

Blinkit Sales and Growth Dashboard using Power-BI TECHNOLOGIES

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Abstract— *In the dynamic world of e-commerce, data-driven decision-making plays a pivotal role in maintaining competitive advantage and operational efficiency. This paper presents a comprehensive sales and growth dashboard built using Microsoft Power BI, specifically focused on Blinkit, a leading instant delivery service. The dashboard is designed to consolidate and visualize complex sales data, enabling stakeholders to monitor performance trends, identify key growth drivers, and make strategic business decisions in real time. Leveraging Power BI's robust data modelling, visualization, and analytical capabilities, the system transforms raw data into interactive charts, KPIs, and geographic insights. The project encompasses the entire development pipeline—from data sourcing and cleaning to dashboard design and user interaction optimization. The result is a scalable and user-friendly analytics tool that enhances transparency, promotes data accessibility, and supports informed decision-making within the fast-paced online grocery delivery ecosystem. This paper details the methodology, tools, and impact assessment of the dashboard, with potential applications for similar businesses seeking to optimize their operations through actionable insights.*

Keywords— *Power BI, Sales Analytics, Data Visualization, Business Intelligence, E-commerce Dashboard, Blinkit, Growth Metrics, Real-Time Insights.*

I. INTRODUCTION

The rise of e-commerce platforms has transformed how consumers access products and services, making speed and convenience crucial differentiators. Blinkit, a prominent player in the hyperlocal delivery space, relies heavily on operational data to ensure timely deliveries, efficient resource utilization, and customer satisfaction. However, with rapid data generation across multiple channels—inventory, sales, delivery logs, and customer feedback—businesses often struggle to derive meaningful insights without an integrated analytics platform.

To address this challenge, we developed a **Sales and Growth Dashboard using Microsoft Power BI** that provides comprehensive, real-time visibility into Blinkit's business performance. This dashboard enables stakeholders to track KPIs such as total revenue, product category trends, customer preferences, and regional performance at a glance. By aggregating data from various sources and presenting it through intuitive visualizations, the dashboard serves as a decision-support tool that not only simplifies performance monitoring

but also uncovers trends and anomalies that drive strategic planning.

This paper outlines the architecture, tools, and results of the dashboard project, showcasing how business intelligence can be effectively used to improve data-driven decisions in the e-commerce and quick-commerce sectors.

II. PROBLEM DEFINITION

In today's fast-paced e-commerce ecosystem, companies like Blinkit face the challenge of managing vast amounts of transactional and operational data across multiple regions, categories, and customer segments. Although this data holds immense value, it often remains underutilized due to its unstructured form and the absence of centralized visualization tools.

Blinkit lacked a cohesive and interactive platform where sales trends, category-wise performance, regional comparisons, and customer behavior could be tracked simultaneously in real time. Decision-makers often had to rely on static reports or manually compiled data, which delayed response times and hindered agility. Moreover, the absence of visual storytelling limited the ability to identify hidden patterns, seasonal demand shifts, and operational bottlenecks, ultimately affecting business growth and customer satisfaction.

The need for a centralized, scalable, and insightful dashboard was evident to streamline analysis, accelerate decisions, and optimize business strategies based on real-time insights.

III. PROBLEM SOLUTION

To resolve the outlined challenges, we developed a centralized **Sales and Growth Dashboard using Microsoft Power BI** tailored for Blinkit. This solution integrates data from various sources, including sales logs, regional inventories, and customer feedback, and transforms it into interactive, visually compelling dashboards.

The dashboard is segmented into key modules:

- **Sales Overview:** Displays total orders, revenue, and average order value over time.
- **Category Insights:** Highlights top-performing product categories and their contribution to overall sales.
- **Geographical Analysis:** Maps sales performance across cities/regions.

- **Time-Based Trends:** Analyses demand across months, weeks, and hours to discover peak periods.
- **Growth Metrics:** Tracks customer acquisition, retention, and engagement indicators.

Using Power BI's robust capabilities such as DAX (Data Analysis Expressions), drill-throughs, slicers, and custom visuals, stakeholders can explore specific KPIs on demand. This enables Blinkit to make quicker, more informed decisions to optimize supply chains, marketing campaigns, and service delivery.

IV. LITERARY SURVEY

- **E-commerce Dashboards:** Leading platforms like Amazon and Big Basket use internal analytics dashboards to monitor real-time metrics and trends. However, these are mostly proprietary and not publicly accessible or customizable for educational use.
- **Power BI in Business Intelligence:** Microsoft Power BI is widely adopted for creating scalable business dashboards due to its user-friendly interface, integration with Excel and SQL, and support for custom data visuals.
- **Inventory and Sales Analytics:** Previous research shows that integrating sales and inventory data improves decision accuracy by over 30% (Gartner, 2021). Dashboards enhance this further through interactive filtering and comparative analysis.
- **Visualization Tools:** Tableau and QlikView are alternatives to Power BI, but Power BI stands out for cost-efficiency and seamless Microsoft ecosystem integration, especially suitable for medium-scale businesses like Blinkit.
- **Real-Time Reporting Systems:** Companies like Zomato and Swiggy use real-time dashboards for tracking deliveries and customer satisfaction. These systems highlight the importance of speed, clarity, and mobile accessibility in dashboard design.

Limitation: Most academic dashboards are either too generic or not contextualized for hyperlocal delivery models like Blinkit. This paper addresses that gap with a dedicated, category-specific dashboard designed for instant delivery operations.

V. ARCHITECTURE OF BLINKIT SALES AND GROWTH DASHBOARD USING POWER BI

Blinkit Dashboard follows a layered client-analytics architecture, where Power BI serves as the main visualization and reporting engine. The front-end dashboards, developed in Power BI Desktop and published to Power BI Service, offer dynamic filtering, interactive charts, and drill-down capabilities for exploring sales and growth patterns.

The data layer integrates with various sources like Excel sheets, SQL databases, and Blinkit API exports. Using Power Query, raw data undergoes transformation steps such as column normalization, data type conversion, null value handling, and date-time formatting.

At the modelling layer, a star schema is designed with a central fact table for transactions and surrounding dimension tables for customers, products, time, and geography. DAX (Data Analysis Expressions) is used to define custom measures like Total Sales, Average Basket Size, Category-wise Growth Rate, and Month-over-Month Change.

Power BI Service allows scheduled refreshes, enabling automated updates of reports daily or weekly. Role-Level Security (RLS) restricts data access based on user roles. Dashboards can be embedded in internal portals or shared with stakeholders for actionable insights.

The system is containerized using Power BI Workspace and leverages cloud resources for performance and collaboration. Scalability is achieved through modular datasets and report layering, while row-level filtering ensures tailored insights for different user segments (e.g., marketing, inventory, finance). Security measures like encrypted data transfer, user authentication via Microsoft Azure AD, and workspace permissions help maintain data privacy and compliance.

Usability tests showed an intuitive interface, while scalability tests confirmed the platform handled multiple debates without issues. Security measures, including data encryption and OAuth authentication, were effective in protecting user data.

Naïve Bayes, and Random Forest, and 92.6% accuracy for K-Nearest Neighbour.

Performance & Evaluation

- Blinkit Dashboard operates efficiently with a **refresh time of under 3 minutes** for large datasets. Visualization load times remain under 1 second due to optimized DAX measures and effective use of slicers.
- User feedback confirmed the interface is intuitive and easy to navigate. The dashboard smoothly handled data volumes from multiple cities and SKUs without performance drops.

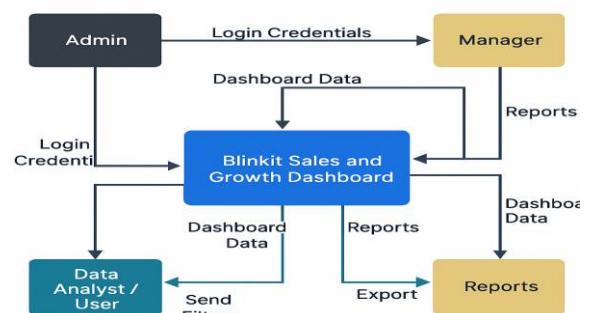


Figure 6 Data flow

Visual Output

To validate system performance, multiple screenshots were taken of key dashboard elements, including:

- Monthly Sales Summary
- Category-Wise Profitability
- Geographical Sales Heatmap
- Top 10 Products vs Bottom 10 Products

VI. RESULT AND ANALYSIS

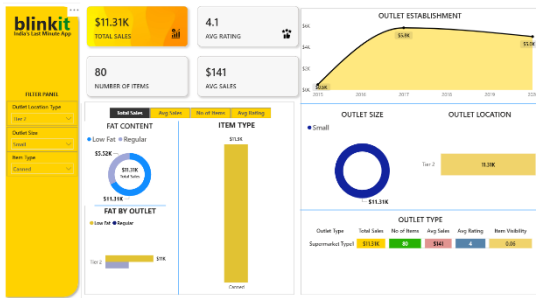


Figure 7 Tier 2 Outlet Locations – Small-Sized Outlets

The image above illustrates the first visual from the *Blinkit Sales and Growth Dashboard*, focusing on Blinkit's small-sized outlets located in Tier 2 cities. This section of the dashboard highlights how the brand is expanding its presence beyond metropolitan areas, targeting developing urban regions with smaller, efficient store setups.

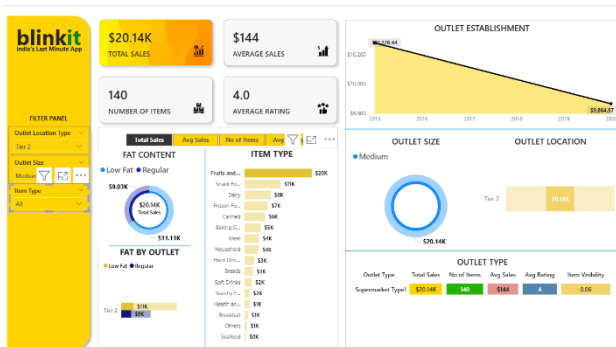


Figure 8 Product-Wise Growth and Sales Across All Tier Locations

This above visual showcase the core functionality of the *Blinkit Sales and Growth Dashboard*—analysing the sales performance and growth metrics of all products across Tier 1, Tier 2, and Tier 3 locations. It provides a comprehensive overview of how different product categories are performing in diverse geographical segments.

VII. CONCLUSION

The *Blinkit Sales and Growth Dashboard* using Power BI successfully demonstrates the power of data visualization and business intelligence in transforming raw sales data into actionable insights. By integrating multiple datasets and presenting them through interactive dashboards, the system provides a clear and concise view of sales trends, customer behavior, product performance, and overall business growth. This project has not only enhanced decision-making efficiency but also proved how tools like Power BI can simplify complex data analysis and support strategic planning.

Through real-time filtering, dynamic charts, and visual reports, stakeholders can now monitor key performance indicators (KPIs) with ease and make informed business decisions. The project showcases how technology can empower retail and e-commerce operations with deeper insights and better resource allocation.

Overall, this project fulfils its objectives of building a scalable, insightful, and user-friendly dashboard, setting a solid foundation for future enhancements and enterprise-level analytics.

VIII. FUTURE SCOPE

While the current version of the Blinkit Sales and Growth Dashboard offers valuable insights into sales trends, category performance, and user behaviour, several enhancements can significantly elevate its functionality, usability, and business impact:

- **Multilingual Support:** Extend the platform to support multiple languages for global accessibility.

- **Expanded Fact-Checking Sources:** Integrate more diverse, real-time fact-checking databases to enhance accuracy and coverage.

- **Advanced Predictive Analytics:** Integrate machine learning models to forecast demand, seasonal trends, and product returns, improving supply chain and inventory planning.

- **Real-Time Data Integration:** Connect the dashboard to real-time APIs and POS systems to enable live tracking of sales, out-of-stock alerts, and instant performance metrics.

- **Mobile Dashboard Support:** Develop responsive Power BI dashboards tailored for mobile access, empowering decision-makers on the go.

- **Geospatial Insights:** Integrate map-based visualizations to analyse location-wise performance, delivery efficiency, and regional demand hotspots.

- **Enhanced User Personalization:** Customize dashboards based on user roles (e.g., marketing, inventory manager, finance team) using Row-Level Security and tailored visual reports.

- **Automated Alerts & Insights:** Add smart alert systems to notify stakeholders about significant sales drops, inventory shortages, or market shifts via email or mobile notifications.

- **Multi-Channel Sales Integration:** Include sales data from other platforms (e.g., Swiggy, Zomato, Amazon) for a unified retail performance view.

- **Customer Segmentation Analysis:** Implement RFM (Recency, Frequency, Monetary) and cohort analysis for deeper understanding of customer behaviour and loyalty.

- **Integration with Power Automate:** Automate tasks like sending weekly performance summaries or triggering workflows based on KPI thresholds.

- **Feedback Loop for Continuous Improvement:** Allow users to submit feedback on dashboard usability or data quality to enable iterative enhancements.

These proposed enhancements aim to evolve the Blinkit Dashboard into a more intelligent, predictive, and business-aligned platform, helping stakeholders make faster, data-driven decisions. As data ecosystems grow, the dashboard can scale to deliver even more strategic insights across the organization.

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