![Orbit reporting + analytics logo]

Empowering Manufacturing Leaders with Self-Service BI & Predictive Insights

Executive Summary

Manufacturers today are all trying to stay ahead of the game. In the current competitive environment, manufacturers are under significant pressure to streamline operations, cut expenses, and improve transparency across their supply chains.

Data-driven decision-making has become essential for maintaining efficiency, ensuring compliance, and improving profitability. **Modern Operational & Financial Reporting, Business Intelligence (BI), analytics, and self-service dashboards** empower manufacturing leaders by providing real-time insights, predictive analytics, and process automation.

This whitepaper explores the role of Operational Reporting, BI, analytics, and dashboards in the manufacturing sector, focusing on how these technologies drive operational efficiency, reduce wastage, and improve decision-making.

It also includes case studies of **Hindalco**, a global leader in aluminium and copper manufacturing, and **Global Foundries**, a leading semiconductor manufacturer, showcasing the tangible benefits of implementing Orbit's analytics and reporting solutions.

Introduction

Manufacturers operate in a highly complex environment, managing production, procurement, logistics, inventory, and compliance. With fragmented data spread across **Enterprise Resource Planning (ERP),**

Customer Relationship Management (CRM), and Supply Chain Management (SCM) systems, decision-makers struggle to access **real-time, consolidated insights**.

There is no doubt that forward-thinking manufacturing leaders will rely on data-driven insights to stream-line all aspects of the manufacturing lifecycle. According to research reported by Aberdeen Research & Strategy: Manufacturers using ERP software with real-time BI reduce operational costs by 23% and admin costs by 22%..

Gartner further reinforces this view, noting that modern supply chains—already vast and interconnect-ed—are only growing more complex, with thousands of products, partners, and geographies in play. Over the next two years, more than 50% of chief supply chain officers plan to significantly invest in digital tech-nologies to place data at the center of every decision.

Yet, despite the growing urgency for data-driven transformation, many manufacturers remain constrained by outdated, IT-dependent reporting systems. These legacy tools are too slow, too rigid, and too discon-nected to support today's dynamic operations. **What's needed is a modern BI and analytics platform with self-service capabilities—**one that empowers business users to instantly access the data they need, uncover trends, and act with speed and confidence.

Current Challenges in Manufacturing Intelligence

Data Silos and Complexity

Manufacturers generate massive amounts of data from multiple sources, including suppliers, production lines, warehouses, and transportation networks. However, **data silos and lack of integration** hinder their ability to make timely, informed decisions.

Supply Chain Inefficiencies

With raw materials, logistics, and distribution networks spread across multiple geographies, manufactur-ers struggle with supply chain visibility, leading to delays, increased costs, and inventory mismanagement.

Operational Cost Pressures

Manufacturers are under constant pressure to reduce costs while maintaining product quality. Poor visibility into operations results in inefficiencies such as excess inventory, underutilized assets, and unnecessary production downtime.

Compliance and Risk Management

Stringent regulatory requirements demand accurate tracking and reporting of financials, raw materials, emissions, and workplace safety. Ensuring compliance without real-time data access is a challenge for manufacturers operating in multiple jurisdictions.

The Role of Business Intelligence in Manufacturing

Improving Operational Decision-Making

Operational Reporting and BI tools aggregate data from ERP, SCM, and other systems into a single, easy-to-use dashboard, enabling manufacturers to:

- Track production efficiency and minimize downtime
- Optimize procurement and inventory management
- Reduce lead times and enhance delivery performance
- Gain better insights into cost structures

A modern tool like Orbit's Operational Reporting solution can bring together data from 100s of data sources into a single data warehouse with strong data management foundation at the core. With proven data security and governance, the solution makes it easy for various stakeholders to look at operational data that is relevant to them, garner insights from it, and make quick decisions based on real-time intelligence. Of course, with cutting-edge visualization capabilities, Orbit is also user-friendly, and people can go from **raw data to actionable insights very quickly.**

Enhancing Supply Chain Visibility

By integrating **real-time supply chain analytics,** manufacturers can:

- Monitor supplier performance and raw material costs
- Identify bottlenecks in transportation and logistics

- Reduce wastage and improve demand forecasting

Cost Optimization

Advanced BI tools provide cost-saving insights by analyzing:

- Energy and material consumption
- Labour and machine utilization
- Logistics costs and transportation efficiency

Compliance and Quality Control

Manufacturers can ensure compliance with financial, environmental, and safety regulations by leveraging BI-driven reporting and audit trails to track regulatory adherence and risk factors.

4-6% ↑

in EBITDA

Best-practice ERP implementations achieve EBITDA improvements of 4-6 percentage points within two years.

(Source: Boston Consulting Group)

37% ↑

in Productivity

AI-enhanced ERP delivers 37% higher productivity improvements compared to traditional ERP.

(Source: IDC Manufacturing Insights)

23% ↓

in Inventory Costs

ERP strategies have reduced inventory costs by an average of 23% and improved fill rates by 16%.

(Source: Supply Chain Dive)

Data Visualization and Self-Service Reporting

Self-service analytics and dashboards enable manufacturers to access, interpret, and act on data without IT dependency. By implementing **interactive visualization tools,** businesses benefit from:

- Faster access to critical operational metrics
- Reduced reporting time and improved accuracy
- Increased data democratization across departments

Empowering Stakeholders with Data

Factory managers, supply chain leaders, and finance executives can generate **real-time reports** for:

- Production line performance
- Supplier and inventory management
- Financial planning and budgeting

Enhancing Strategic Planning and Forecasting

BI tools enable manufacturers to:

- Forecast demand and adjust production schedules
- Identify trends in material costs and procurement cycles
- Align business goals with market conditions

Advanced Capabilities:
Predictive Analytics, Machine Learning, and AI

Manufacturers leveraging **AI and machine learning** experience significant improvements in forecasting, automation, and risk management.

Predictive Analytics for Demand Planning

By analyzing historical data, manufacturers can predict future demand, optimize production schedules, and minimize inventory holding costs.

Machine Learning for Process Optimization

ML algorithms can identify inefficiencies in manufacturing processes, suggesting improvements in production scheduling, machine maintenance, and raw material procurement.

AI-Driven Risk Management

AI-powered analytics can detect **anomalies and potential risks** in **financial transactions, procurement, and inventory tracking,** helping prevent fraud and ensure compliance.

Case Studies: Real-World Impact of Orbit Analytics

Case Study 1: Hindalco's Journey with Orbit

Client Profile

Hindalco is the world's largest aluminium rolling company and among the Top 2 producers of primary aluminium in Asia. The company is also engaged in copper smelting, cargo handling, manufacturing of chemicals, fertilizers and acids. With a consolidated turnover of over US $19 billion the company undertakes a wide gamut of operations from mining, refining, running captive power plants, aluminium smelting to downstream rolling, extrusions and foils.

Hindalco's acquisition of Aleris Corporation in April 2020, through its subsidiary Novelis Inc., has cemented the company's position as the world's largest flat-rolled products player and recycler of aluminium.

Project Scope

Orbit Reporting Solutions

- Data Visualization (Charts and Dashboards)
- Excel Reporting
- Financial Reporting

Orbit BI

- Supply Chain Analytics

Migration of reports from OBIEE to Orbit

Wide Range of pre-built reports

Background and Context

SCM leaders at the client company used Oracle EBS (Enterprise Business Suite) for enterprise resource planning, customer relationship management, and supply-chain management. Considering the very large scale of operations, there was a critical need for a world-class reporting and data visualization solution.

Specifically, the client wanted a reporting solution that would help their SCM leaders track data across the entire supply chain – from procurement of raw materials to the final product. Some of the key areas they wanted to track in real-time included:

1. Coal Inbound
2. Vehicle Inbound
3. Yard Management
4. Inventory Management
5. Summary of all key SCM data from Oracle EBS

While the team was using OBIEE, it was not easy for the business user to run self-service reports and analytics. The visualization features were also not as expected. There was high dependency on the IT team and this caused delays in getting the reports, hampering the ability to analyze reports and garner insights quickly. The team went around scouting for an alternate reporting and analytics solution and decided to go with Orbit for a variety of reasons.

The Solution

After evaluating different reporting tools in the market, the client opted for the Orbit Reporting and Analytics tool for its ease of use, self-service and advanced visualization capabilities.
The need for IT intervention was minimized to creating business objects and ensuring data governance and security. The superuser and end-user were empowered to generate the reports with the data as per their requirements and integrate it with Excel, which business users were comfortable with. They were also able to run their own macros and other plugins to work with the data based on their needs.

One of the requirements of adopting the Orbit tool was to move content from OBIEE to the Orbit tool with modifications to suit the new environment. The Orbit IT team undertook the migration effort and the smooth transition with minimum disruption was much appreciated by the client.

At that time, they were also looking for a business intelligence tool to improve their time and cost efficiencies. The satisfactory migration prompted them to opt for Orbit's BI tool to get a unified view of all their supply

---

chain data and garner insights from data sourced from multiple business applications.

Impact & Benefits

The end users were able to use the self-service and visualization capabilities of the Orbit BI tool to create dashboards and do a deep analysis of their end-to-end operations with special focus on:

- Inventory management
- Yard management
- Logistics movement

Users could create dashboards to:

- Monitor critical KPIs the of coal supply chain system at the leadership level through **Executive Summary.**
- Track the performance of each of their transporters through **Vehicle Inbound Report** and **Analytics** by analyzing real-time status on queue length, exception related delay, TAT etc. as well as historic trends on TAT average, process time and so on.
- Obtain the real-time profile of their stockpile for **Yard Management** through an analysis of the real time status of stockpile and tracking material movement (inbound and outbound) from different stockpiles over a specific period of time.
- Track coal through **Coal Inbound Report and Analysis** measuring it from multiple dimensions such as source, transporter, vehicle; measure the quality and quantity; and capture time-series trends.
- **Coal reconciliation** through an analysis of the energy and quantity received and consumed over a period of time.
- Obtain a **single view of the transporter** by analyzing the quantity bought across sources and over time, time lines, deviations in quarterly quantities, exception history and penalties against invoice value.
- Conducting a trend analysis of past **blend** plan through an analysis of expected vs actual outcome by shift and the differences between the system plan and the manual plan.

The Orbit reporting, analytics and BI platform was able to help the client improve their operational efficiencies, reduce wastage and thereby effect a huge savings – running to several million dollars annually. The self-service feature further empowered the end users to analyze data when they needed it, speeding up decision making. Orbit's scalability and integration features also enabled the users to have an enterprise-wide view of data to improve the quality of insights while the security and governance features ensured that the access was based on the role, authority and authorization.

Case Study 2: Global Foundries' Migration to Orbit Analytics

Client Profile

Global Foundries is a leading semiconductor manufacturer, providing high-growth chip solutions. With **14,600 employees and annual revenue of $6.59 billion,** they have production sites across **the U.S., Europe, and Asia.**

Challenges

- **Dependency on Oracle EBS for reporting,** limiting access to diverse data sources.
- **Reliance on Adobe Flash,** which became obsolete in 2020.
- **Lack of dashboard capabilities** for real-time operational insights.

Solution

- Migration from **legacy operational reporting tools** to **Orbit Analytics.**
- Seamless integration with multiple databases, including Oracle EBS.
- Adoption of **self-service analytics and dashboards** for manufacturing intelligence.

Results & Benefits

- **Successful migration** completed within two months with minimal disruptions.
- **Enhanced operational visibility,** improving decision-making speed.
- **User empowerment,** reducing IT dependency for report generation.
- **Stronger data governance and security,** ensuring compliance across operations.

Conclusion

Modern manufacturers must leverage business intelligence (BI), analytics, and self-service dashboards to maintain a competitive edge. These tools are no longer optional—they are integral to navigating today's complex operational and supply chain environments.

Increasingly, manufacturers with ERP systems are allocating a larger share of their IT budgets to BI and analytics, driven by the need for better operational reporting and real-time insights. These investments are delivering measurable outcomes: reducing costs, improving efficiency, and enabling data-driven decision-making at every level of manufacturing operations.

While specific dollar amounts vary based on company size and complexity, the trend is unmistakable—**BI and analytics have become core components of modern manufacturing ERP strategies.**

By integrating AI, machine learning, and predictive analytics, manufacturers can:

- Achieve cost savings through operational efficiency

- Gain real-time visibility into the supply chain

- Accelerate strategic decision-making

- Reduce compliance risks and improve governance

The verdict is clear: real-time operational & financial reporting and advanced analytics are going to become a key part of the decision-making and execution process of any manufacturing company.

By combining standardized templates, robust governance, targeted training and feedback-driven iteration, enterprises can compress deployment timelines, accelerate user uptake and secure the full business impact of Orbit Orbit websheets.

Recommendations for Manufacturers

1. **Invest in BI Solutions:** Adopt self-service analytics tools for real-time operational insights.
2. **Enable Data-Driven Culture:** Train teams to use BI for better decision-making.
3. **Leverage AI for Efficiency:** Implement predictive analytics to optimize supply chain and production planning.
4. **Enhance Governance and Compliance:** Use BI for financial transparency and regulatory reporting.

References

Deloitte Insights (2024) - Smart Factories and the Role of AI & Business Intelligence in Manufacturing.

Gartner (2024) - Business Intelligence and Analytics in Manufacturing: Key Trends and Best Practices.

Forrester Research (2024) - The Total Economic Impact of BI Solutions in Manufacturing.