which naturally includes an interface in order to be automated. Just as chatbots and robo-advisers aren't a substitute for human financial advisors or other channels of customer contact, RPA isn't the answer to every process automation problem either. In the real-time economy, when consumers are impatient and expects immediate gratification, this essentially amounts to the same advantage plus the added bonus of expediting operations.

Robotic process automation (RPA) boosts quality by lowering the rate of human mistake in data entry, rework, customer handling times, and complaints. This shouldn't come as much of a surprise, considering that the end result of any procedure is almost always a customer. According to Dimension Data, RPA is changing the way customers are served for these and other reasons as well.

System Flow Diagram

To visually represent and understand how data moves through a system, a system flow diagram is a useful tool. They serve as the foundation upon which the other parts are built and as the primary instrument. It is possible to explain the processing of data from input to output in a logical way, apart from the physical parts of the system. Logical data flow diagrams are what these are called. Data actually moves from one location to another, between departments, and between individuals' workstations, as shown in the physical data flow diagrams. A collection of data flow diagrams truly constitutes a comprehensive description of a system. Multiple stages are utilised in the construction of SFD's. The subsequent level of the diagram allows for the breakdown of each process into a more specific SFD. A context diagram is another name for the top-level diagram. For the purpose of investigating the present system, its one process bit is crucial. The first-level SFD dissects the process shown in the context-level diagram into its component parts. The basic premise of building on top of existing processes is that knowledge gained at one degree of detail can be expanded upon at a higher level. That is, until additional explosion is required and sufficient information is provided for the analyst to comprehend the procedure.

SFD has often been used due to the following reasons:

- Logical information flow of the system
- Determination of physical system construction requirements
- Simplicity of notation
- Establishment of manual and automated systems requirements

SFD Symbols

In the SFD, there are four symbols

- A square defines a source(originator) or destination of system data.
- An arrow identifies data flow. It is the pipeline through which the information flows.
- A circle or a bubble represents a process that transforms incoming data flow into outgoing data flows.
- An open rectangle is a data store, data at rest or a temporary repository of data.

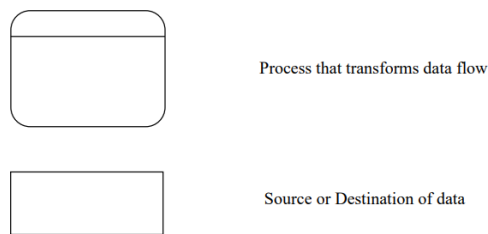


Figure 1: Process of Data Flow

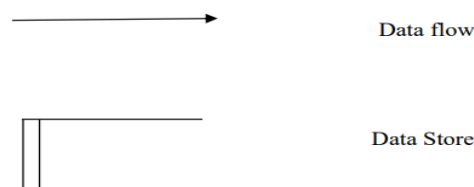


Figure 2: Flow of Data

SFD Diagram

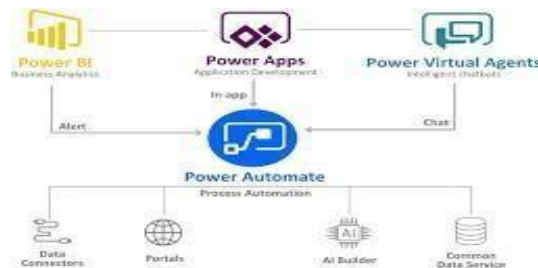


Figure 3: SFD Diagram

Three ways to make a flow

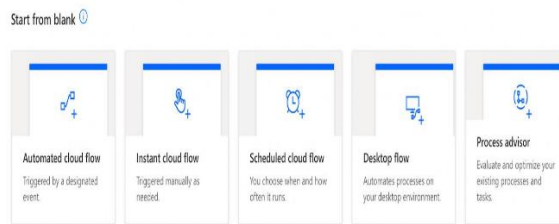


Figure 4: Way of Flow

To work with Power, Automate, select the process the user want to automate. Here is what the process looks like:

- The user can create an entirely new flow from scratch or choose any of the available templates.
- Building a flow from scratch requires additional steps which will be discussed later on.

- Once the flow is outlined, connect it with the required datasets via connectors.
- The test it via the “Run” option to check for errors.
- Set live.
- Before deep diving into a tutorial on creating an automated workflow on Microsoft Power Automate, The usershould look at the different flow types available them.
- Power Automate integrates with Microsoft Office.
- Power Automate uses Microsoft’s Open XML document standard for integration with Microsoft Office.Document metadata is also stored using this format.
- Power Automate provides various application programming interfaces (APIs: client-side, server-side,JavaScript) and REST, SOAP and OData -based interfaces.
- Power Automate can be used to achieve compliance with many document retention, record management,document ID and discovery laws.
- Power Automate is compatible with CMIS – the Content Management Interoperability Standard, usingMicrosoft’s CMIS Connector.
- Power Automate by default produces valid XHTML 1.0 that is compliant with WCAG 2.0 accessibilitystandards.

Process Flow Diagram

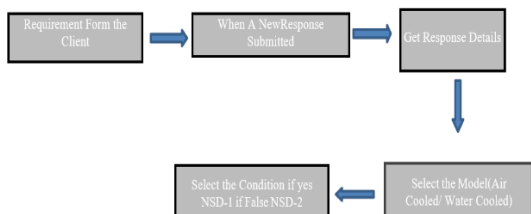


Figure 5: Process Flow Diagram

The user will save our Gmail attachments into the user Google Drive Folder.

Step 1: Go to the templates section. If the user search for “Gmail” the user should find the template. If not, scroll down to search for it.

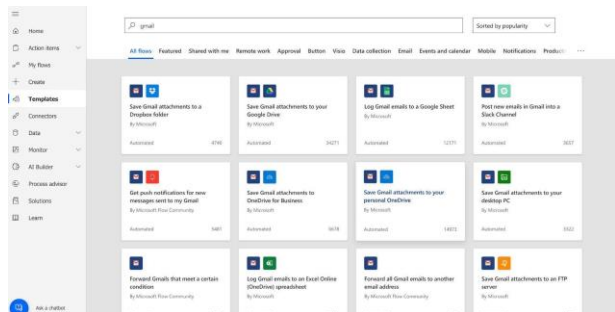


Figure 6: Gmail Template

Step 2: The user will be asked to link your accounts after selecting the template. Link to the accounts, and when two

green ticks appear in front of the connectors.

Step 3: Once the user are on the screen, the flow details on the screen. Let’s select edit to see the workflow.The user will be redirected to a page like this:

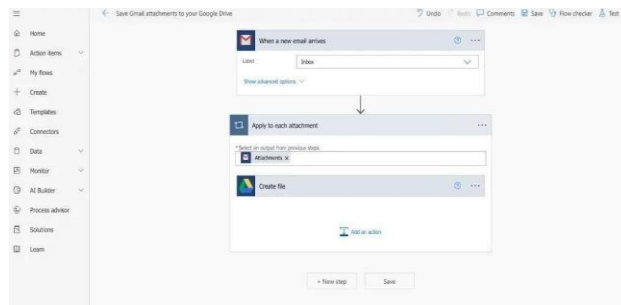


Figure 7: Edit Flow

Microsoft Power Automate Tutorial - Step3 Edit Flow

Step 4: Select the proper variables. Do the user want to consider emails only to their inbox or promotionalmessages? Take a look at the options in the drop-down.

Step 5: If the user want to receive a notification every time this flow occurs. It will add another step where theuser receive an email saying our attachment is uploaded.

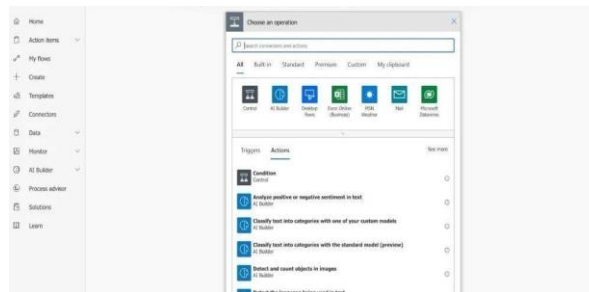


Figure 8: Optimizer Chosen

Microsoft Power Automate Tutorial - Step 5 - Add another step

Step 6: Select Gmail and select send an email (V2). Fill in the details.

The user can enter the sender's email, email subject line, and other dynamic content to track the notifications.

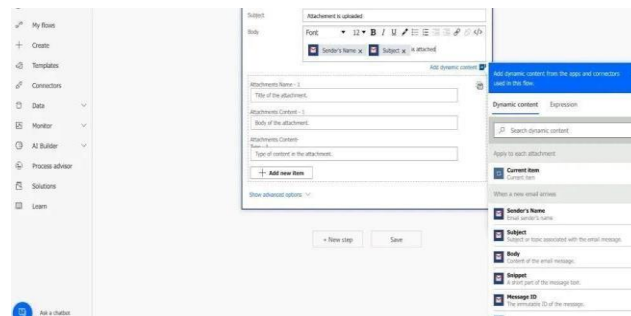


Figure 9: Gmail Notification

Microsoft Power Automate Tutorial - Step 6 - Sending Gmail notification

Step 7: Once done, Save it. On the top bar, click Flow Checker to see if there are any errors or warnings. If not,move

on to the next option, which says Test. Try to send a test email to our email id mentioned in the steps.

Step 8: To check the flow progress - Select “My Flows” and select the flow that is have just created. At the bottom, the user will see a tab that shows the 28-day run history. If the status shows succeeded, our flow workswithout an error Microsoft Power Automate Tutorial - Step 8 - checking Flow progress

The user can follow similar steps for other templates. All the Microsoft Flow templates have pre-defined stepscreated for easy usage.

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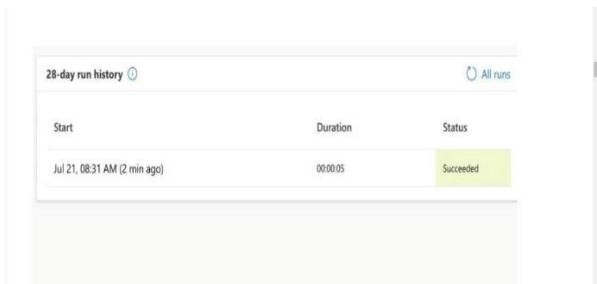


Figure 10: My Flows

IV. RESULT AND DISCUSSION

Input Design

Input is the raw data that is processed to produce output. During the input design, the developers must consider the input devices such as PC, MICR, OMR, etc. Design inputs form the foundation of the device and are a key factor in whether or not you produce something that is safe and effective.

Therefore, the quality of system input determines the quality of system output. Well designed input forms and screens have following properties –

- It should serve specific purpose effectively such as storing, recording, and retrieving the information.
- It ensures proper completion with accuracy.
- It should be easy to fill and straightforward.
- It should focus on user’s attention, consistency, and simplicity.
- All these objectives are obtained using the knowledge of basic design principles regarding
- What are the inputs needed for the system?
- How end users respond to different elements of forms and screens.

Figure 11: Input Design

Output Design

A system's primary responsibility is the design of its output. Developers think about the required output controls and prototype report layouts while identifying the types of outputs needed during output design. Printers' external outputs are made and designed by manufacturers. With the use of external outputs, the system can let its recipients confirm or activate activities. Turnaround outputs are a subset of the external outputs that are created for use as forms and then reintroduced into the system as inputs. Managers and end-users alike make use of the system's internal outputs. When it comes to reporting and decision making, they back up the management. The objectives of input design are –

- To develop output design that serves the intended purpose and eliminates the production of unwanted output.
- To develop the output design that meets the end users’ requirements.
- To deliver the appropriate quantity of output.
- To form the output in appropriate format and direct it to the right person.
- To make the output available on time for making good decisions.

Table Design

The IF condition is used for creating the flow manually and it is triggered using power automate. If theflow is runner successfully then the cost is updated in excel.

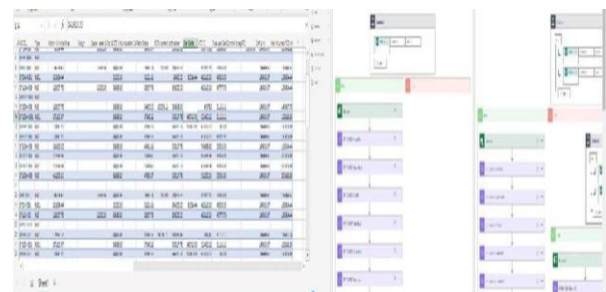


Figure 12: Output Design

V. CONCLUSION

As the technology emerges day by day this web app simulator will be more useful for the customers as well as the organization to see or show the demo of the simulator which is in the real world. Thisproject is very efficient and saves

time for both customers and organization. The customers can see a demo of a simulator by sitting in home with a laptop. This will be very useful in real world as the simulator contains all the details about the compressor. Compressors are used throughout the industries to provide shop or instrumentair, to power air tools, paint sprayers, air conditioning, refrigeration etc. So, this online web simulator will be more useful to pick the details about the compressor. Robotics Process Automation (RPA) technology has the potential to revolutionize the commercial proposal preparation and approval process by automating repetitive and time-consuming tasks. By leveraging RPA, organizations can achieve greater operational efficiencies, reduce errors, and increase productivity. The future of RPA in commercial proposal preparation and approval process looks promising, with advancements in AI, machine learning, and other technologies. Cloud-based RPA solutions will provide flexibility and scalability to handle changes in demand and requirements. Improved user interfaces and advanced security features will make RPA solutions more user-friendly and secure. Integration with other technologies like OCR and NLP will enable RPA to handle more varied tasks involved in commercial proposal preparation and approval process. Overall, RPA has the potential to transform the way organizations prepare and approve commercial proposals, leading to increased efficiency and accuracy.

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