

Case Study



Digital Transformation – A global Gas & Oil company wanted to implement a Digital Transformation project in Egypt.

Industry

BP had a new gas pipeline constructed in Alexandria; Egypt called the West Nile Delta project. Every component from pipework, electrical, mechanical, and HVAC was monitored during the install, testing, commissioning, and start-up. A digital transformation implementation was required so that the staff in Egypt and the management team in London has the most up to date data. The objectives of this project was to:

- Improve latency of the data, so the data would be available globally in new real time.
- Provide a suite of reports so that all the project team had the reports in one central locations.
- Reduce the amount of paper used on the project.

Challenge

One of the key challenges was time factor for the data to be entered onto the system and then for this to be available for the management team based in

London. Prior to this implementation the management team then found it difficult to quickly make decision because of the delay in reporting data. With the older method of using paper and then transferring the data to the system meant that there was a latency of around 24 hours for reports to be available to the management team. This needed to be improved.

Solution

The solution was architected using Microsoft Azure platform including a database with automated ETL process. Azure SQL Server was used for landing data into the cloud.

Then the power platform was used for the automation and send out alerts to the email server. Power Bi used for the dashboard reporting. A Power BI workspace was set up with a suite of reports that included: management reports, operational reports,

financial reports, and H&S reports. All of these reports were setup securely with people only given access to the reports that they needed to see.

Regarding the commissioning Datahub created an automated app that had all the commissioning checks required. Using a Microsoft PowerApps on an iPad the commissioning engineer could inspect the installation, complete the checklist, and each component could be individually signed off in real-time. Mitigating the need to go back to the office to complete any paperwork.

This PowerApps application connected to an Azure Database that records and updates information. Power BI Dashboards reported on the commissioning in near real-time with the teams in Egypt and London.

If there were any failures, or notes made for additional work then Power Automate triggered an automated email and raises a request for the team to respond.

Datahub worked with the team in London but also travelled to Egypt to support the integration.

Outcome

BP successfully implemented the new pipeline and had a successful start-up. During the project all data was included in the digital transformation and the data was available globally within 3 hours of being updated on site. The saving was estimated as \$4.2 million savings on a \$5.7 billion project. With the success the model was then rolled out at other project sites including Angola, North Sea, and Alaska.

Technology We Used



Azure Data Factory

Azure data factory was used as an ETL tool to monitor and move the data between services. Providing the pipeline of data.



Azure SQL Server

Azure SQL Database is a fully managed platform with scalability to create table objects, define relationships, and create rules to host the structured data. This is where the data was imported and acted as a staging database for the solution. From here the data was transformed into a STAR schema in the data warehouse.



Azure Data Warehouse

Azure data warehouse was used to store all of the historic data. With approximately 12,000 data assets each was shipped, installed, tested, commissioned, and then part of the startup there was a lot of data to capture and the various statuses. This data warehouse used a STAR schema that included fact and dimension tables, also calculated business logic to improve the performance of reporting.



Power Apps

Microsoft Power Apps was used as a user interface where in this instance allowed the commissioning engineer to complete the checks, make recommendations and notify any defects. Instead of using paper this was entered digitally from the start allowing for data to be available immediately.



Power Automate

Power Automate provided the automated notifications should there be any defects. If a defect was raised with the Power App and this was logged through the database system then this action would trigger an alert with Power Automate. Sending an automated email to MS Outlook.



Power BI

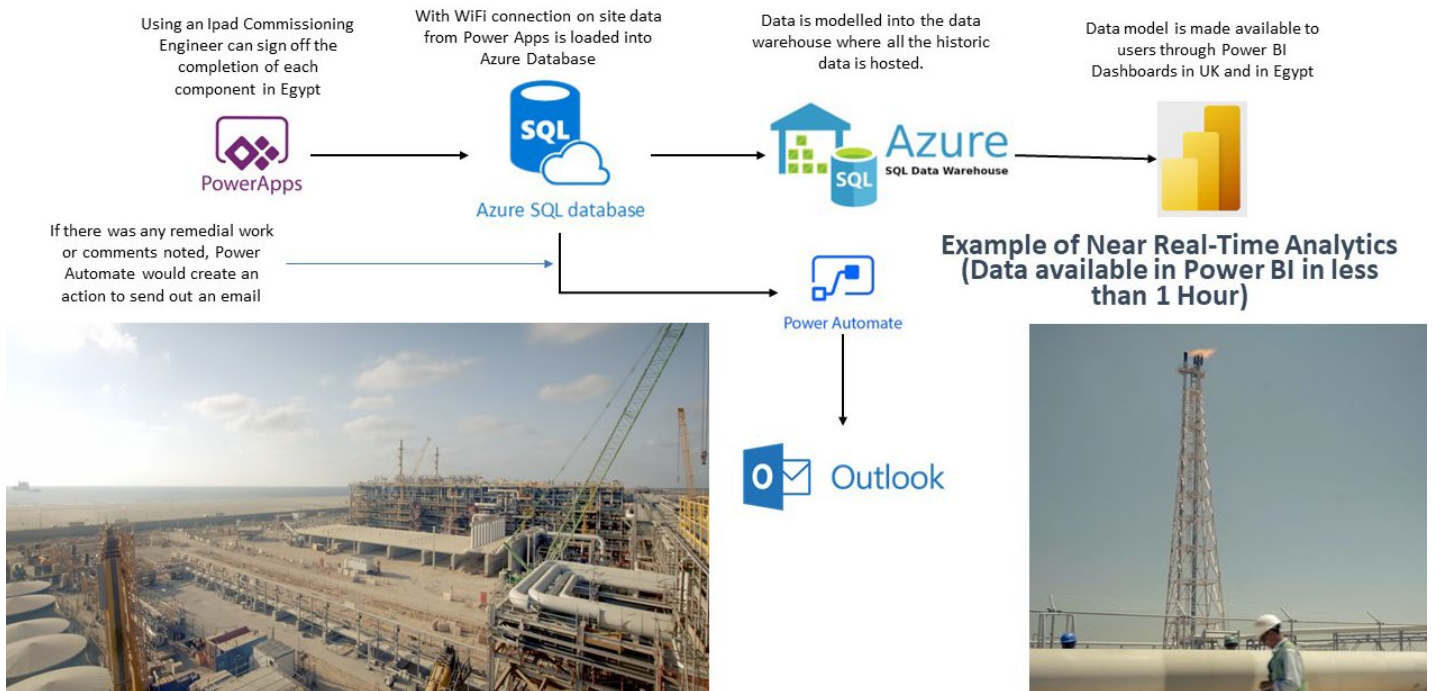
Power BI was used by the business in both Egypt and UK to visualise a suite of dashboards from health & safety, Operational reporting, management reports, and financial reporting. This allowed the business to have a 360-degree view of the project in near real time. Allowing for quick and informed decision making.



Microsoft Outlook

Outlook is the organisations email client and we integrated outlook into the power Automate alerts so that when a defect was raised the person responsible would instantly get a email alert sent to their email account. This meant that if they were travelling it would still be received via their mobile device.

How The Solution Was Designed



To see if Datahub Consulting could help your organisation with a Digital Transformation project. Please contact one of our office's where we will be happy to arrange a call to discuss.

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