ASM1 BPS

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P1 Discuss how data and information support business processes and the value they have for organisations.

DATA

In today's digital age, data and information have become invaluable assets for organizations. Collecting, analyzing and using data effectively can bring great benefits to business processes, thereby enhancing the value and competitiveness of the organization. This article will discuss how data and information support business processes and their value to organizations.

How Data and Information Support Business Processes

Enhanced Decision-Making
- Data provides a factual basis for decision-making.
- Example: Sales data helps management identify which products are selling well and which need new marketing strategies.

Enhanced Decision-Making

Increased Operational Efficiency
- Optimize processes through data-driven analysis.
- Example: Production data helps streamline manufacturing processes, reduce waste, and improve productivity.

Improved Customer Experience
- Personalize services and products based on customer data.
- Example: Amazon uses browsing and purchase data to recommend relevant products to customers.

Risk Management
- Identify and mitigate risks through data analysis.
- Example: Banks use data analytics to detect fraudulent transactions and prevent them in real-time.

Strategic Planning
- Develop long-term plans based on comprehensive data analysis.
- Example: Market data helps businesses shape product development strategies and expand into new markets.

The Value of Data and Information to Organizations

Competitive Advantage
- Gain insights that competitors may not have.
- Example: Google uses search data to develop new products and improve advertising.

Cost Savings
- Reduce operational costs through data-driven efficiency.
- Example: Walmart uses data to optimize its supply chain and reduce inventory costs.

Revenue Growth
- Identify new revenue streams and enhance existing ones.
- Example: Netflix uses user data to develop relevant content and increase subscriptions.

Innovation
- Drive product and service innovation based on data insights.
- Example: Tesla uses data from its cars to improve software and vehicle features.

Compliance and Reporting
- Ensure regulatory compliance through accurate data tracking and reporting.
- Example: Financial institutions use data to comply with government regulations and provide transparent financial reports.

Practical examples

Amazon and Google
- Use data to personalize customer experiences.
- Example: Search and purchase data helps recommend relevant products to customers.
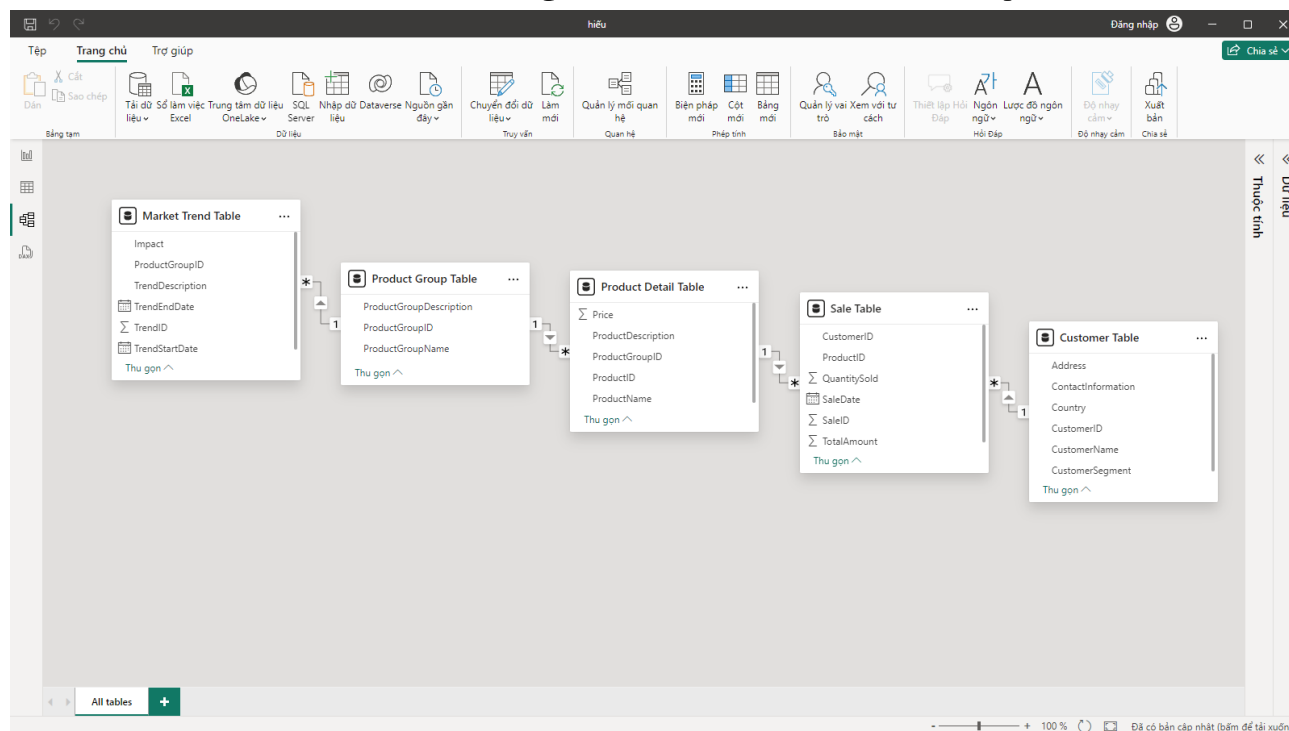
Supply Chain Management and Demand Forecasting
- Optimize supply chain management and demand forecasting.
- Example: Walmart uses data to predict demand and manage inventory more efficiently.

Power BI Project Description

Project: Market Trend Analysis

- Market Trend Dashboard: Understand and predict market trends.
- Product and Product Group Details Dashboard: Track and analyze the performance of each product and product group.
- Sales Dashboard: Monitor sales revenue and the number of products sold.
- Customer Dashboard: Provide detailed information to better understand customers.
- Relationship Analysis: Create detailed reports and analysis to optimize marketing and sales strategies.
- Evaluate the Impact of Market Trends: Improve products and adjust business strategies.

Statistics from Power BI Project
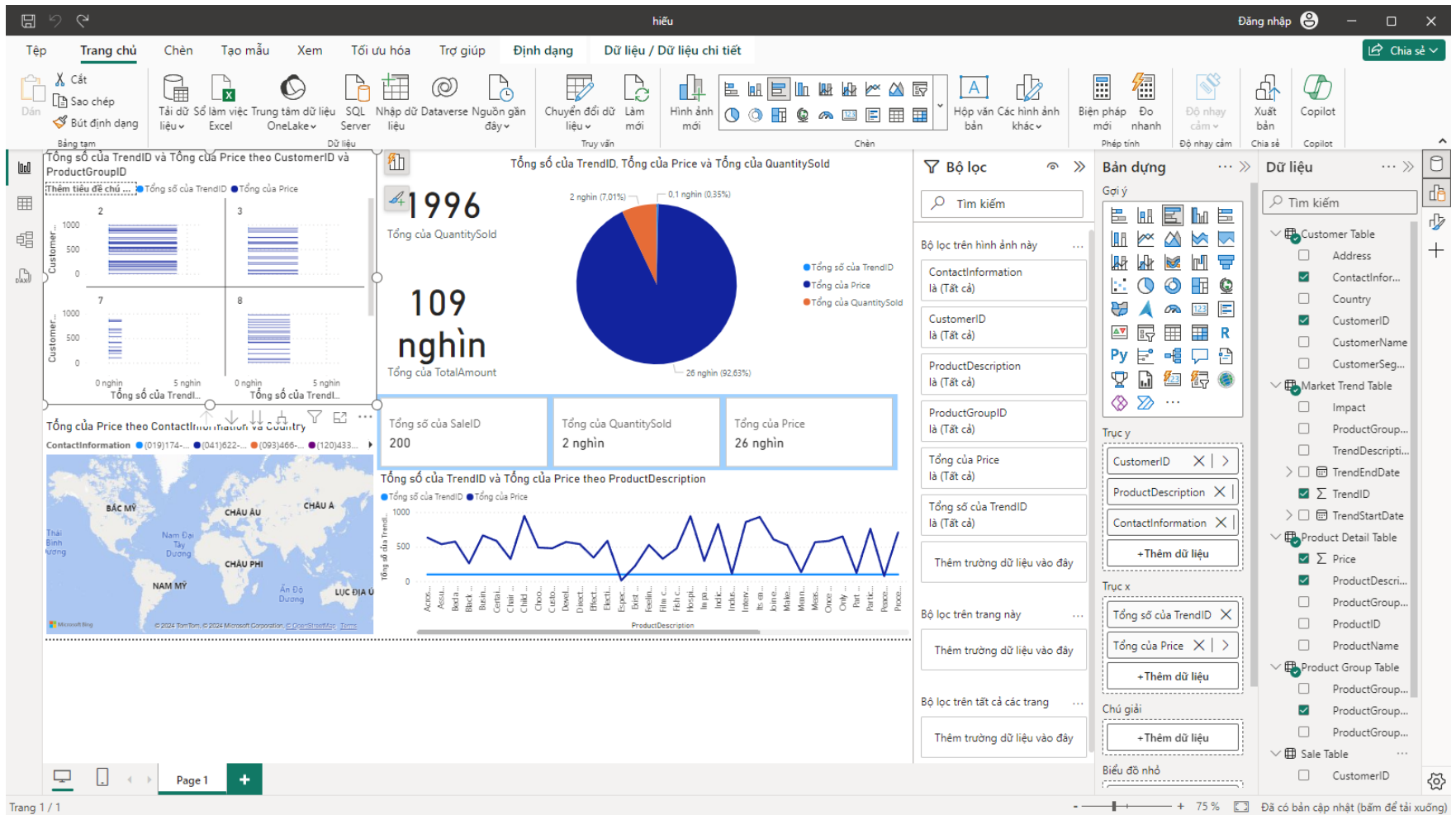
QuantitySold: Total products sold: 1996.
TotalAmount: Total revenue: 109 thousand.

SaleID: Total sales IDs: 200.
Price: Total value: 26 thousand.

P2 Discuss how data is generated and the tools used to manipulate it to form meaningful data to support business operations.

How Data is Generated

Customer Interactions
- Generated through sales transactions, customer service interactions, and feedback.
- Examples: Point-of-sale data, call center logs, online reviews.

Operational Processes
- Produced from internal business operations.
- Examples: Inventory levels, production metrics, supply chain data.

Market Research
- Collected through surveys, focus groups, and competitive analysis.
- Examples: Consumer surveys, market trend analysis, competitor benchmarking.

Digital and IoT Devices
- Data from digital platforms and connected devices.
- Examples: Website analytics, social media interactions, IoT sensor data.

Tools for Data Manipulation

Databases

- SQL Databases: For structured data manipulation.

- Example: MySQL, PostgreSQL.

- NoSQL Databases: For unstructured data handling.

- Example: MongoDB, Cassandra.

Data Analytics Platforms

- Tools for analyzing and visualizing data.
- Tableau: For creating interactive data visualizations.
- Power BI: Microsoft's tool for data analysis and reporting.

Machine Learning and AI Tools

- Tools for advanced data analysis and predictive modeling.
- TensorFlow: Open-source platform for machine learning.
- PyTorch: Deep learning framework for neural networks.

Impact and Value of Data in Real-World Business Processes

Client Project A: Supply Chain Optimization
Objective: Improve efficiency and reduce costs.
Solution: Implement predictive analytics for demand forecasting.
Outcome: Achieved a 20% reduction in operational costs.

Client Project B: Enhanced Customer Targeting
Objective: Increase sales and customer engagement.
Solution: Utilize data-driven marketing strategies.
Outcome: Achieved a 15% increase in sales through targeted advertising.

Overview of Human- and Machine-Generated Data Mechanisms and Tools

Human-Generated Data

- Sources: Customer feedback, surveys, manual data entries.

- Tools:

CRM Systems: For managing customer relationships (e.g., Salesforce).

Survey Tools: For collecting customer feedback (e.g., SurveyMonkey).

Machine-Generated Data

- Sources: Sensors, automated logs, transaction records.

- Tools:

IoT Platforms: For managing sensor data (e.g., AWS IoT).

Log Management Tools: For analyzing automated logs (e.g., Splunk).

Data Manipulation Mechanisms

- Data Mining: Extracting patterns from large datasets.

Tools: Hadoop, Spark.

- Data Warehousing: Storing large volumes of data for analysis.

Tools: Amazon Redshift, Google BigQuery.

- Real-Time Data Processing: Analyzing data as it is generated.

Tools: Apache Kafka, Apache Storm.

Conclusion

Using data and information to support business processes brings great value, helping to optimize operations and improve forecasting and strategic decision-making. Tools such as database management systems, business reporting systems, and data analytics platforms enable efficient data collection, storage, processing, and analysis, improving business performance and provide accurate information for decision making. This makes an important contribution to the success and sustainable development of the business.

Thanks For Watching !