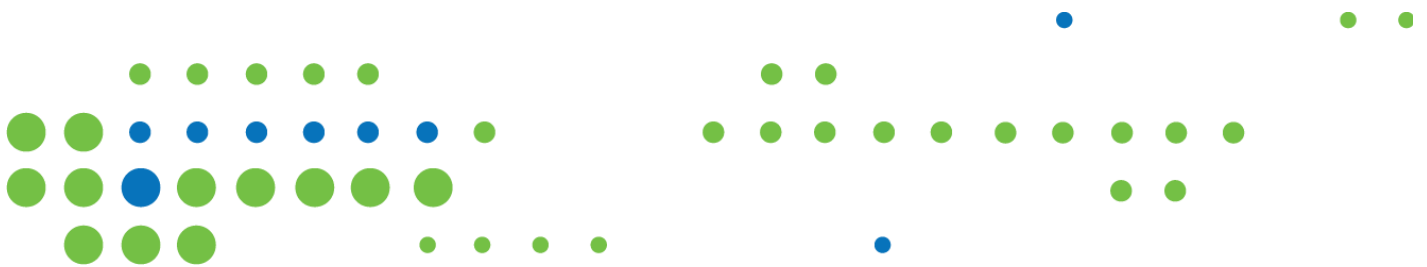# Solution Design Document

Swalih Zondo

szondo96@gmail.com

1. Introduction

This Solution Design Document (SDD) outlines the detailed design for the Power Platform-based solution aimed at automating the existing manual process of data capture, approval, and reporting currently managed using Excel spreadsheets and emails for approvals.

2. Solution Overview

The solution leverages SharePoint Online, Power Apps, Power Automate, and Power BI to streamline data management and reporting processes. Key components include:

- SharePoint lists for data storage.
- A Canvas Power App for data interaction.
- A Cloud Power Automate flow for approval processes.
- Power BI reports for data visualisation.

3. System Architecture

The system architecture consists of four main components:

3.1. SharePoint Online:
Serves as the central data repository.

3.2. Power Apps:
Provides a user interface for data entry and management.

3.3. Power Automate:
Automated Cloud Flow for the approval workflow.

3.4. Power BI:
Generates reports for data analysis and visualization.

4. Component Design

4.1. SharePoint Online Lists

Departments List

Fields:

- • Department: Single line of text.
- • Description: Single line of text.
- • Headquarter Region: Choice.

Products List

Fields:

- • Product Name: Single line of text.
- • Description: Single line of text.
- • Department: Lookup (linked to Department list).
- • Status: Choice (Pending Approval, Approved, Rejected).

4.2. Power Apps Design

Canvas App:

One Screen showing with 4 sections.
1) Table view to display all products.
2) Form to allow user to edit and delete.
3) Dropdown to filter products by Headquarter Region and Search text field.
4) Row Counter.

4.3. Power Automate Workflow

Approval Flows:

1. Trigger: When an item is created in SharePoint Products List.

   Action: Send approval request to approvers (Jacqui.muller@dimensiondata.com and tlhogi.molwana@dimensiondata.com).

   Wait for approval response.

   Send a confirmation email to the user that created the new item.

   Update product status based on approval outcome.

4.4. Power BI Reports
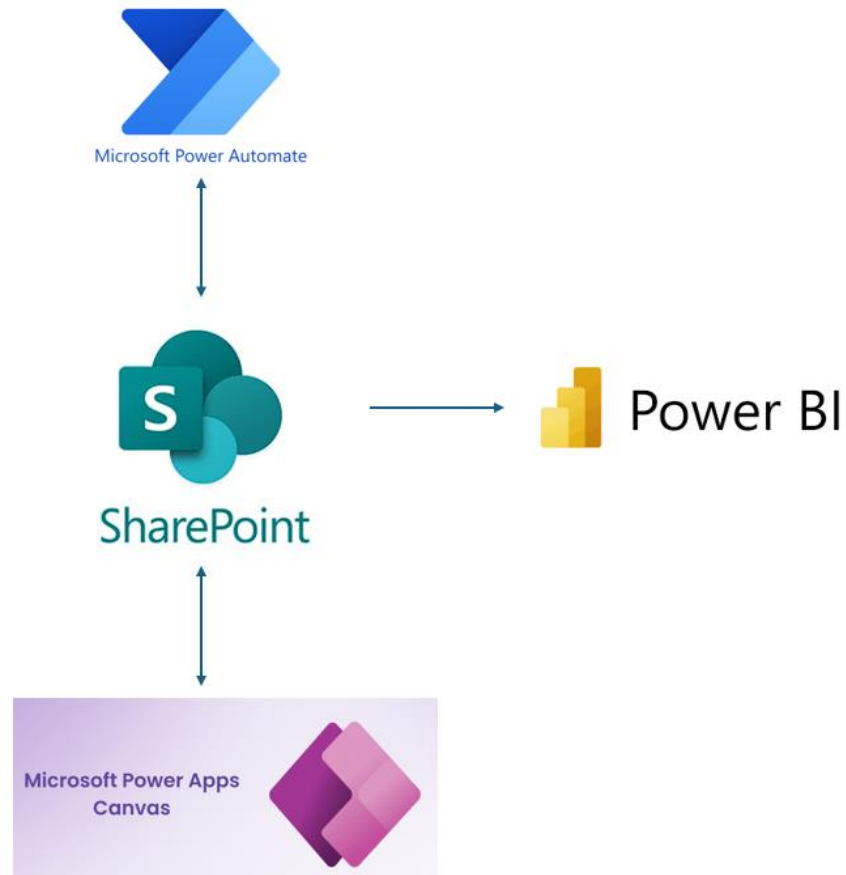
Landing Page:

• Button to take user to product page.

Product Page:

• Region dropdown to filter all visualisations on the page.

• Status dropdown to filter all visualisations on the page.

• Department dropdown to filter all visualisations on the page.

• Pie chart showing product by Headquarter Region.

• KPI based on the status.

• Gauge showing number of products added.

• Waterfall Chart that has Product Performance by Region.

• Table of Products.

5. Data Flow Diagram

6. Security and Permissions

SharePoint Permissions:

Ensure users have appropriate permissions to access and modify SharePoint lists.

Power Apps:

Restrict app access to authorized users.

Power Automate:

Secure connection settings and approval permissions.

Power BI:

Share reports with appropriate user groups ensuring data security.

7.   Implementation Plan

Setup SharePoint Lists:
Create and configure Department and Products lists.

Develop Power App:
Build the canvas app with necessary screens and functionalities.

Configure Power Automate:
Create and test the approval flow.

Create Power BI Reports:
Design and publish reports for data visualization.

Testing:
Perform end-to-end testing to ensure all components work seamlessly.

Deployment:
Export solution zip files to GitHub and share URLs with Data Dimension team.

8.   Conclusion

The proposed solution design leverages the Microsoft Power Platform to automate and streamline the current manual process, enhancing efficiency, accuracy, and real-time reporting capabilities. This document provides a comprehensive guide for the implementation of the solution.