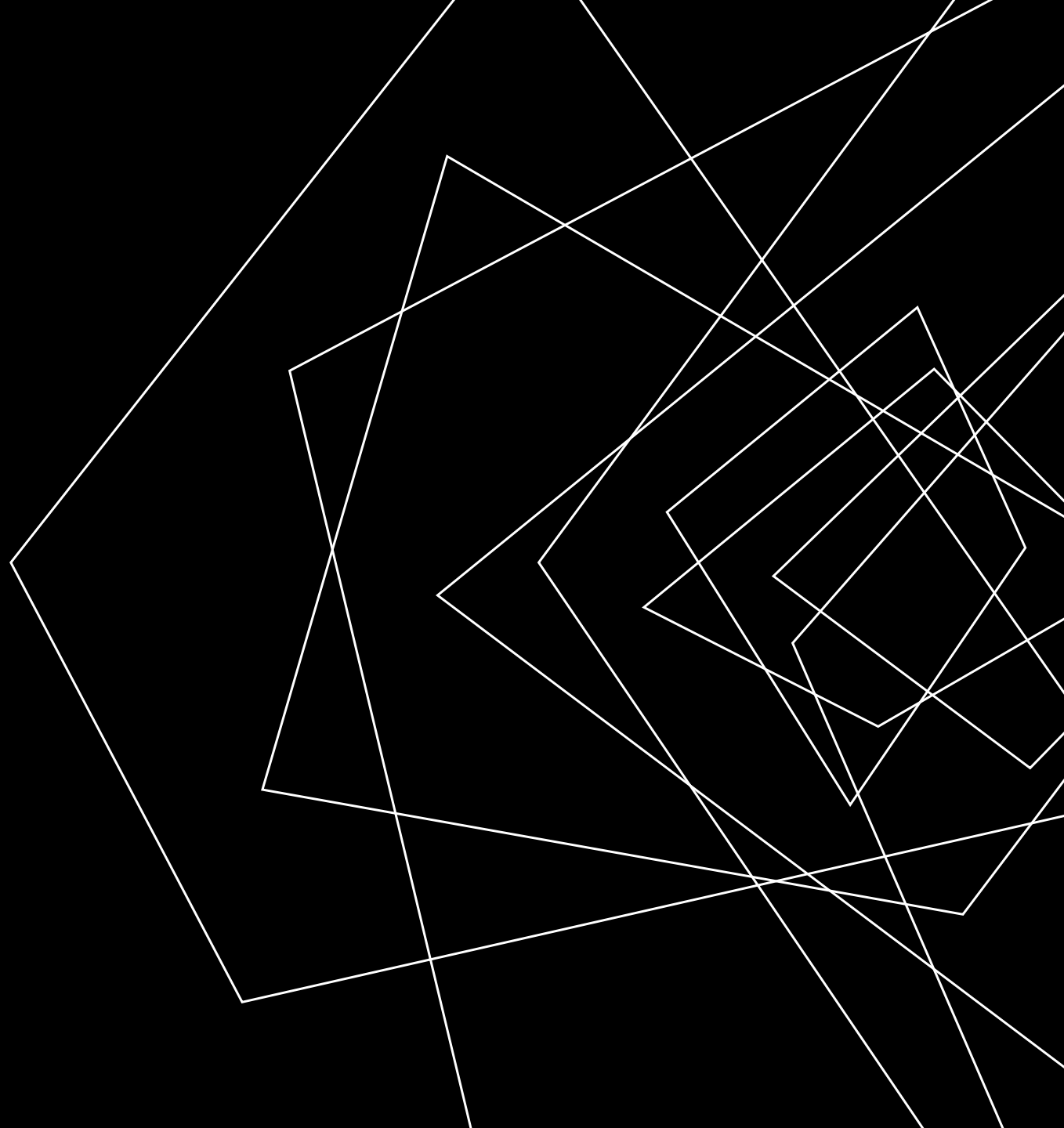


Streamlining report building with PowerBI and PowerShell

AGENDA

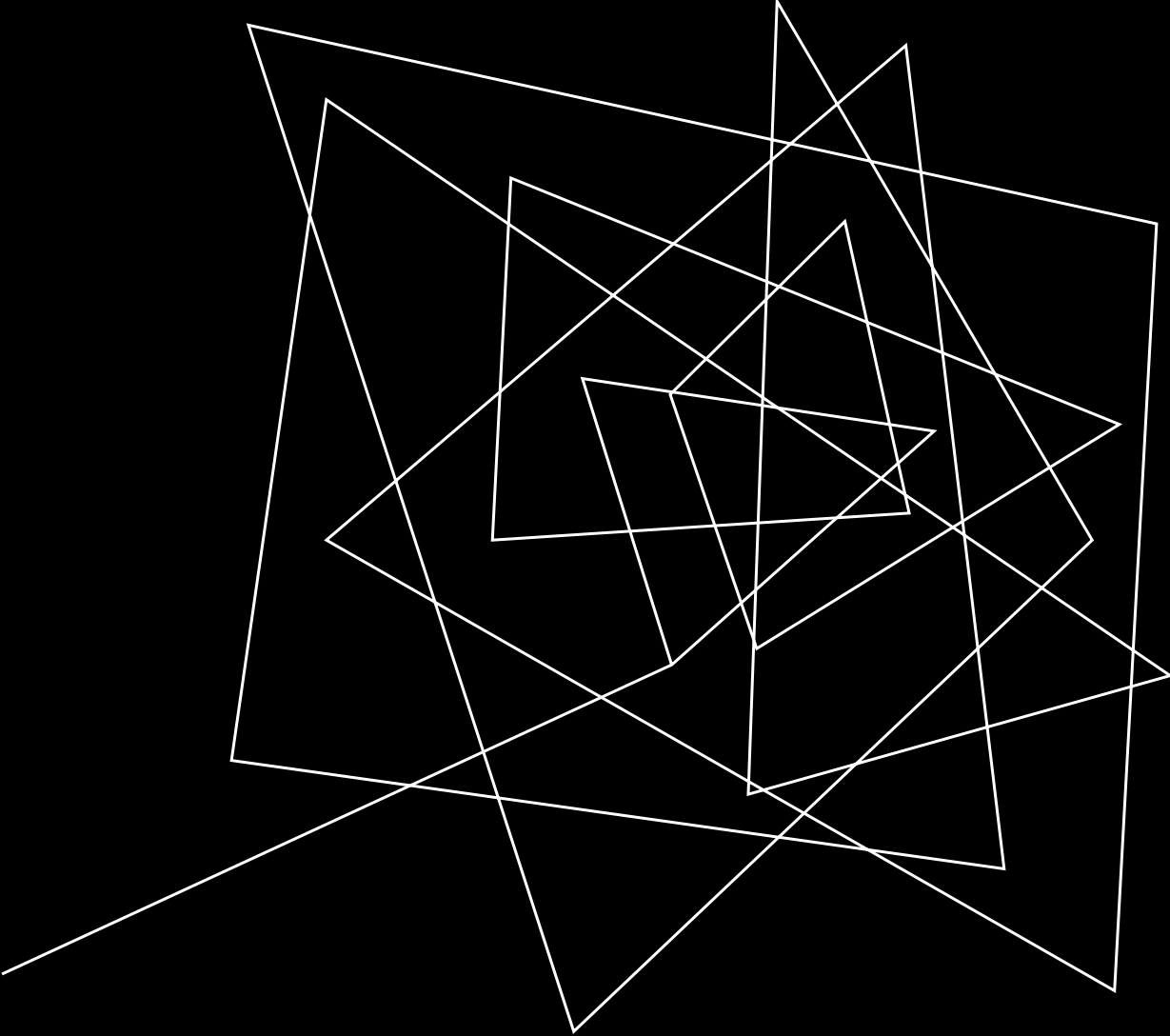
- Introduction
- Problems & Primary Objective
- Old Process
- Use Case – Time Saving
- Technologies Used
- New Process
- Live Demo
- Incorporated Systems – Rolled out
- Key Milestones
- Problems Encountered & Solutions
- Future Development
- Development since project completion
- Acquired knowledge and skills



INTRODUCTION

- Utilities sector since 2006
- Various roles (Business Systems)
- Expanded into general IT - road to SETU
- Inspiration for the project
 - Work Related
 - Adding value
 - KPI analytics





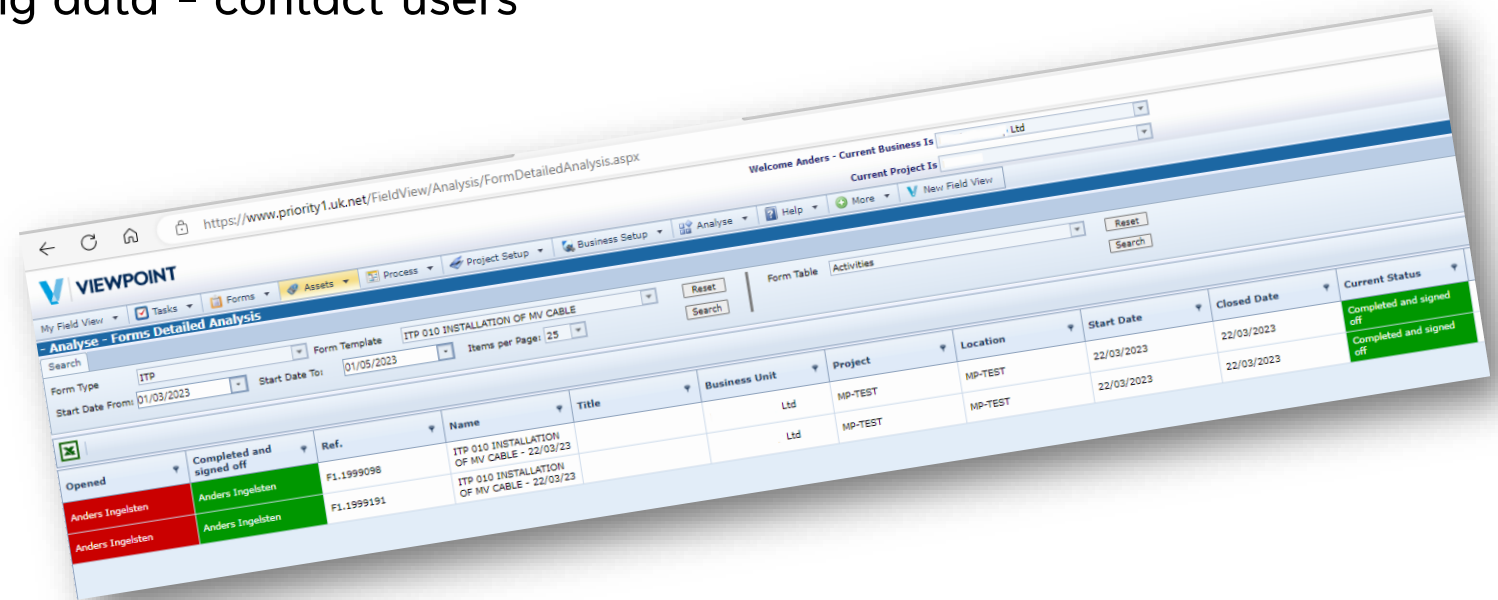
PROBLEM & PRIMARY OBJECTIVE

Data for KPI reports within the company were pulled manually from locally hosted and remotely hosted cloud-based systems. The data was then processed manually by staff into report visuals

This project's objective was to streamline and automate this process. By pulling data via system APIs and then making it available to PowerBI, by storing it into the organisation's SharePoint Online as CSV Data

OLD PROCESS

1. Access systems
2. Go to report view
3. Pull report to excel
4. Review data - if missing data - contact users
5. Create report visual
6. Circulate

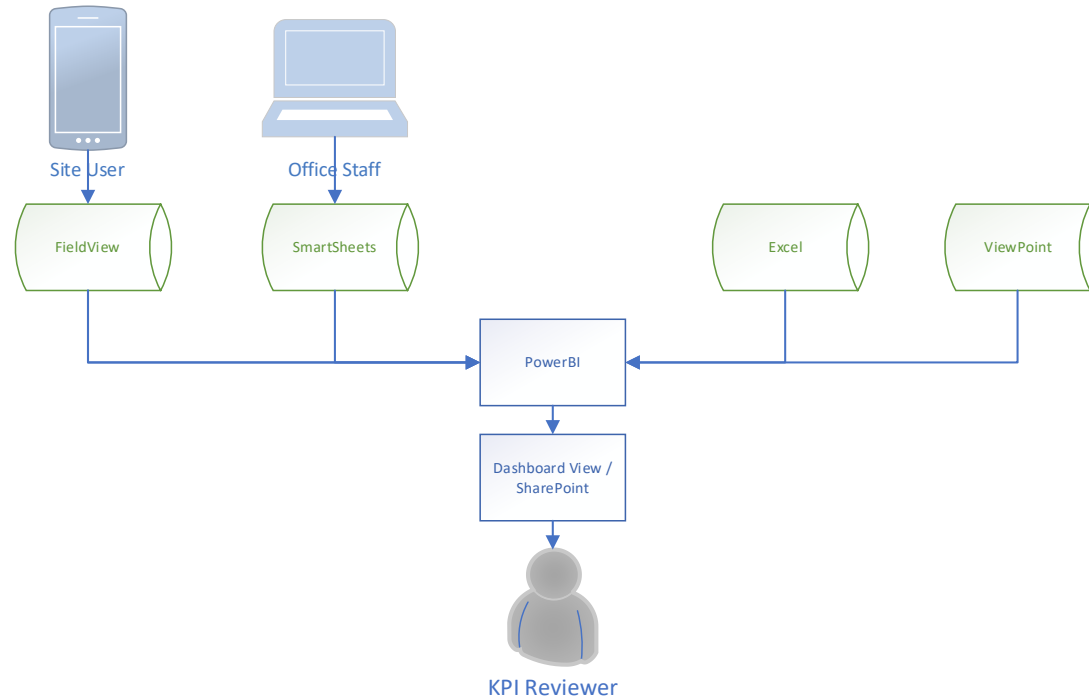
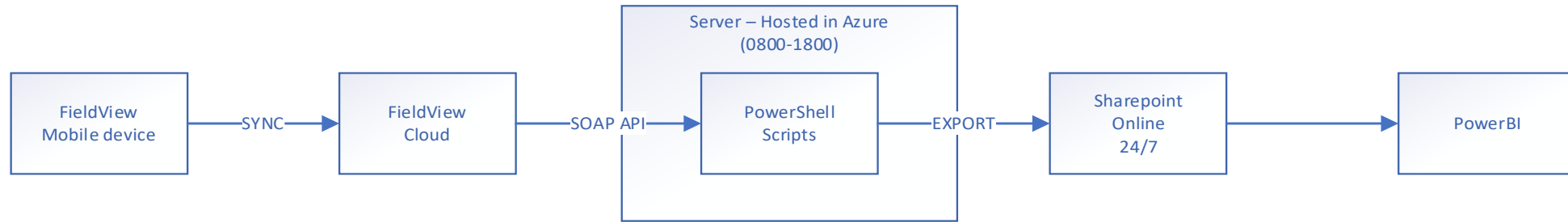


USE CASE – TIME SAVING

A user spends 1.5 hour every week to access Fieldview and compile a report of the amount of vehicle reports submitted by staff that week.
 $1.5 \text{ hours} \times 48 \text{ working weeks} = 72 \text{ Hours}$ which equates to 9 working days per year.

Annual Salary €45k = $173.08 \text{ per day} \times 9 \text{ working days} = €1557.72$

NEW PROCESS



TECHNOLOGIES USED



PowerBI



PowerShell



DAX



SharePoint

LIVE DEMO

```
Write-Output $projectid

#Getting data by created date
$FVApiForms.GetProjectFormsList($apiToken, $projectid, $null, 0, $datefrom, $dateTo, $null, $null, $null, $null, $null, $null).ProjectFormsListInformation.childnodes

$formsList = $FVApiForms.GetProjectFormsList($apiToken, $projectid, $null, 0, $datefrom, $dateTo, $null, $null, $null, $null, $null, $null).ProjectFormsListInformation.childnodes


#If statement for if data is null or not
if ($null -eq $formsList)
{
    Write-Output "*****NOTHING FOUND*****"
}
else
{
    Write-Output "Adding Projectid"

    #Adds the project id to Form as an identifier
    $formsList | Add-Member -MemberType NoteProperty -Name "ProjectId" -Value $projectid

    Write-Output "Writing to file"

    #Write result to file
    $formsList | Export-Csv -Path c:\scripts\All_Formslist.csv -append -NoTypeInformation

    Write-Output "Data written to file"
```

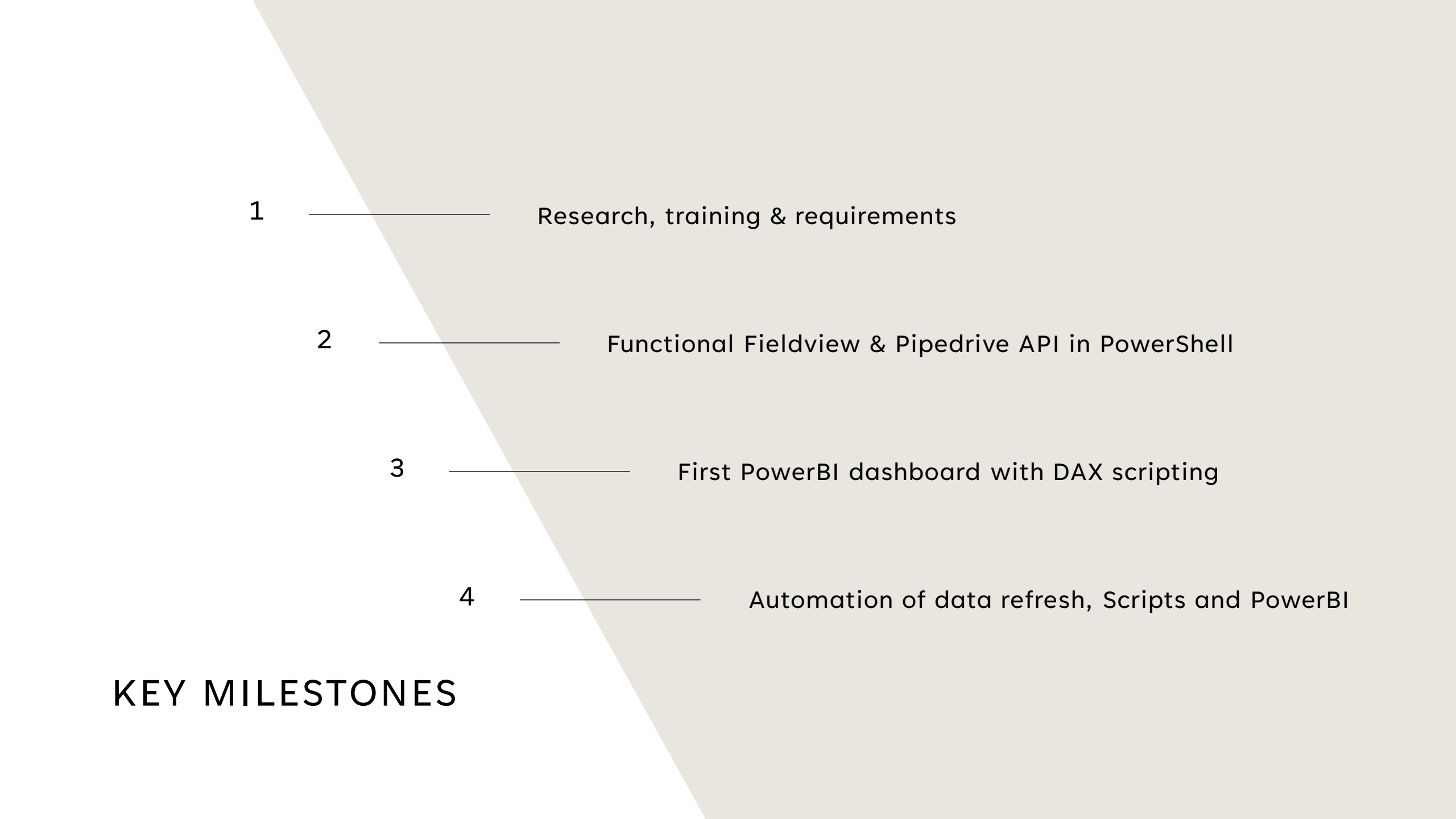


*“BEST THING YOU CAN DO NOW, IS TO
SHUT UP AND NOT TO TELL ANYONE ELSE
ABOUT THIS AND REMEMBER LOOK
AFTER OUR TEAM FIRST.”*

CFO & Company Supervisor

INCORPORATED SYSTEMS – ROLLED OUT

Smartsheet	Fieldview	Pipedrive	Asset Manager	O365
Timesheet table Visualization of hours per contract and users	Field Staff Hours Count of Vehicle forms Count of Forms	Deals & Activities Visualization of pipeline with weighted probability	Service Scheduled Visualization of upcoming service dates	Static data & reference tables

- 
- 1 — Research, training & requirements
 - 2 — Functional Fieldview & Pipedrive API in PowerShell
 - 3 — First PowerBI dashboard with DAX scripting
 - 4 — Automation of data refresh, Scripts and PowerBI

KEY MILESTONES



PROBLEMS ENCOUNTERED & SOLUTIONS

Design

Deciding upon which methodology to use, directly to PowerBI, Python etc.

Research resulted the PowerShell with Sharepoint Online path.

Power Automate

Power Automate Desktop flow to failing depending on user logged onto machine or not.

Utilizing Task Scheduler as a solution instead.

Data Connector

Discovering that Data connectors must be inside the corporate network.

Move connectors to devices that are more reliable than a laptop, hosted domain server.



FUTURE DEVELOPMENT

- **Review of the current state.** Iterations and tweaking of scripts, review of the refresh schedule
- **Adding more data sources.** Existing and new data from for example Fieldview as per company requests.
- **Long Term future functionality.** In relation to Data persistence other solutions will be reviewed, for example SharePoint Lists, MS Dataverse and Azure SQL Database can possibly be in scope.



DEVELOPMENT SINCE PROJECT COMPLETION

- **Published to more departments**
- **Training of staff in PowerBI drill down**
- **Automated PDF file export from Fieldview to SharePoint and PowerBI**
- **Changes to Schedule**



AQUIRED KNOWLEDGE AND SKILLS

- Setup, generate and publish PowerBI visuals.
- Pull in data sets and model their relationships.
- Using data-connectors for PowerBI.
- Using PowerShell to pull data over API's.
- Using DAX language for bespoke queries.
- Automation of PowerShell scripts and PowerBI data sets.
- Project Manage an IT project from start to finish.

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ANY QUESTIONS?

Anders Ingelsten

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<http://ingelsten.surge.sh/>