

ASM1 - Business Process Support

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

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Data and information play a crucial role in supporting the business processes of an organization and providing value. Here are several ways in which data and information support business processes and deliver value to an organization:

1. Data-driven decision-making: Data and information provide the foundation for organizations to make strategic and tactical decisions. By analyzing data, organizations can identify market trends, customer needs, and new opportunities. This helps organizations make informed decisions to enhance performance and optimize business operations.

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

2. Operational process optimization: Data and information support organizations in optimizing operational processes. By monitoring and analyzing data, organizations can pinpoint areas needing improvement, understand efficiency and resource consumption, and implement measures to enhance effectiveness and reduce waste.

3. Enhancing customer experience: Data and information help organizations gain deeper insights into their customers. Through gathering information on customer behavior, preferences, and feedback, organizations can develop tailored marketing strategies and customized services to enhance the customer experience. This helps build trust, foster customer loyalty, and create a competitive advantage.

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4. Supply chain management: Data and information support effective supply chain management within organizations. By sharing information on schedules, inventory storage, quantities, and shipping details, organizations can optimize order management, minimize waiting times, and enhance responsiveness to customer demands.

In summary, data and information play a critical role in supporting business processes and delivering value to organizations by providing the necessary insights to make strategic decisions, optimize operations, and improve customer experience.

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



01

Generating Data:

- **Transactional Data:** Organizations produce large volumes of transactional data through business activities such as sales, purchasing, and financial transactions. This data includes customer information, product details, quantities, prices, and transaction times.
- **Operational Data:** Organizations collect operational data from internal systems and devices, including production performance metrics, inventory levels, machine data, and sensor readings. This data provides insights into operational efficiency and resource utilization.



01

Generating Data:

- Customer Data: Organizations gather customer data through interactions such as website visits, social media interactions, surveys, and feedback. This data includes customer demographics, preferences, behavioral patterns, and interactions.

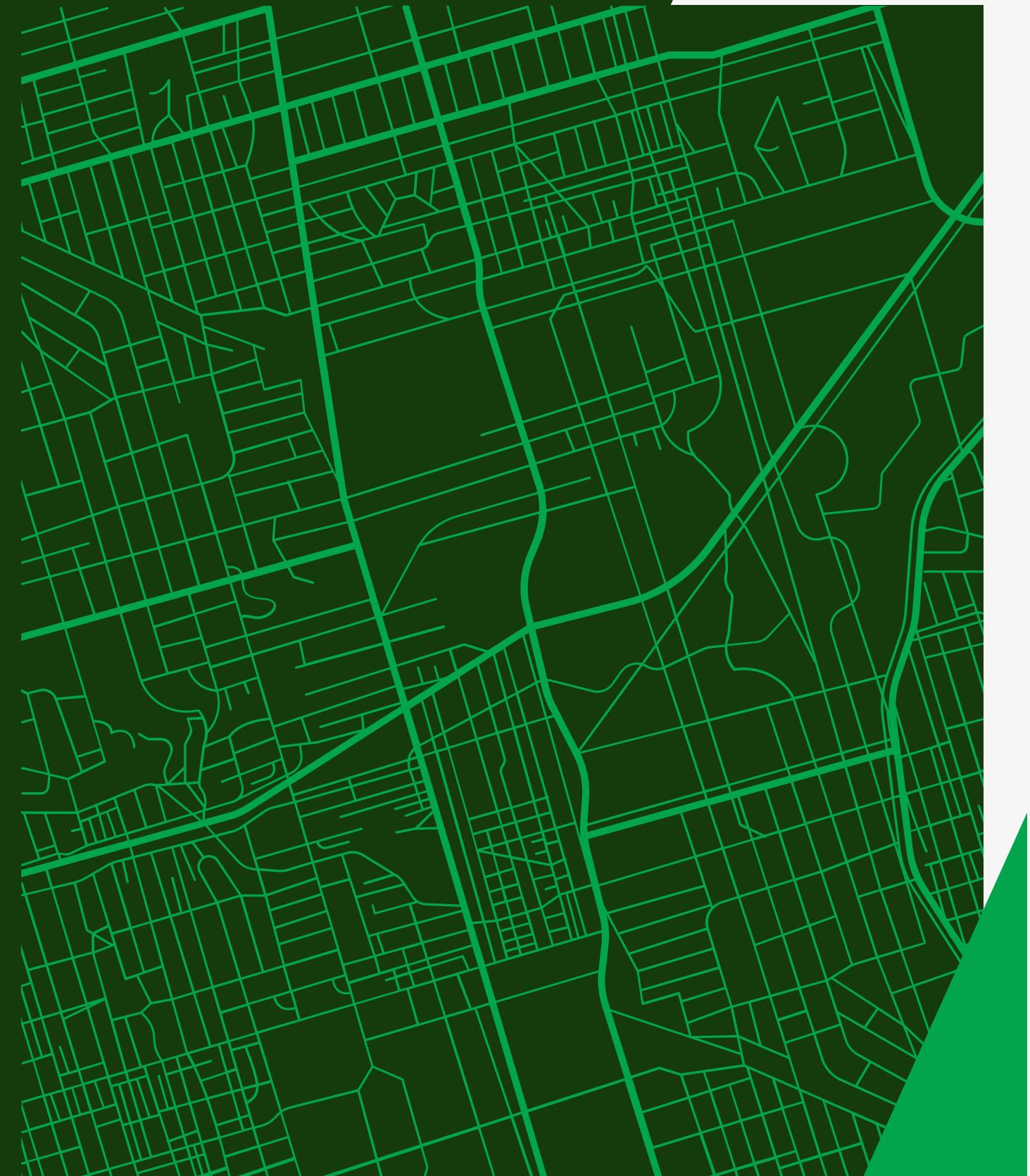
These types of data are critical for organizations to analyze and derive insights from, enabling them to make informed decisions, optimize processes, and enhance customer experiences. Tools used for data processing and generation may include data analytics platforms, customer relationship management (CRM) systems, IoT sensors, and enterprise resource planning (ERP) software. These tools help organizations manage, analyze, and effectively utilize data to support their business goals and improve overall performance.



02

Using Data

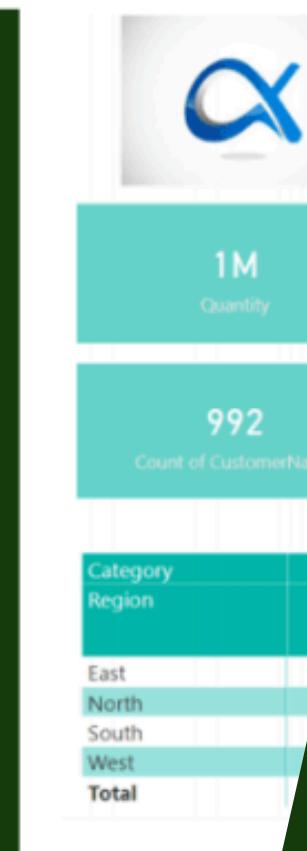
- Decision-making: Organizations use data to support strategic and tactical decision-making. Data helps identify market trends, customer preferences, and demand patterns, thereby optimizing pricing, developing new products, and efficiently allocating resources.
- Performance Monitoring: Data is utilized to monitor and evaluate key performance indicators (KPIs) across various business functions. This helps organizations track progress, identify areas for improvement, and measure the effectiveness of strategies and operations.



02

Using Data

- Predictive Analysis: By using historical data and advanced predictive analytics techniques, organizations can build predictive models to forecast future trends, predict demand, and optimize inventory levels. This aids in proactive resource planning and allocation.
- Personalization and Customer Experience: Data-driven insights enable organizations to personalize applications, customize marketing campaigns, and deliver personalized customer experiences. By analyzing customer data, organizations can understand individual preferences, segment customers, and provide targeted recommendations or promotions.



03

Here are (Tools for Business Intelligence)

Power BI

Power BI is a data analysis and visualization tool from Microsoft. It allows users to connect to various data sources, create reports and dashboards, and share them with others within their organization.

Here are some key features of Power BI:

1. Connect to Multiple Data Sources: Power BI supports connections to hundreds of different data sources, including SQL databases, Excel files, cloud services like Azure, and more.
2. Data Transformation and Cleaning: With Power Query, users can easily transform, clean, and prepare data before analysis.

3. Create Reports and Dashboards: Power BI provides powerful data visualization tools, allowing users to create interactive reports and visually appealing dashboards.

4. DAX (Data Analysis Expressions): DAX is a powerful formula language used in Power BI to perform complex calculations on data.



5. Sharing and Collaboration: Users can easily share their reports and dashboards with others in their organization through Power BI Service.

6. Integration with Other Microsoft Tools: Power BI integrates well with other Microsoft tools such as Excel, SharePoint, and Teams, enabling users to maximize their data utilization.

- ❖ M1 Assess the value of data and information to individuals and organisations in relation to real-world business processes.

I have successfully utilized data and information to enhance supply chain management efficiency and optimize business processes. By analyzing historical sales data, market trends, and customer preferences, I accurately forecast product demand, thereby efficiently adjusting production levels and inventory management. This not only helps me minimize inventory carrying costs but also optimizes resource utilization and reduces risks associated with stockouts or overstocking.

Furthermore, leveraging data has enabled me to improve customer satisfaction by ensuring timely product availability and offering personalized services. I have implemented marketing strategies and product development based on data analysis, enhancing the overall shopping experience and strengthening customer relationships.

In conclusion, my use of data and information in business processes has not only brought about positive changes but also solidified my competitive position in the consumer electronics industry. Implementing these data-driven strategies has demonstrated long-term value and represents a significant step towards sustaining and expanding my global market presence.





Overview of Mechanisms and Tools for Human and Machine Data Generation

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Tools for Processing and Creating Meaningful Data

1. Data Analytics Platforms: Tools like Power BI, Tableau, and Google Data Studio allow organizations to visualize and analyze data from various sources, helping to uncover insights and trends that drive decision-making.
2. Business Intelligence (BI) Tools: BI tools, such as Microsoft Power BI and IBM Cognos, help in aggregating, analyzing, and visualizing data, enabling organizations to make informed strategic and operational decisions.
3. Data Integration Tools: Tools like Apache Nifi, Talend, and Informatica facilitate the integration of data from multiple sources, ensuring that data is consolidated and ready for analysis.

Tools for Processing and Creating Meaningful Data

4. Data Cleaning and Preparation Tools: Tools such as Trifacta, OpenRefine, and Alteryx assist in cleaning and preparing data for analysis by identifying and rectifying errors, inconsistencies, and gaps.
5. Machine Learning and AI Platforms: Platforms like TensorFlow, Microsoft Azure ML, and IBM Watson provide the necessary infrastructure to build and deploy machine learning models that can analyze data and generate predictive insights.
6. Database Management Systems (DBMS): Systems like SQL Server, MySQL, and MongoDB manage and store data efficiently, providing the backbone for data processing and retrieval.
7. ETL (Extract, Transform, Load) Tools: Tools like Apache Spark, Apache Kafka, and Informatica PowerCenter extract data from various sources, transform it into a usable format, and load it into a target system for analysis.

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Tools for Processing and Creating Meaningful Data

8. Data Warehousing Solutions: Solutions like Amazon Redshift, Google BigQuery, and Snowflake store large volumes of data and provide fast query performance for analytical processing.
9. Cloud Data Platforms: Platforms such as Microsoft Azure, Google Cloud Platform, and Amazon Web Services offer scalable solutions for data storage, processing, and analysis in the cloud.
10. Data Governance Tools: Tools like Collibra and Informatica Data Quality ensure that data management practices comply with regulations and maintain data quality and security.

02

How Data and Information Support Business Processes and Their Value to Organizations:

Data and information play a crucial role in supporting business processes within an organization. They provide valuable insights and enable informed decision-making, leading to improved efficiency, performance, and overall business operations. Here are some key points to consider:



1. Data-Driven Decision Making: Data and information provide the necessary foundation for strategic and operational decision-making within an organization. By leveraging data analytics and business intelligence tools, organizations can analyze trends, patterns, and customer behavior. This helps in identifying new opportunities, optimizing processes, and adapting strategies based on market demands.

2. Enhancing Operational Efficiency: Data and information help organizations refine their operations and identify areas for improvement. By monitoring and analyzing data related to production, supply chain, and resource utilization, organizations can pinpoint bottlenecks, reduce waste, and optimize processes. This leads to cost savings, increased productivity, and improved overall performance.

3. Improving Customer Experience: Data and information enable organizations to better understand their customers and tailor products or services accordingly. By collecting and analyzing customer data, organizations can identify preferences, purchase history, and customer satisfaction levels. This allows for personalized offerings, targeted marketing campaigns, and enhanced customer experiences, resulting in increased customer loyalty and retention.
4. Proactive Risk Management: Data and information help organizations proactively identify and mitigate risks. By monitoring key performance indicators (KPIs) and analyzing historical data, organizations can detect potential issues, identify emerging trends, and implement preventive measures. This minimizes disruptions, optimizes resource allocation, and ensures business continuity.

04

Use the Power BI tool to create a Dashboard of evaluation charts and decision support for managers.

This is a project where I use Power BI to create a Dashboard of metrics and decision support charts for me.



From the dashboard above, we can see an overview of the sales business from products to prices and customer data so we can manage it and make decisions about business issues.

Chart 1: Map of Customers by Country and CustomerID

Detailed Analysis:

- This map displays customers from various countries, using different colors to represent different CustomerIDs.
- The United States (USA) has the most customers, as indicated by the large number of dark blue dots on the map.
- Other countries such as the UK, Spain, South Korea, and South Africa also have a significant number of customers.

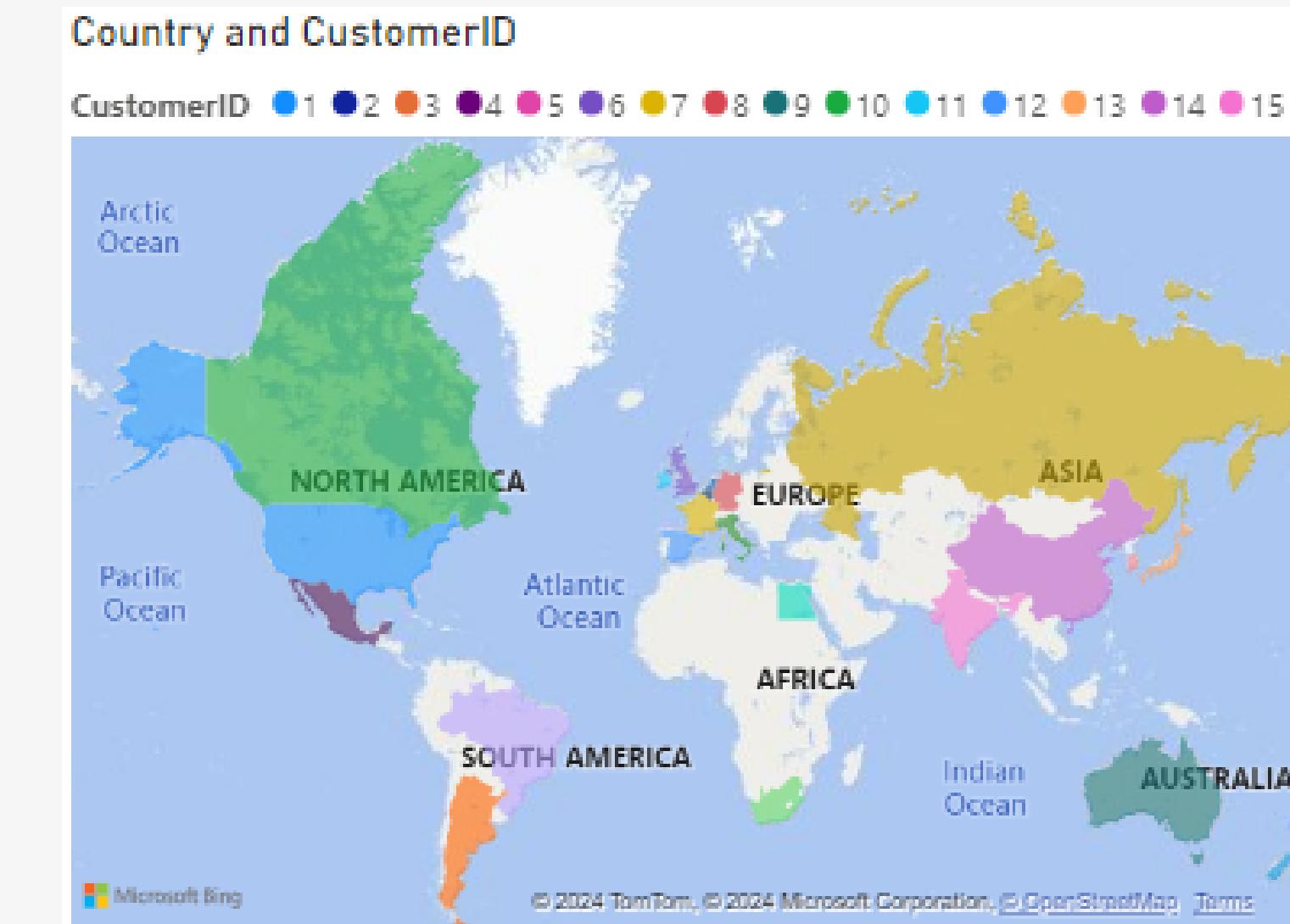


Chart 2: Table of Countries and Quantity:

- This table lists the countries along with the total quantity of products purchased by customers from each country.
- The USA leads with the highest quantity (409), followed by the UK (28), Spain (21), South Korea (20), and other countries.

Country	Sum of Quantity
USA	20
UK	20
Spain	28
South Korea	21
South Africa	17
Russia	27
New Zealand	3
Netherlands	19
Mexico	18
Japan	22
Italy	15
Ireland	16
India	5
Germany	23
France	27
Egypt	21
Total	409

Chart 3: Sum of Quantity by Product Category

From the dashboard above, we can see an overview of the sales business from products to prices and customer data so we can manage it and make decisions about business issues.

Detailed Analysis:

- "Computers" is the best-selling category with 76 products, making up 18.58% of the total quantity.
- Categories like "Home Security" and "Outdoor Play" are also popular, with 50 and 46 products sold, respectively.
- Other categories such as "Wearables," "Furniture," "Mobile Accessories," and "Electronics" have steady sales but are less than the top-selling categories.

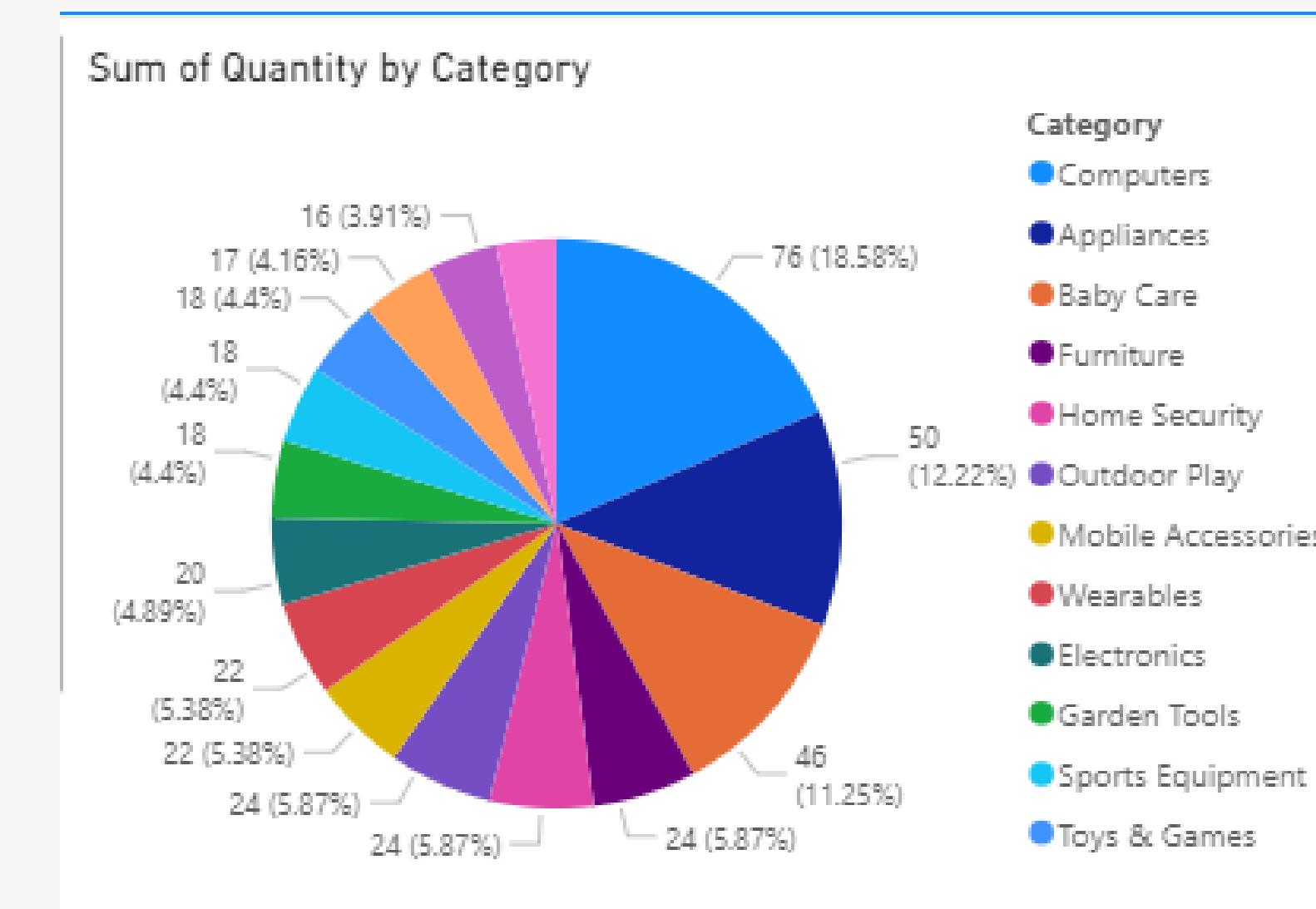


Chart 4: Bar Chart - Sum of Revenue by Product Name:

- This chart displays revenue from different products.
- Products like "Dining Table," "Smart Lock," and "Portable Charger" contribute the most to revenue.
- Products like "Baby Monitor" and "Building Blocks" have lower revenue contributions.

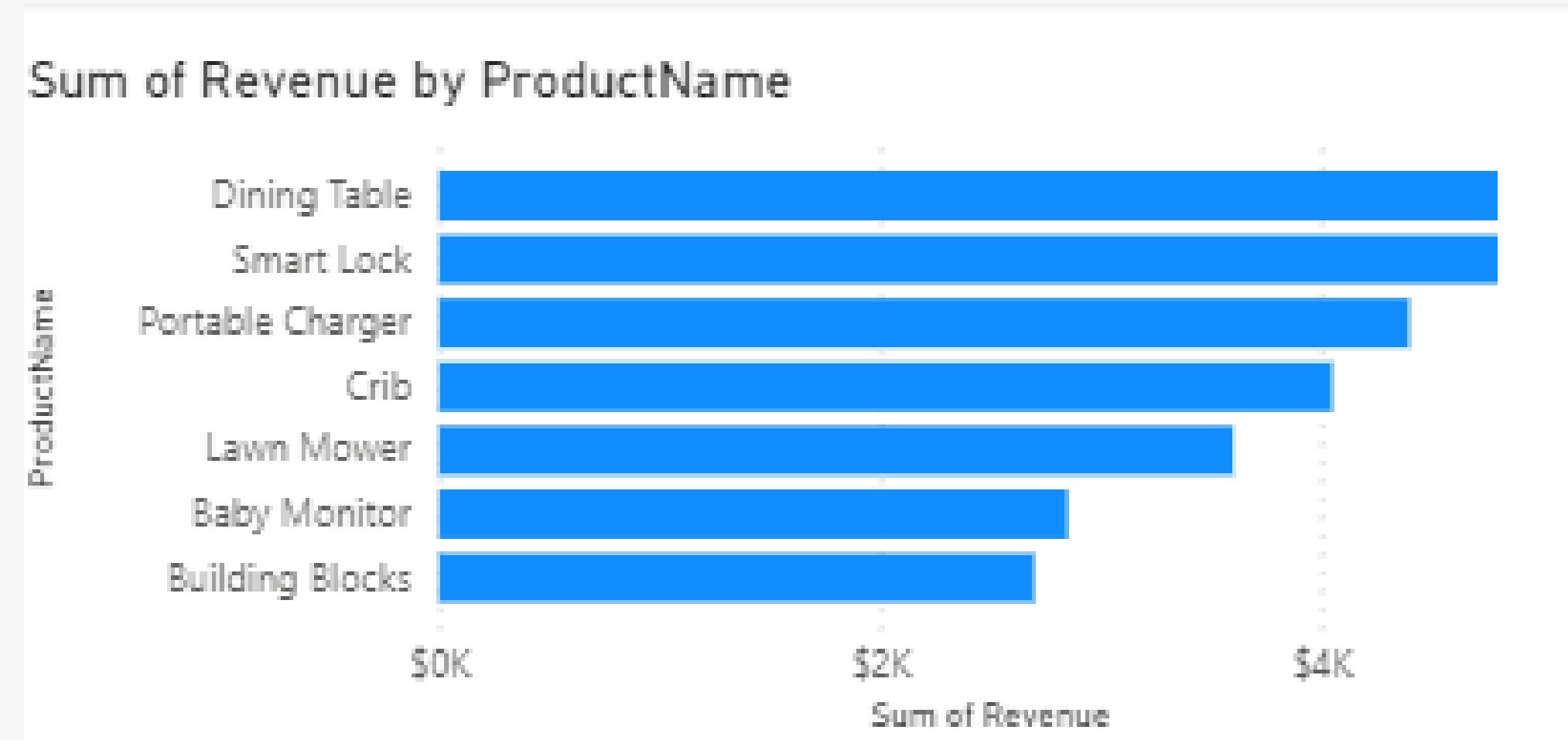


Chart 5: Line Chart - Sum of Duration by Access Time:

- This chart shows the access time to the sales management system throughout a day.
- There are peaks in access time around 6 AM and 2 PM, indicating high usage periods of the system.



Summary and Observations

- The US is the largest market, with the highest purchase volume, which could indicate the country's economic prosperity or high usage of technology and household products.
- Product categories like Computers, Home Security, and Outdoor Play are the most popular, suggesting current consumer trends focus on technology and home security.
- System access times show peaks in the morning and afternoon, likely corresponding to the main working hours of the day.

Thanks you