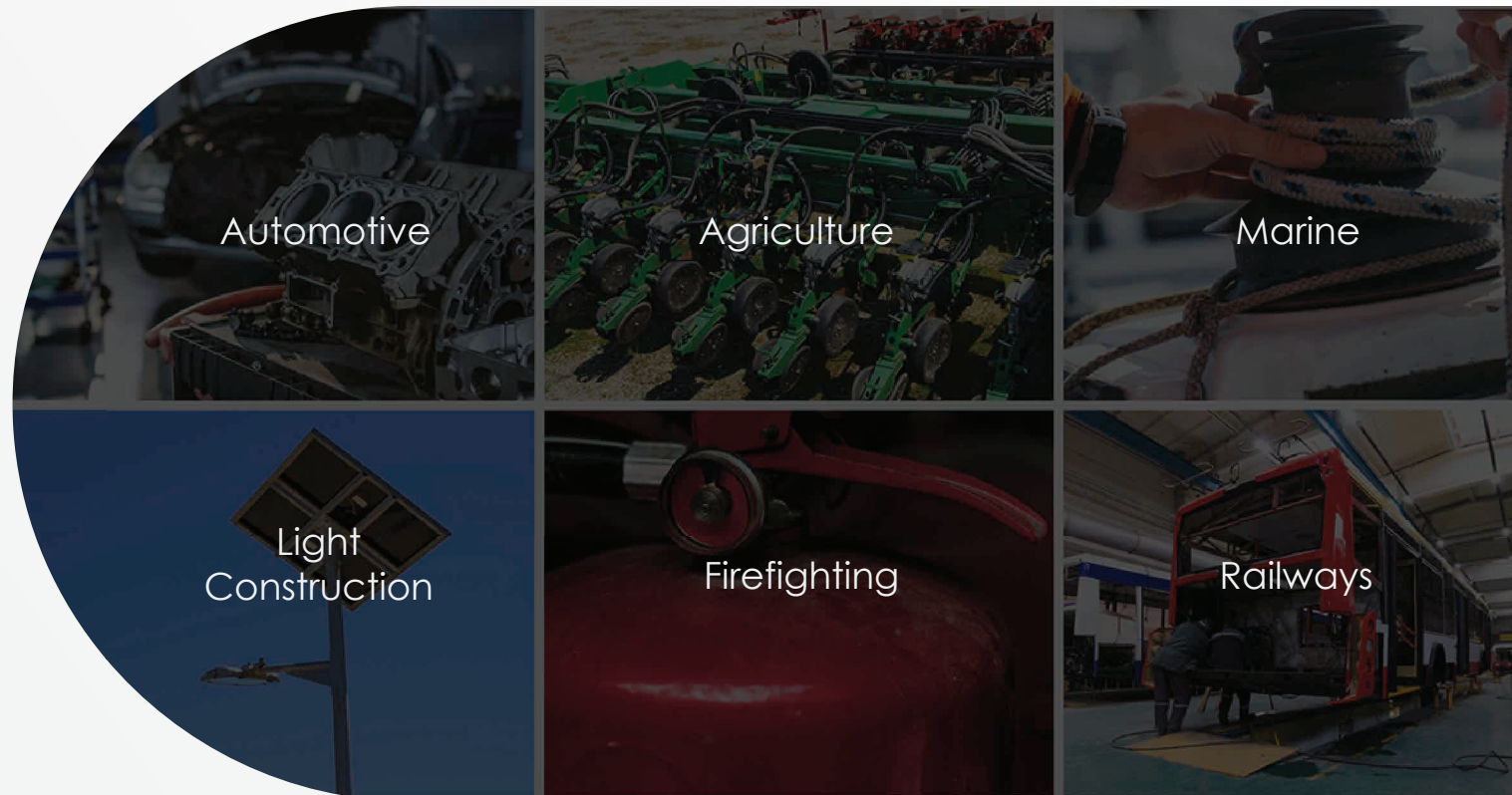


Case Study

Business Intelligence & Augmented Analytics

**Smarten Case Study: Augmented Analytics Solution for India
Powertrain and Sustainable Solutions Engineering Company**



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The Client

The Client is a prominent engineering company in India, renowned for its extensive history. For over 160 years the Client has delivered bespoke design engineering and precision manufacturing solutions, specializing in enabling seamless motion across industries that include automotive, agriculture, marine, light construction, firefighting, and railways. The Client provides cutting-edge power solutions for critical installations and diverse applications, with expertise in fuel-agnostic engines and precision manufacturing of key engine components. It has expanded offerings in electric power train for mobility and other industrial power applications and a strengthening position in the motion control solutions space with strategic acquisitions, empowering progress across multiple sectors. The Client business is publicly traded on the National Stock Exchange of India (NSE) and the Bombay Stock Exchange (BSE) and a robust distribution network including 200 distributors, 8000 retail stores and 20,000 mechanics across India.

The Objective

The Client wished to integrate data from multiple sources into a unified analytics ecosystem to enhance operational planning, execution, and

performance monitoring. The primary goal was to leverage advanced data analytics to optimize performance, drive innovation, and support strategic decision-making across multiple sectors. By consolidating information from manufacturing, powertrain, and motion control operations into a centralized repository, the Client aimed to eliminate data silos and ensure a single source of truth. This integration was meant to empower departments with timely, accurate insight to improve operational efficiency, strengthen financial oversight, and deepen customer engagement across diverse business verticals.

- **Enhanced Distribution Insights:** Offer real-time, ease-of-use access to detailed insight across the extensive distribution network in India, enabling swift and informed decision-making.
- **Operational Efficiency:** Streamline data analysis and reporting processes to eliminate manual tasks, optimize workflows, and boost productivity.
- **Financial Performance Reporting:** Provide comprehensive financial reports, including EBITDA, to evaluate business performance and financial health, and aid in effective financial planning.

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- **Strategic Decision-Making:** Support strategic initiatives with actionable insights, guiding long-term business strategies and market expansion.
- **Performance Gap Identification:** Use analytics to pinpoint under-performing departments and areas within the organization, and allow the Client to address operational inefficiencies and improve overall performance.
- **Data Integrity and Consistency:** Ensure centralized data management to maintain accuracy and consistency, across all operational and customer touch points.

By achieving these objectives, the Client aims to bolster its position in the market, ensure sustainable growth, and a competitive advantage.

The Challenges

- **Data Silos:** Enterprise data was dispersed across multiple databases, each with unique structures and departmental silos, making it difficult to create a unified view, and limiting cross-functional analysis and decision-making.

- **Department-Specific Reporting:** Individual departments required tailored dashboards and insights, each with different access controls and data sensitivity. Delivering consistent yet personalized reporting across all functions posed a major challenge.
- **Complex Data Consolidation:** Integrating diverse data streams into a centralized Management Information System (MIS) report for comparative analytics presented a technically demanding challenge, because of the variety of formats, sources, and update cycles.
- **Inconsistent Data Quality:** Variability in data entry standards and practices across business units led to inconsistent data quality, reducing the reliability of reports and increasing the risk of flawed insights.
- **Scalability Bottlenecks:** As data volumes grew, so did the strain on the system to deliver fast, responsive dashboards—making scalability a pressing concern for long-term usability.
- **Need for Visual-Driven Insights:** The Client required intuitive, visual dashboards to support high-level summaries and drill-down analysis with interactive and exportable capabilities to meet the diverse requirements of operational and executive users.

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- **Unlocking SAP HANA Potential:** Though the Client had an existing SAP HANA setup, and needed a complementary business intelligence (BI) solution to extract deeper, actionable insights from SAP data and seamless integration with other business systems.

The Solution

The Smarten team provided a tailored solution to address Client challenges using Smarten advanced analytics tools:

- **Demonstration and Integration:** The Smarten team demonstrated its augmented analytics features using Client sample data to demonstrate how the solution would solve data fragmentation and custom reporting issues. Smarten was then integrated with existing systems, including SAP HANA and Excel sources.
- **Proof of Concept:** A comprehensive proof of concept was developed, allowing the Client to evaluate Smarten self-service capabilities, ease of use, and scalability before finalizing the solution decision.

- **ETL and Meta-Data Structure:** The Smarten team designed the meta-data structure and supported the Client with the Extraction, Transformation, and Loading (ETL) process, including data cleaning and migrating reports from Excel sheets.
- **Training and Support:** Technical training was provided on administration, data source connectivity, and BI best practices, and regular hands-on sessions were conducted to ensure effective use of Smarten.
- **Collaborative Implementation:** The implementation was a joint effort between the Smarten team and the Client data team, to ensure a smooth deployment of the analytics solution.

By employing the Smarten augmented analytics and BI solution, the Client effectively consolidated its data, streamlined reporting, and improved overall data analysis capabilities.

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Technology & Platform

Server	: Intel(R) Xeon(R) Gold 6326 CPU @ 2.90GHz 2.89 GHz
Operating System	: Windows Server 2019
Applications	: MS Office
Back-end (Database)	: SAP HANA database
Integration	: SAP BAPI for data extraction and integration with SAP systems

Key Analytical Objects Implemented

Management Dashboards

- **Overview** – Track PY/CY Sales, CY Collections, Total Inventory, Total Outstanding, and overall business performance.
- **Revenue** – Track Total Sales, Auto AEB/AMB Sales, Non-Auto Sales, and provide Month-on-Month (MoM) and Quarter-on-Quarter (QoQ) comparative analysis.

- **Collections** – Monitor Total Collections, Auto AEB/AMB Collections, Non-Auto Collections, and collection trends.
- **Inventory Overview** – Highlight Total Inventory trends, including Auto AEB/AMB Inventory, FG Inventory, and Inventory MoM/QoQ.
- **Outstanding Overview** – Provide summary of Total Outstanding, Auto AEB/AMB Outstanding, Overdue trends (MoM/QoQ), and other receivables.
- **Ageing Analysis** – Track Collections Ageing Analysis to monitor overdue receivables and pending amounts effectively.
- **Debtor Aging** – Focus on Debtor Ageing Analysis to identify receivable patterns and overdue time periods.
- **Inventory Movement** – Analyze the IDEAL Inventory Position for efficient inventory management and movement tracking.
- **Business Snapshot** – Provide a summarized Business Snapshot covering key operational and financial metrics.
- **Receivables Analysis** – Deliver detailed Receivables Analysis, including outstanding amounts by business group and ageing buckets.

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- **Month on Month Sales by Business Group** – Compares Month-on-Month Sales by Business Group to analyse sales growth over time.

Corporate Finance

- **Business KPI Dashboard** – Track Net Revenue and EBITDA performance, highlighting percentages before corporate overhead and PDD.
- **P&L Reports** – Provide a detailed analysis of departmental profits and losses, including revenue, expenses, and key financial metrics to assess overall performance.
- **Payment and Receipt Report** – Provide information for business division payment and collection details on daily basis.
- **Cost Center Expense Report** – Provide information for business division cost center expense details on Monthly basis.
- **Customer Outstanding Report** – Provide information on customer outstanding details with overdue and not-due status.

- **Weekly Position Report** – Provide a customized Print PDF report offering a detailed view of Revenue and Inventory analysis, tailored to track and evaluate weekly performance.

Auto Dashboards

Auto engines include a versatile range of fuel-agnostic options, including diesel, CNG/LPG, and petrol options, tailored for three-wheeler and small four-wheeled commercial vehicles.

- **AEB Overview** – Track PY/CY Sales, sales by engine family, and periodic comparisons for auto segments.
- **AEB Inventory** – Analyze finished goods, raw materials, and store inventory trends for AEB.
- **AEB Outstanding Overview** – Monitor outstanding analysis, including overdue trends and top customers.
- **AEB Reports** – Generate daily sales MIS reports and tracks sales by customer and engine family.
- **AMB Trend** – Track gross/net sales trends, collections, and inventory performance for AMB.

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- **AMB Inventory** – Monitor AMB-specific FG, RM, WIP, and loose tools inventory.
- **AMB OS Overview** – Monitor customer outstanding metrics, identifies trends, and highlights top overdue accounts.
- **AMB Revenue Report** – Provide segment revenue reporting.
- **AMB Customer Report** – Track region and customer revenue metrics.
- **AMB Region Report** – Monitor revenue performance region.

Non-Auto Dashboard

Non-Auto engines are internal combustion engines designed for diverse applications outside the automotive sector. These engines are used in power generation, marine propulsion, agriculture, light construction, industrial operations, and firefighting.

- **Overview** – Provide sales and collection metrics, including CY/PY Sales, Sales by Business Head, and Inventory Stock Position.
- **Segment** – Track total and segmented sales performance (APB, FEB, IEB, NASE, and others).

- **Trend** – Monitor periodic trends in sales and collections across business groups and sales categories.
- **Inventory** – Analyze inventory levels, business group, product, and periodic comparisons.
- **Inventory Trend** – Track finished goods, raw materials, and store inventory trends for non-auto segments.
- **Outstanding Overview** – Provide customer outstanding insights, including overdue, not-due, and active customer analysis.
- **MIS Tracker** – Monitor business processes with MIS Tracker.
- **MIS Region** – Track MIS data region for better geographical analysis.
- **MIS State** – Analyze MIS data by state for more detailed regional tracking.
- **Inventory Analysis** – Provide business group analysis for inventory levels and performance.

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The Smarten Team Role

As a manufacturing company, it is extremely important for the Client to track, evaluate, and monitor project success through robust analytics, flexible views, and access rights management. The Smarten team helped the Client structure its data and establish a corporate Business Intelligence and Analytics system, taking analytics beyond a simple reporting tool.

As part of the project approach, the Smarten team performed numerous tasks and activities, including:

- Understanding various data sources
- Understanding current reporting structure and flow
- Functional and operational specifications
- Designing meta-data structure for datasets
- Optimization and performance monitoring and maintenance
- Conceptualization, design, and development of dashboards, KPI, reports
- User acceptance testing (UAT)

- Go Live Support
- BI concepts and best practices sessions
- Technical training
- Administration training
- Business analyst training
- End user training

Key Benefits and Deliverables

- **Unified Business Intelligence Platform** – Consolidated data from SAP HANA and other sources into a single platform, enabling cross-functional visibility and real-time reporting across business units.
- **Customized, Department-Specific Dashboard** – Delivered tailored dashboards and KPIs with access controls, empowering each department to independently monitor metrics while maintaining data governance.
- **Operational Streamlining and Automation** – Replaced manual reporting workflows with automated, dynamic dashboards that

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significantly reduced reporting turnaround time and enhanced productivity.

- **Advanced Visual Analytics** – Provided interactive, exportable dashboards with trend analysis, inventory movement tracking, and sales performance monitoring, supporting intuitive, insight-driven decisions.
- **Enhanced SAP HANA Utilization** – Maximized the value of existing SAP HANA infrastructure by integrating the Smarten self-service BI layer, unlocking deeper, actionable insights from enterprise data.
- **Scalable, Future-Ready Architecture** – The implemented solution was designed to scale seamlessly with growing data volumes and business complexity, ensuring long-term adaptability.

These deliverables provided the Client with a robust analytics foundation to enhance operational and financial visibility and enable self-service capabilities across departments. By streamlining data access, automating manual reporting tasks, and equipping users with interactive dashboards, the solution drove faster, more reliable decision-making, and improved cross-functional

collaboration. The successful implementation positioned the Client to scale its data strategy, adapt to evolving business needs, and extracting greater value from its enterprise systems—ultimately supporting long-term innovation and sustainable growth.

Conclusion

By leveraging the Smarten advanced analytics solution, the Client successfully overcame data fragmentation, and achieved its goals, including user-specific analysis requirements, and complex data integration with easy-to-use analytics that enabled rapid, dependable decision making and supported its objectives for market expansion, improved time-to-market and user satisfaction. The solution implementation established a unified platform for comprehensive reporting, empowering all departments and users with actionable insights to improve decision-making, operational efficiency, and financial planning. Enhanced dashboards and interactive visualizations enabled real-time performance monitoring, and streamlined workflows, and identified performance gaps, while ensuring data integrity and consistency across all divisions and operations.

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Contact Us

Elegant MicroWeb Technologies Pvt. Ltd.

A-305, Shapath - IV, Opp. Karnavati Club,
SG Highway, Ahmedabad-380051 India
Email: contact@Smarten.com
URL: www.Smarten.com

Sales & Partnership:

For sales, licensing, and partnership-related inquiries,
please email sales@Smarten.com

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