Process Definition Document (in Progress)

SmartDocSorter

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I. INTRODUCTION

0.1 Short Description

The automated process sorts scanned documents, which lack explicit identification, into their appropriate folders. Once sorted, the process dynamically initiates a series of task-specific actions based on the document type. These actions range from dispatching emails to relevant stakeholders, to extracting and inputting data from the documents into Excel spreadsheets, among other operations.

0.2 Classification in the overall process
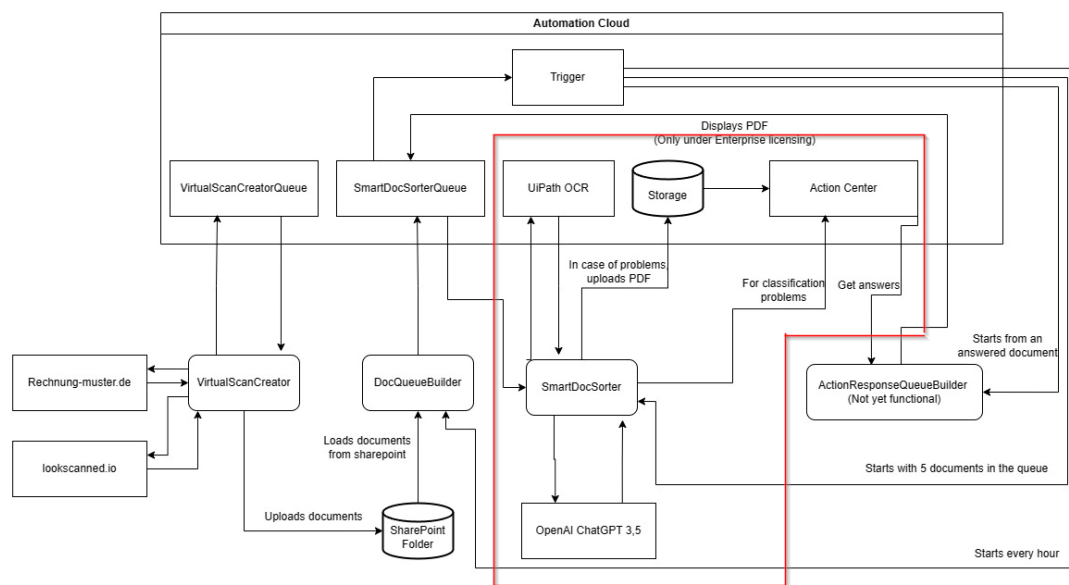

Figure 1 Area in the overall process

0.3 Key Contacts

Role	Name	Contact Details (email, phone number)	Notes
RPA Developer	Fynn Grabowski		
Process Owner	Fynn Grabowski		

II. AS IS PROCESS DESCRIPTION

The existing procedure involves the uploading of scanned documents to the SharePoint folder labeled "Company Documents." Once uploaded, these documents are manually accessed by the contract team, who perform specific actions based on the document's content. For instance, if a document is a reminder, the accounting department is notified accordingly. After the necessary actions are taken, the document is then categorized and stored in the relevant folder. The proposed improvement is to streamline this process by implementing a Robotic Process Automation (RPA) solution. This automation aims to eliminate the need for manual intervention, thereby increasing efficiency and accuracy in handling and processing these documents.

0.4 Process Overview

Item	Description/Answer
Process Full Name	SmartDocSorter
Process Area	Document Management and Processing
Department	Contract Management Department
Short Description (operation, activity, outcome)	SmartDocSorter automates the uploading, categorization, and storage of documents in SharePoint. It scans, analyzes, and routes documents for appropriate actions, reducing manual effort and enhancing accuracy.
Process schedule and frequency	Automated document processing occurs hourly, ensuring continuous and timely management of all uploaded documents.
Input data description	Scanned documents of various types, including reminders, contracts, and reports, uploaded to the SharePoint 'Company Documents' folder.
Output Data description	Documents are categorized and stored in relevant SharePoint folders. Automated notifications and actions are generated based on document content.

0.5 Applications Used

The table includes a comprehensive list of all the applications that are used as part of the process to be automated to perform the given actions in the flow.

Application Name	Version	Application Language	Thin/Think Client	Environment/ Access method	Comments
Microsoft Excel	365	English	Thick	Destop application	Used for logging the information from the document
UiPath Studio	2023.10.0	English	Thick	Destop application, cloud service	Core application for automating the process
UiPath Orchestrator	2023.10.1	English	Thin	Web-based, accessible via browser	Manages, monitors, and controls automated workflows
UiPath Action Center	2023.10.1	English	Thin	Web-based, accessible via browser	Facilitates human-in-the-loop capabilities in automation
SharePoint (optional)	2019	English	Thin	Web-based accessible via explorer	Main platform for document storage

0.6 AS IS Process Map

0.6.1 High Level Process Map

Purpose: To provide an overview of the process, identifying key areas for potential improvement and automation.

1. Document Receipt

   - Scanned documents are received and uploaded to the SharePoint folder labeled "Company Documents."

2. Manual Access and Review

   - The contract team accesses the SharePoint folder.

   - They manually open and review each document to understand its content and purpose.

3. Action Determination

   - Based on the content, the team decides the necessary action (e.g., notify the accounting department for reminders).

4. Document Categorization and Storage

   - After the actions are taken, the document is manually categorized.

   - It is then stored in the relevant folder within SharePoint.

Key Areas for Improvement:

   - Reduction of manual document handling.

   - Automating the categorization and storage process.

   - Implementing automated notifications based on document content.

0.6.2 Detailed Level Process Map

Purpose: To provide a granular view of the process for developers to understand each step and action.

1. Document Upload

    - Employee scans the document.

    - Employee navigates to the SharePoint "Company Documents" folder.

    - Document is uploaded via the SharePoint interface.

2. Manual Review

    - Contract team member logs into SharePoint.

    - Member navigates to the "Company Documents" folder.

    - Each document is opened, read, and the content type is identified.

3. Action Execution

    - For reminders: An email is drafted to notify the accounting department.

    - The email is sent to the designated contact in the accounting department.

    - For other documents: Similar steps are followed based on the content.

4. Categorization and Filing

    - The team member decides the appropriate category for the document.

    - The document is moved to the specific folder in SharePoint.

Key Details for Automation:

- Automating the login and navigation within SharePoint.

- Implementing OCR and content recognition for document types.

- Automating email notifications and document categorization.

0.7 Detailed As Is Process Actions

#Action	Input	Description	Details (Screen/Video Recording Index)	Exceptions Handling	Possible Actions
1. Document Scanning	Physical Document	Scanning physical documents to create digital copies.		Scanner malfunction or document is unreadable.	Manual check and rescan if necessary.
2. Document Uploading	Scanned Document (Digital File)	Uploading the digital document to SharePoint.		Upload failure or network issues.	Retry upload; if persistent, check network connectivity.
3. Manual Document Review	Digital Document in SharePoint	Contract team accesses and reviews each document for content and purpose.		Misinterpretation of document content.	Second review by a team member for clarity.
4. Action Determination	Reviewed Document	Deciding on necessary actions based on document content (e.g., notifying departments).		Incorrect action taken based on document content.	Review protocol for action determination and provide additional training if needed.
5. Document Categorization	Document Requiring Categorization	Manual categorization of the document based on its type and content.		Incorrect categorization.	Regular audits of categorized documents for accuracy.
6. Document Storage	Categorized Document	Storing the document in the appropriate SharePoint folder.		Misplacement or loss of document in the system.	Implement a tracking system for each document's movement.
7. Notification Sending	Document that Triggers Notification	Sending notifications to relevant departments based on the document's content.		Non-receipt of notifications by the intended department.	Confirmation of receipt system for important notifications.

III. TO BE PROCESS DESCRIPTION

The process begins with the upload of scanned documents in formats such as PDF, JPG, or PNG. Given that these documents are scanned, there may be variations in their quality. UiPath OCR technology is employed to interpret and extract data from these documents. The content of each file is then analyzed and categorized using a Language Learning Model (LLM). This categorization process assigns a relevant folder number to each document. In cases where automatic categorization is unsuccessful, the document is redirected to the UiPath Action Center for manual categorization and folder number assignment.

The documents are sorted into five distinct categories: offers, reminders, invoices, other, and payment confirmations. Once categorized, each file is moved to its designated folder.

For reminders, the system checks the 'PaymentInformation.xlsx' file to verify if the corresponding invoice has already been paid. If the invoice is paid, the supplier is contacted for verification of the reminder. If unpaid, the accounting department is notified to process the payment.

Invoices trigger an automated email to the accounting team, prompting them to take necessary action. Offers and other documents do not initiate any further automated process.

Finally, when a payment confirmation is received, this information is methodically recorded in an Excel file for record-keeping and future reference. This automated workflow aims to streamline document handling, enhance efficiency, and reduce manual errors in the administrative processes.

3.1. Detailed TO BE Process Map

Legend	Process
🤖	**Document Scanning and Uploading:** Automated scanning and uploading of documents in PDF, JPG, or PNG format to the system.
🤖	**OCR and Data Extraction:** Utilization of UiPath OCR technology to interpret and extract data from the scanned documents.
🤖	**Document Analysis and Categorization:** Language Learning Model (LLM) analyzes and categorizes documents into five distinct categories: offers, reminders, invoices, other, and payment confirmations.
👤	**Manual Categorization in Action Center:** If automatic categorization is unsuccessful, documents are redirected to the UiPath Action Center for manual categorization.
🤖	**Automated Processing of Reminders:** For reminders: The system checks 'PaymentInformation.xlsx' to verify invoice payment status. If paid, supplier is contacted; if unpaid, accounting is notified.
🤖	**Automated Invoice Processing:** Invoices trigger an automated email to the accounting team for necessary action.
🤖	**Recording Payment Confirmations:** Payment confirmations are automatically recorded in an Excel file for record-keeping

3.2. Exceptions Handling

The Business Process Owner and Business Analysts are expected to document below all the business exceptions identified in the automation process. Exceptions are of 2 types and both need to be addressed:

Known exceptions = previously encountered. A scenario is defined with clear actions and workarounds for each case.

Unknown = New situation that was not encountered before. It cannot be predicted and in case it happens it needs to be flagged and communicated to an authorized person for evaluation.

3.2.1. Known Business Exceptions

Details regarding how the robot should handle the exceptions.

Exception Name	Action	Parameters	Action to be taken
Date of Payment is Empty	Check 'PaymentInformation.xlsx' file	Invoice ID, Payment Date	Flag for manual review to update the payment date.
File is not an Image or PDF	File Type Validation	File Type	Skip processing and move to a 'Review Needed' folder.

3.5.2   Unknown Business Exceptions

Umbrella Rule: For all exceptions not covered by the known scenarios, the following rule applies:

- When an unexpected issue arises, the RPA bot will automatically generate an email notification to be sent to exceptions@company.com.

- The email will include a screenshot of the issue, a brief description, and relevant details like the time of occurrence and bot identifier.

- After sending the email, the bot will proceed to the next transaction in the queue.

This umbrella rule ensures that any unforeseen issues are promptly reported for human evaluation, maintaining the integrity of the process while allowing the RPA workflow to continue without interruption. This approach helps in quick identification and resolution of new exceptions, enhancing the overall efficiency and reliability of the SmartDocSorter process.

3.3. Reporting

Report Type	Update frequency	Details	Monitoring Tool to visualize the data
Document Processing Status Report	*Daily*	*Number of documents processed, categorized, and any exceptions noted.*	*UiPath Orchestrator Dashboard*
Exception Handling Report	*Weekly*	*Details of known and unknown exceptions encountered and their resolution status.*	*UiPath Orchestrator Dashboard*
Manual Intervention Report	*Weekly*	*Instances where manual intervention was required, including reasons for intervention.*	*UiPath Orchestrator Dashboard*
Process Efficiency Report	*Monthly*	*Metrics on process time savings, error reduction, and overall efficiency improvements.*	*Custom Reporting in Power BI*
OCR Accuracy Report	*Monthly*	*Analysis of OCR success rates and any recurring errors in document scanning.*	*Custom Reporting in Power BI*

IV.OTHER

4.1. Additional sources of process documentation

Additional Process Documentation		
Overview Document	readme.pdf	Provides an overview of all related processes.
Process Documentation	VirtualScanCreator.pdf	Detailed documentation for the VirtualScanCreator process.
Video Walkthrough	VirtualScanCreator Walkthrough.mp4	Video walkthrough demonstrating the VirtualScanCreator process.
Process Documentation	SmartDocSorter.pdf	Comprehensive documentation for the SmartDocSorter process.
Video Walkthrough	SmartDocSorter Walkthrough.mp4	Video guide showing the SmartDocSorter process in action.
Installation Guide	Install instructions.pdf	Detailed instructions for installing necessary software/components.
Video Walkthrough	DocQueueBuilder Walkthrough.mp4	Video walkthrough for the DocQueueBuilder process.