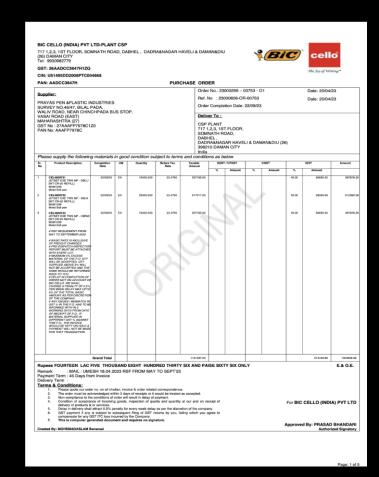
7

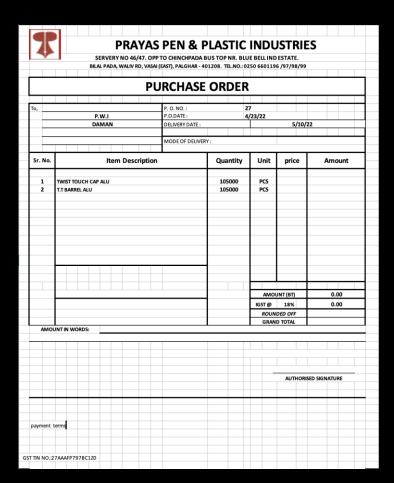
Prayas Pens and Plastics

- Established: 1979, Mumbai, India
- Expertise: Pen manufacturing and packaging
- Operations: Multiple factories and units
- In House: 80% of operations
- Focus: B2B sector



Current Data Storage Mechanism





Business Process

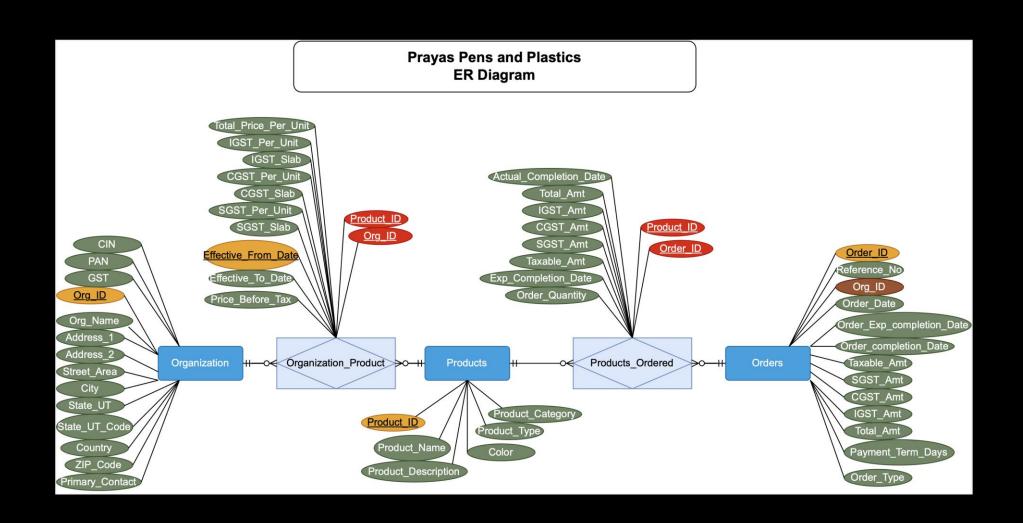
- Contractual Pricing
- Purchase Orders
- Raw Material Procurement
- Manufacturing
- Delivery

Project Objectives

- Data Standardization
- Digital Transformation Initiation
- Data Monetization



Conceptual Data Modeling



Normalization

All tables are in 3 NF except **Organization**.

Transitive dependencies in Organization:-

```
ZIP_code --> City
State_UT_Code --> City
State_UT_Code --> State_UT
State_UT_Code --> Country
```

Conversion to 3 NF

```
Organization (Customer ID, Name, Address_1, Address_2, Street_Area, ZIP_Code, Primary_Contact, GST, CIN, PAN)

Zipcodes (ZIP_Code, City) 

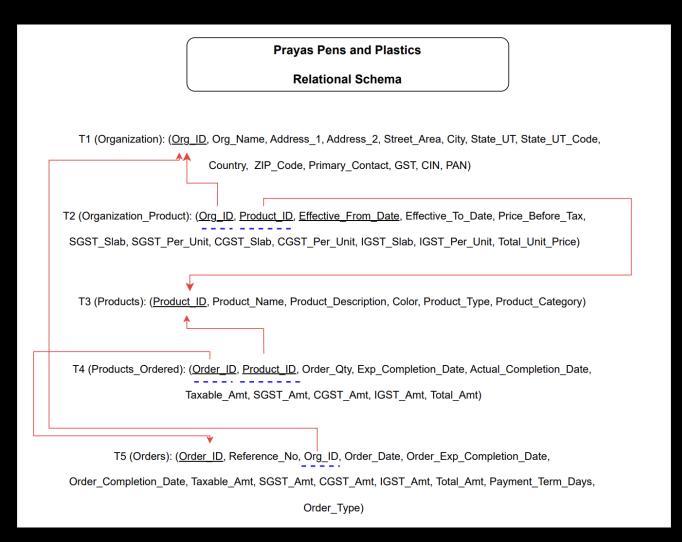
State_City (City, State_UT_Code) 

State_Country (State_UT_Code, State_UT, Country)
```

NOTE** Our clients, prioritizing simplicity and seamless daily operations, preferred a less complex database structure over the initially recommended 3rd Normal Form (3NF) design. With fewer than 200 customer records, they saw limited urgency in addressing data redundancy within their organization table.



Relational Schema



Data Insight Queries

Insights provided to clients –

- Clients that order the most from Prayas
- Suppliers that Prayas orders the most from
- Information about Revenue, AOV and Order Count
- Market Basket Analysis
- Order delivery estimation
- Products Analysis
 - Top products
 - Never been ordered before





Market Basket Analysis

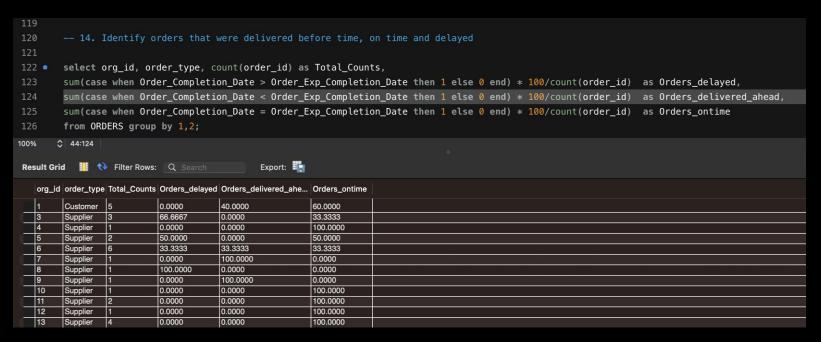
```
71
        -- 10(Joins) Find Products Purchased Together atleast 3 times
        SELECT po1.Product_ID, po2.Product_ID, COUNT(*) AS PurchaseCount
        FROM products_ordered po1
 73
        INNER JOIN products_ordered po2 ON po1.Order_ID = po2.Order_ID AND po1.Product_ID < po2.Product_ID</pre>
 74
 75
        GROUP BY pol.Product_ID, pol.Product_ID
        HAVING PurchaseCount >= 3
 76
 77
        ORDER BY PurchaseCount DESC;
 78
       12:73
100%
                                              Export:
Result Grid
              Filter Rows: Q Search
   Product_ID Product_ID PurchaseCount
   CEL4800724 | CEL4800725 | 3
   CEL4800724 CEL4800726 3
   CEL4800725 | CEL4800726 | 3
```

Market basket analysis identifies associations between products frequently purchased together. For Prayas, it would aid in—

- Inventory Optimization: Minimizes excess stock, maximizes sales
- Cross-Selling Opportunities: Boosts revenue through complementary sales
- Targeted Marketing: Precision in promotional strategies



Delivery Performance Analysis

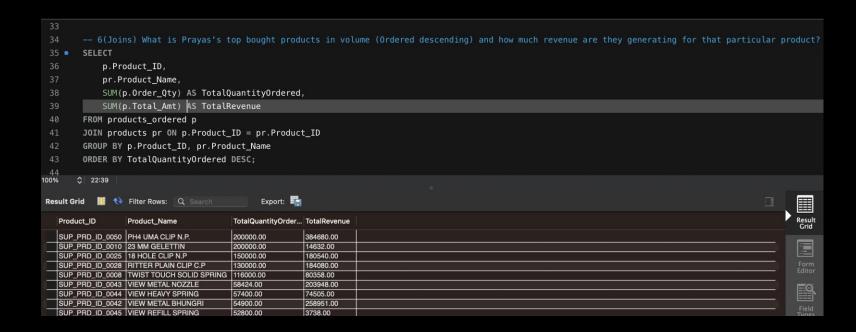


Delivery performance analysis helps Prayas understand the percentage of orders delivered before time, on time and delayed. With this information, Prayas can –

- Optimized Operations: Identifies and resolves bottlenecks in the manufacturing and delivery process, ensuring streamlined operations.
- Customer Satisfaction: Ensures timely and accurate deliveries, enhancing customer experience and loyalty.
- Cost Efficiency: Reduces expenses associated with delayed deliveries, rework, and customer complaints, leading to cost savings.
- **Resource Allocation:** Allows for better allocation of resources by identifying areas that need improvement in the delivery process.



Product Analysis



Product analysis includes an understanding of top selling products and the ones that do not sell –

- Inventory Focus: Directs attention to high-demand items
- **Profit Maximization:** Enhances revenue by promoting best-sellers
- Stock Clearance: Flags slow-moving products for adjustment

