

# Digital Transformation of a Quartz Products Manufacturing Company

- A Case Study

## Client

A leading quartz products manufacturer for the semiconductor industry has two facilities located in the USA and Europe that serve customers around the world. The enterprise specializes in fabricating customized products as per the requirements of the clients.

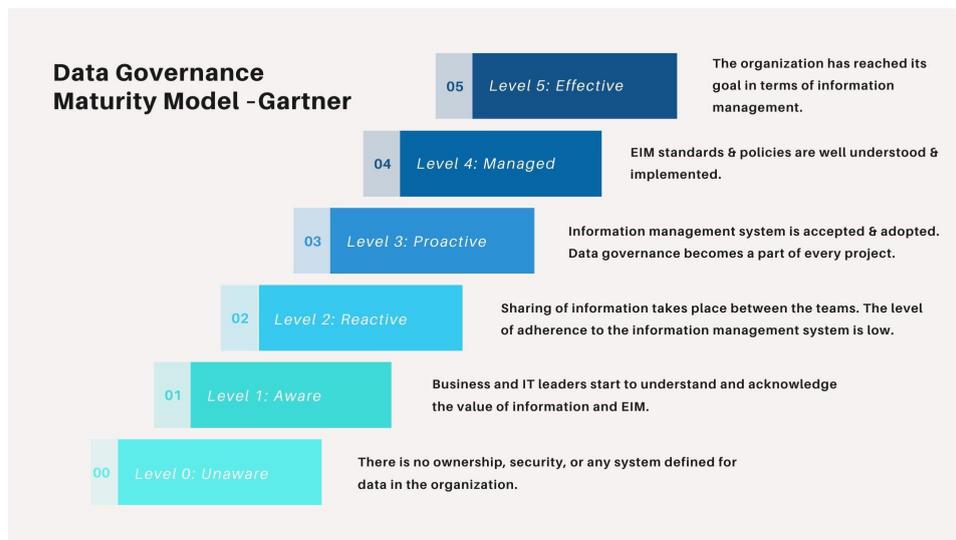
## Problem Statement

Our client manufactured quartz products per their customers' specifications and requirements. These products were pre-ordered by the businesses. This made it challenging to manage the tracking of the inventory and production.

The raw data was collected from multiple sources and there were no defined KPIs and definitions, resulting in discrepancies in different departments (data anarchy). Furthermore, the organization was highly dependent on tools for sourcing data and the enterprise data was not being leveraged to its full potential.

## Solution

Since there was no proper system in place to manage and analyze data, we understood the challenges faced by the stakeholders and decided to assist them in transitioning to a higher level of data governance maturity.



- We discussed with the C-level stakeholders on discovery calls to understand the operations, objectives, and priorities of each department. We noted down the data collection processes that were being followed.
- From the information gathered, we identified and resolved data discrepancies. Our experts defined the KPIs including categories and dimensions. Through continuous inputs and feedback from the stakeholders, we finalized the KPIs. Mockups of the dashboard were shared as well for any suggestions and changes.
- We developed a centralized enterprise data warehouse in which the data sourced from multiple sources were transformed and stored. The data migration was automated.
- We built real-time dashboards using Power BI for visualization of the data. Different dashboards were built for different functions of the business. The shareholders, customers, and employees could analyze and gain insights in real-time.

- We developed artificial intelligence systems for product and material tracking, defect and disposition tracking, product quality tracking, statistical process control (SPC), failure detection and control (FDC), engineering data analysis (EDA), predictive maintenance, predictive yield/output, plant optimization, and more. This was incorporated into the manufacturing units, screens, and floors.



**Quartz Tracker**

Product & Material Tracking, Defect & Disposition Tracking, Product Quality Tracking



**Quartz View**

KPI Scorecard, Manufacturing reports, Self service reporting, Manufacturing Dashboards.



**Quartz Control**

Statistical Process Control (SPC), Failure Detection and Control (FDC), Engineering Data Analysis (EDA)



**Quartz-ML Platform**

Machine Learning Platform, Predictive Maintenance, Predictive Yield/Output, Plant Optimization,

## Business Impact

- The complete digital transformation enabled the organization to detect anomalies or defects in real-time. Ensuring that the products were of the desired quality.
- The organization was able to reduce operational costs by 8% within a year of implementation of the AI and BI systems.
- The average lead time (from order to successful delivery) was reduced by a whopping 25%.
- Operations in the various departments were streamlined with the centralized data engineering infrastructure that we implemented.