INTEGRATING POWER BI ACROSS FINANCE, SALES, AND OPERATIONS FOR A MID-SIZED MANUFACTURING FIRM

1. Background and Problem Statement:

A mid-sized manufacturing firm operating across multiple product lines lacked a centralized reporting system. Departments were using fragmented tools—finance teams worked in Excel, sales reports came from CRM exports, and operations data was trapped in the ERP system. This disjointed approach created reporting delays, inconsistent KPIs, and difficulty in identifying root causes of business issues. The company decided to implement a **Power BI integration** strategy to consolidate data across functions and enable real-time decision-making.

2. Objectives:

- To integrate Power BI with ERP, CRM, and Excel-based financial systems

- To build department-specific dashboards for Finance, Sales, and Operations

- To automate data flows and standardize KPIs across the organization

- To enable role-based access to real-time performance insights and cross-functional visibility

3. Methodology:

Systems Integrated:

- **ERP (SQL Server):** Production planning, raw material usage, dispatch tracking

- **CRM (Zoho):** Sales pipeline, deal conversion, regional performance

- **Excel Workbooks:** Financial statements, budget vs. actual reports

- **Power BI Gateway:** For automated refresh and secure access

Integration Process:

1. **Data Audit and Mapping:**

   o Identified common fields across ERP, CRM, and financial data

   o Established unique identifiers for joining sales orders with production and financial records

2. **Power BI Setup:**
    - o Configured Power BI datasets using Power Query and direct SQL queries
    - o Defined standardized KPIs (e.g., Order Fulfillment %, Gross Margin, Working Capital Days)
    - o Applied Row-Level Security (RLS) for user-specific dashboard access

3. **Dashboard Development:**
    - o **Finance Dashboard:** Revenue, expense tracking, receivables aging, cash flow variance
    - o **Sales Dashboard:** Pipeline health, target vs. achievement, top-performing reps
    - o **Operations Dashboard:** Daily production output, material variance, OTIF (On-Time-In-Full)

4. Results:

- **Data consolidation reduced reporting time by 75%** across departments
- Finance team gained real-time visibility into receivables and margin tracking
- Sales leadership used dashboards for daily sales monitoring and forecast accuracy
- Operations managers identified production bottlenecks and reduced raw material waste by 12%
- Company-wide adoption of the dashboard as a decision-making tool improved cross-functional collaboration

5. Interpretation and Insights:

- Centralized KPIs enabled consistent performance benchmarking across business units
- Role-based access ensured each department focused only on relevant, actionable data
- Finance team was able to automate monthly closing metrics instead of compiling spreadsheets
- Visualization of production trends and raw material usage revealed overconsumption patterns in two key product lines

6. Recommendations:

- Expand Power BI access to plant supervisors for daily shift-level monitoring

- Add predictive forecasting models for demand planning and cash flow management

- Standardize KPI review meetings across departments using Power BI dashboards

- Introduce a shared data dictionary to maintain reporting consistency

7. Future Work:

- Integrate Power BI with the company's HR and procurement systems for complete enterprise visibility

- Migrate from Excel to cloud-based finance systems (e.g., Dynamics 365) for seamless integration

- Implement alert-based triggers (e.g., drop in OTIF, sudden margin changes) for proactive management

8. Stakeholder Relevance:

Academic:

- Demonstrates applied business intelligence integration across core departments

- Suitable for MBA coursework in MIS, performance management, and operations strategy

Corporate:

- A practical roadmap for mid-sized businesses looking to unify data and scale analytics

- Highlights the impact of real-time KPIs on finance, sales alignment, and operational efficiency