Enabling Digital Transformation For A Leading Multi-Sector Manufacturing Conglomerate

- **A Case Study**

Client

- A joint venture between a global manufacturer based in the USA and a leading Indian industrial and services conglomerate that caters to industries like Automotive, Defense & Aerospace, Energy, Transportation, Oil & Gas, and more.
- They wanted to gain better insights from the vast data they had collected, fix their stagnant revenue curve, and achieve the targets for the FY.

Problem

Our client had difficulty gauging the revenue and operational performance due to various underlying factors.

- Multiple sources of unprocessed and large data with no common source of data.
- Lack of a central data warehouse for the massive amount of data.
- Absence of a comprehensive reporting system to keep track of all KPIs at a 360-degree level.
- Recurring concerns about the security of the enterprise's data.

Solution

Scope

Our team of experts carefully broke down the problem into components. Solutions for each of these components were brainstormed, and a proper flow of work:

- Source all data and store it in an object storage solution for the cloud.
- Analyze the multiple types of data.
- Combine the data from multiple sources and build a consistent data model in the cloud.
- Securing the model and system from cyber attacks.
- Create dashboards (as per the operations and key segments like Orders, Sales, Inventory, P&L, etc.) to visualize and gain better insights from the data.

Challenges Involved

With every problem, numerous challenges need to be taken care of. Listed below are some of the important aspects that we had to consider:

- Multiple types of data result in compatibility issues. Hence we had to take the data warehouse approach.
- The quality of data was of huge concern and we had to clean them, perform transformations, etc. For business logic, we had to be precise with calculations to ensure data sanity.

- Managing heavy workloads on data gateways due to the large amounts of data. This was done by categorizing report workloads in live connection and DirectQuery respectively.

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- Ensuring that the data model is up-to-date and scheduling of data refreshes as per requirement.
- Developing and maintaining efficient and optimized data pipelines for data ingestion at every step.
- Keeping the overall solution cost-effective for the client.

The DataToBiz Solution

The steps that we followed to execute our solution were as follows:

- **Data Sourcing:** The data was acquired from multiple sources and in different formats like flat files (Excel and JSON), legacy on-premise SQL, SharePoint files, and Microsoft OneDrive files.

- **Data Ingestion**: The massive amounts of unstructured data was then stored in Azure Blob storage. This was then converted into a structured format so that it could be fed to the data warehousing layer.

- **Data Storage:** To analyze multiple data formats (.xls, .csv, .json, etc.) we leveraged the Azure Synapse Analytics which is used for intelligent workload management.

- **Building the Data Model:** Next, with the help of a very handy tool- Azure Analysis Services, we built the data model on the cloud. This highly compatible platform as a service was used to combine and analyze multiple data sources and metrics.

- **Protection Against Cyber Attacks:** Azure Active Directory, an enterprise identity service was implemented to authenticate users and add conditional access. This would ensure that there is no threat to our client's data.

- **Data Visualization:** We created a customized dashboard to track all the KPIs that are needed for better insights. Power BI was used being the leading data visualization tool in the industry. It can be connected to multiple data sources and proves to be the ideal solution for the management to check the metrics and make data-driven decisions.

Business Impact

- Streamlined operations and the pace of the cycle improved by 17%
- 42% of overdue money cleared, approx. 20% above 181 days
- Delay in orders reduced from 502 to 368 units.