Contribution of Data and Information to Business Strategy and Operations

In today's rapidly evolving business landscape, data and information have become indispensable assets, driving strategic decision-making and operational efficiency. This presentation explores the multifaceted role of data in shaping business strategy, optimizing operations, and enhancing customer experiences. We will delve into the key areas where data empowers organizations to gain a competitive edge and achieve sustainable growth.

Role of Data in Strategic Decision Making

1 **Market Trend Analysis**

Data analytics helps identify emerging market trends, allowing businesses to anticipate shifts in consumer preferences, competitive landscapes, and industry dynamics. This proactive approach enables organizations to adapt strategies, develop new products and services, and capitalize on emerging opportunities.

2 **Customer Needs Identification**

Data provides valuable insights into customer behavior, preferences, and pain points. By analyzing customer data, organizations can gain a deeper understanding of their target audience, segment customers effectively, and tailor products and services to meet specific needs.

3 **Opportunity Recognition**

Data analysis can unveil hidden opportunities that might otherwise go unnoticed. By analyzing market data, customer feedback, and competitor intelligence, businesses can identify new markets, untapped customer segments, or emerging trends that can lead to significant growth.

Optimization of Operational Processes

1 **Process Mapping**

Data helps businesses map their operational processes, identifying bottlenecks, inefficiencies, and areas for improvement. This comprehensive understanding enables organizations to streamline workflows, reduce redundancies, and enhance overall efficiency.

2 **Cost Reduction**

Data analysis can identify cost-saving opportunities across various operational processes. By optimizing inventory management, streamlining logistics, and improving resource allocation, businesses can significantly reduce operational expenses and increase profitability.

3 **Efficiency Enhancement**

Data-driven insights empower organizations to identify opportunities for automating tasks, improving resource allocation, and optimizing workflows. By streamlining processes and automating repetitive tasks, businesses can enhance operational efficiency and productivity.

Enhancing Customer Experience

Customer Segmentation

Data allows businesses to segment customers based on demographics, purchasing behavior, preferences, and other relevant factors. This enables organizations to tailor their marketing messages, product offerings, and customer service interactions to meet the specific needs of different customer groups.

Personalized Recommendations

By analyzing customer data, businesses can provide personalized recommendations for products, services, and content. This personalized approach enhances customer engagement, drives sales, and strengthens customer loyalty by providing relevant and valuable suggestions.

Customer Feedback Analysis

Data analysis can be used to gather and analyze customer feedback, identifying areas for improvement in products, services, and customer support. By addressing customer concerns and implementing positive changes, businesses can enhance customer satisfaction and build stronger relationships.

Supply Chain Management

1 Demand Forecasting

Data analysis helps businesses forecast demand accurately, enabling them to optimize inventory levels, manage production schedules, and ensure timely deliveries. By anticipating demand fluctuations, organizations can reduce stockouts, minimize waste, and improve overall supply chain efficiency.

2 Inventory Optimization

Data-driven insights can help businesses optimize inventory management, ensuring that they have the right amount of inventory on hand to meet customer demand without incurring excessive storage costs or facing stockouts. By analyzing historical sales data and market trends, businesses can develop more accurate inventory forecasting models.

3 Improved Responsiveness

Data enables businesses to track shipments in real-time, monitor supply chain performance, and identify potential disruptions early on. This proactive approach enables organizations to respond quickly to unforeseen challenges, mitigate risks, and ensure uninterrupted supply chains.

Data-Driven Innovation

Research & Development	Data analytics helps organizations identify emerging technologies, market trends, and customer needs, driving innovation in product development, process improvement, and service delivery.
New Product Development	Data analysis enables businesses to understand customer preferences, market trends, and competitive landscapes, informing the development of new products and services that meet unmet needs.
Business Model Innovation	Data can help businesses identify new business models, explore alternative revenue streams, and adapt to changing market conditions, driving innovation and long-term sustainability.

Data-Driven Decision Making

Unlocking business insights and making data-driven decisions is essential for success in today's competitive landscape. By harnessing the power of data, organizations can gain a comprehensive understanding of their operations, customer preferences, and market trends, enabling them to make informed decisions and achieve optimal outcomes.

How Data is Generated

1 Transactional Data

Transactional data is generated from business transactions, such as sales, purchases, and payments. This data provides insights into customer behavior, product performance, and revenue streams.
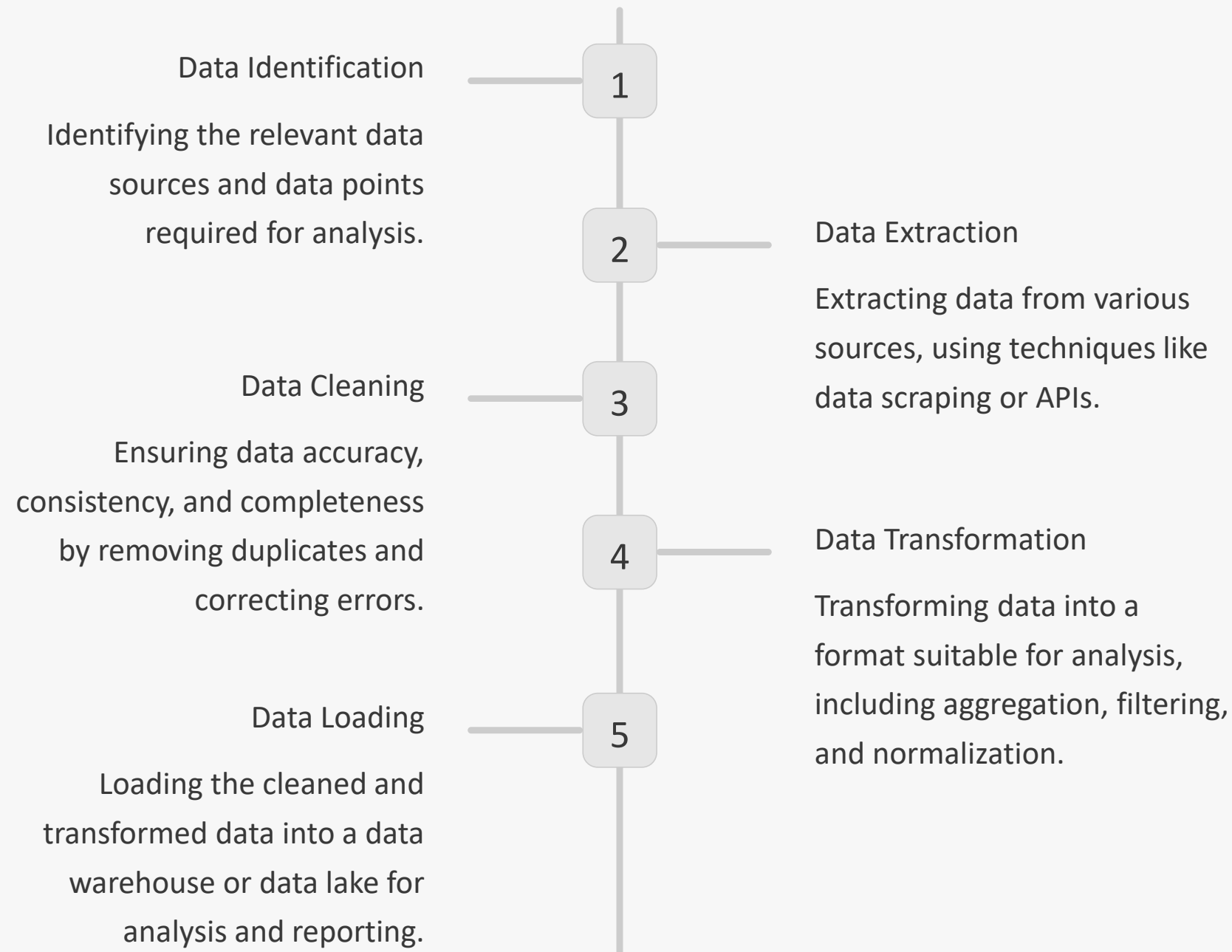
2 Operational Data

Operational data is generated from the daily operations of a business, such as production processes, inventory levels, and employee activities. This data provides insights into operational efficiency, resource utilization, and process optimization.

3 Customer Data

Customer data is generated from interactions with customers, such as website visits, email subscriptions, and customer service inquiries. This data provides insights into customer preferences, demographics, and purchase history.

4 Data Sources

Data can be collected from various sources, including internal systems, external databases, social media platforms, and customer surveys.

Data Collection Process

1 Data Identification

Identifying the relevant data sources and data points required for analysis.

2 Data Extraction

Extracting data from various sources, using techniques like data scraping or APIs.

3 Data Cleaning

Ensuring data accuracy, consistency, and completeness by removing duplicates and correcting errors.

4 Data Transformation

Transforming data into a format suitable for analysis, including aggregation, filtering, and normalization.

5 Data Loading

Loading the cleaned and transformed data into a data warehouse or data lake for analysis and reporting.

Tools for Data Processing

Power BI

Power BI is a powerful business intelligence tool developed by Microsoft. It provides a comprehensive suite of features for data visualization, analysis, and reporting.

1. Visualization
2. DAX
3. Power Query

Applications

Power BI is suitable for organizations of all sizes, offering customizable solutions to meet specific business needs.

1. Small Enterprises
2. Medium Enterprises
3. Large Enterprises

Tools for Data Processing

Tableau

Tableau is a leading data visualization and analytics platform known for its user-friendly interface and powerful data exploration capabilities.

1. Visualization

2. Tableau Prep

3. Advanced Analytics

Applications

Tableau is widely adopted by organizations seeking a comprehensive data analytics solution, particularly those not reliant on the Microsoft ecosystem.

The reason I chose to use Power BI

Power BI is a powerful business intelligence platform that helps you to visualize and analyze your data. This presentation will cover the key features and benefits of using Power BI for data analytics and visualization.

Enhancing Data Analytics and Visualization

1 Data-Driven Insights

Power BI empowers you to gain valuable insights from your data and make data-driven decisions.

2 Improved Efficiency

By automating data analysis and reporting, you can free up time for more strategic tasks.

3 Centralized Data Management

Power BI provides a central repository for all your data, making it easier to access and manage.

4 Enhanced Collaboration

Power BI facilitates collaboration by allowing you to share reports and dashboards with stakeholders.

User-Friendly Interface

Intuitive Dashboards

Power BI offers a drag-and-drop interface for creating interactive and insightful dashboards. Users can easily customize dashboards to visualize data in a way that makes sense to them.

Pre-built Templates

With pre-built templates, you can quickly create reports and dashboards without starting from scratch. Templates provide a foundation for creating visually appealing and informative reports.
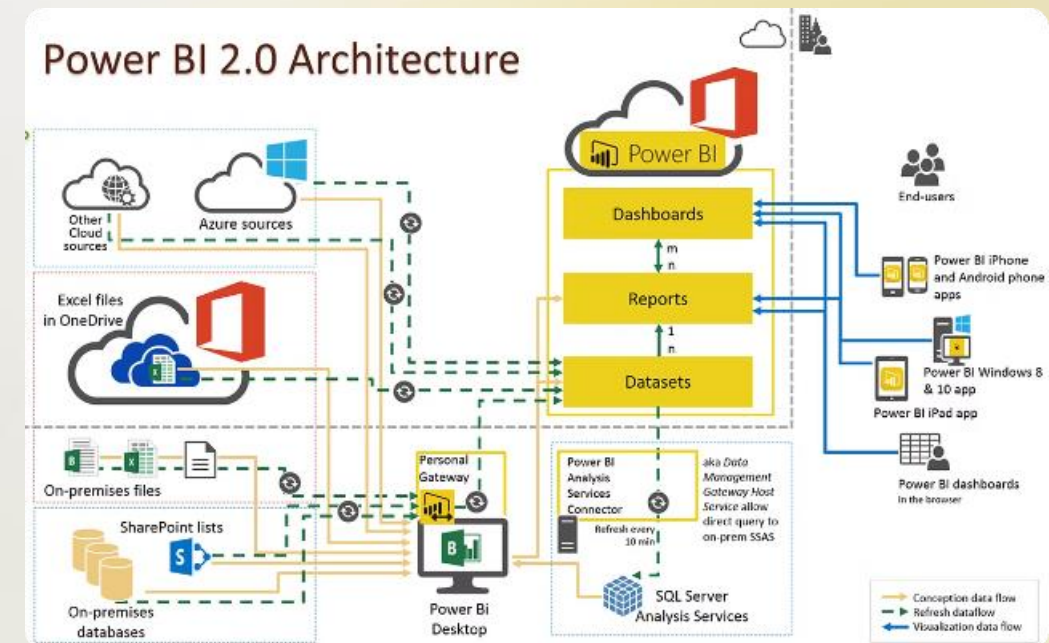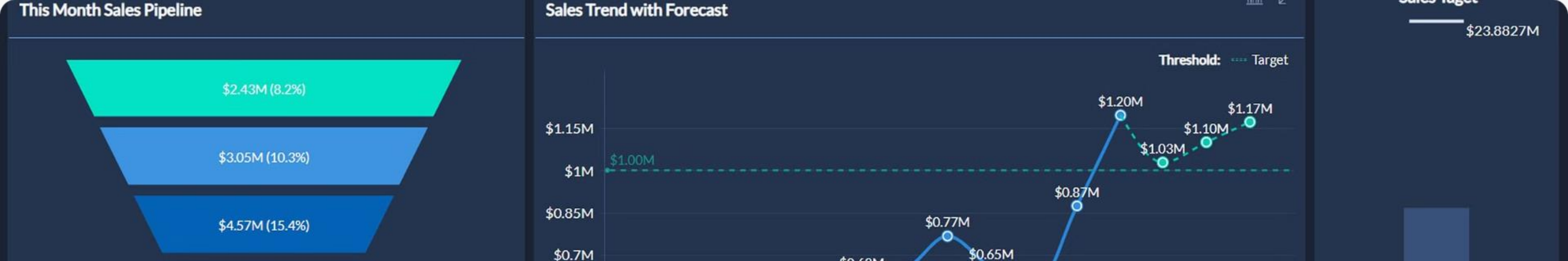
Integration Capabilities

Wide Range of Data Sources

Power BI can connect to a wide range of data sources, including Excel, SQL Server, Azure, Google Analytics, and many more.
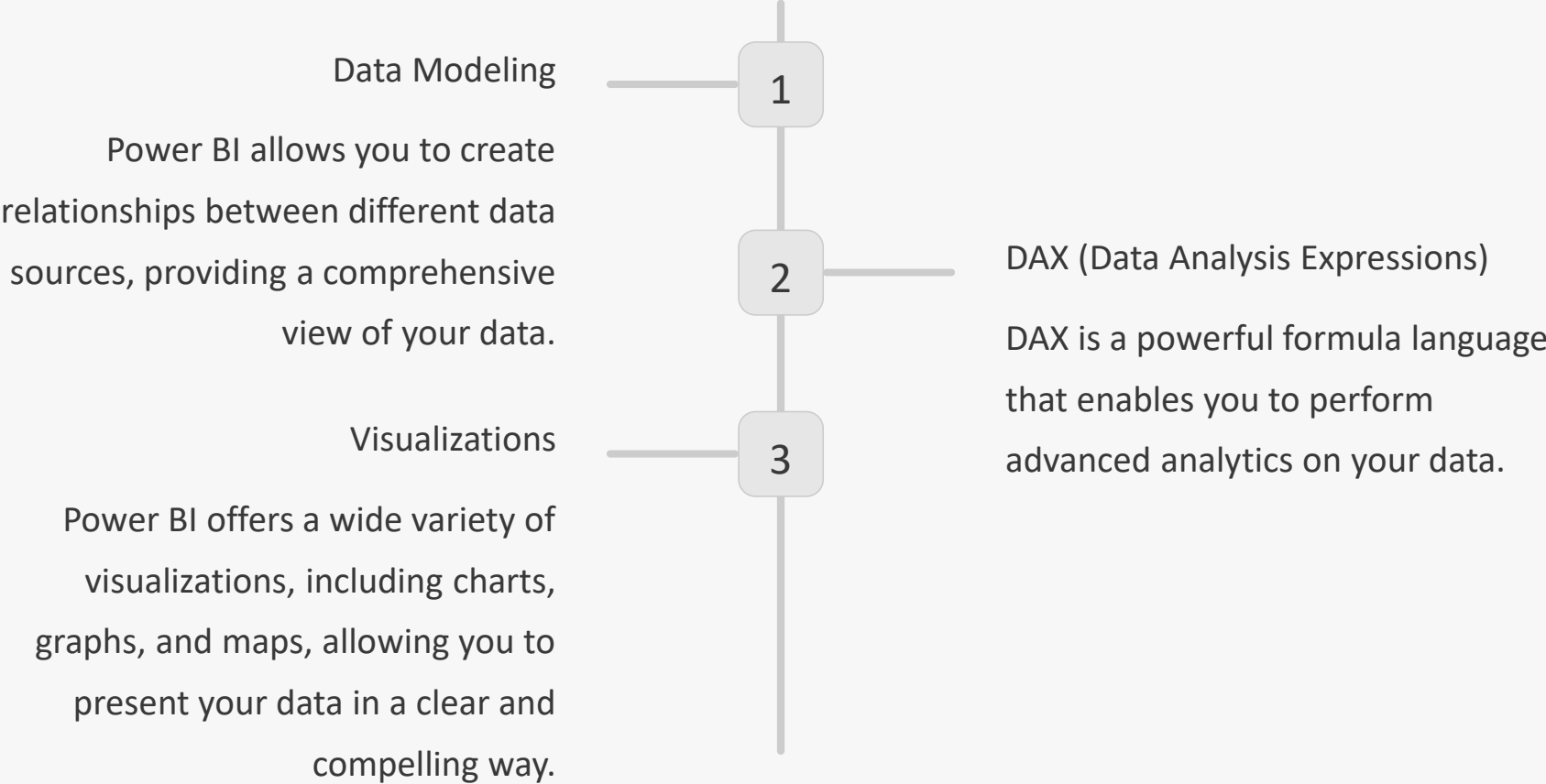
Seamless Integration with Microsoft Products

Power BI integrates seamlessly with other Microsoft products, such as Azure, Office 365, and SharePoint, making it easy to access and analyze data from various sources.

$2.43M (8.2%)

$3.05M (10.3%)

$4.57M (15.4%)

Sales Trend with Forecast

Threshold: ---- Target

$1.20M

$1.17M

$1.10M

$1.15M

$1.03M

$1.00M

$1M

$0.87M

$0.85M

$0.77M

$0.7M

$0.65M

$23.8827M

Powerful Data Analysis Tools

Data Modeling — 1

Power BI allows you to create relationships between different data sources, providing a comprehensive view of your data.

2 — **DAX (Data Analysis Expressions)**

DAX is a powerful formula language that enables you to perform advanced analytics on your data.

Visualizations — 3

Power BI offers a wide variety of visualizations, including charts, graphs, and maps, allowing you to present your data in a clear and compelling way.

Real-Time Data

1

Live Dashboards

Power BI allows you to create live dashboards that update in real-time, providing you with the most up-to-date information.

2

Automatic Data Refresh

You can schedule automatic data refresh, ensuring your dashboards and reports are always up to date.

Collaboration and Sharing

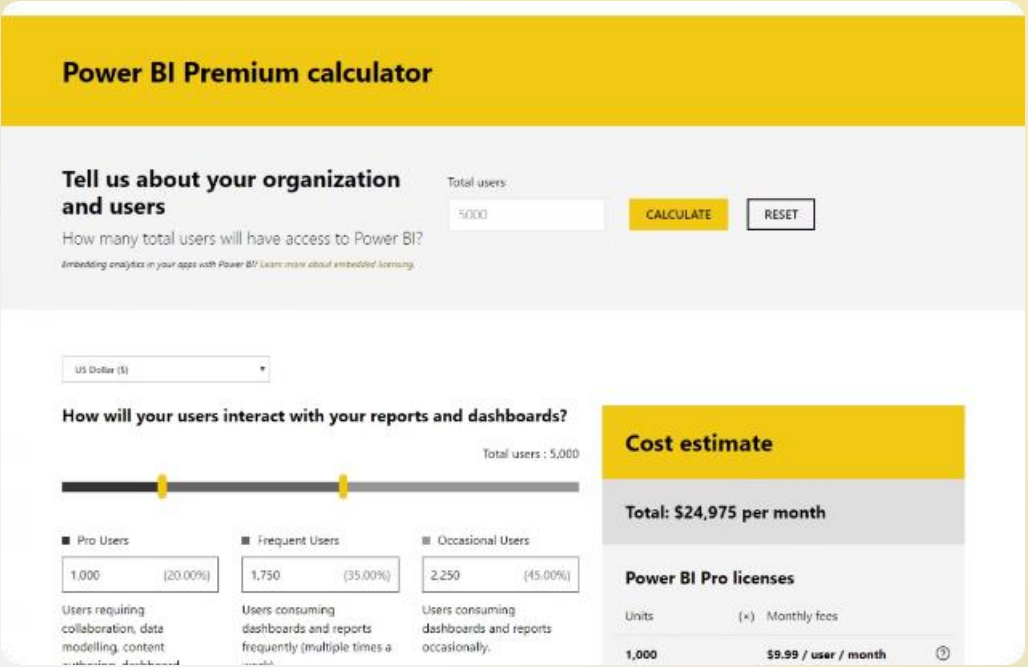| Sharing	Power BI makes it easy to share reports and dashboards with colleagues and stakeholders, promoting collaboration and data transparency.
Collaboration	Power BI facilitates collaboration by allowing users to work together on reports and dashboards, providing a shared understanding of the data.
Mobile Access	Power BI Service allows you to access and interact with data on the go using mobile apps.

Cost-Effective
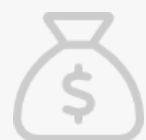
Affordable Pricing

Power BI offers a free version, making it accessible for individuals and small businesses. The Pro version is also reasonably priced.

Scalability

Power BI scales with your business needs, offering enterprise-level features for larger organizations.

Power BI Premium calculator

Tell us about your organization and users
How many total users will have access to Power BI?

Total users

5000

CALCULATE   RESET

Embedding analytics in your apps with Power BI? Learn more about embedded licensing.

US Dollar ($)

How will your users interact with your reports and dashboards?

Total users : 5,000

Cost estimate

Pro Users	Frequent Users	Occasional Users
1.000 (20.00%)	1,750 (35.00%)	2,250 (45.00%)
Users requiring collaboration, data modelling, content authoring, dashboard	Users consuming dashboards and reports frequently (multiple times a week)	Users consuming dashboards and reports occasionally.

Total: $24,975 per month

Power BI Pro licenses

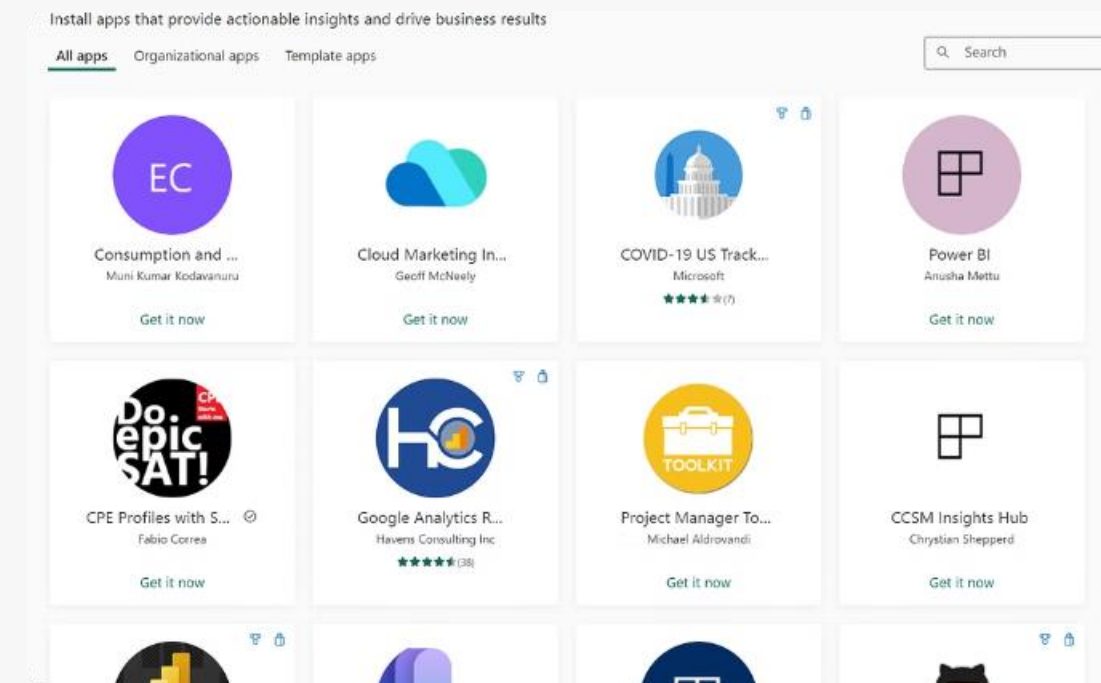| Units	(×) Monthly fees
1,000	$9.99 / user / month

Custom Visualizations

Custom Visuals

Power BI allows you to create custom visuals tailored to your specific business needs, providing a unique way to present data.

Community and Marketplace

A large community of Power BI users has developed a vast library of custom visuals available in the Power BI Marketplace.

Security and Compliance

1 Data Security

Power BI offers advanced security features, including row-level security, ensuring data privacy and integrity.
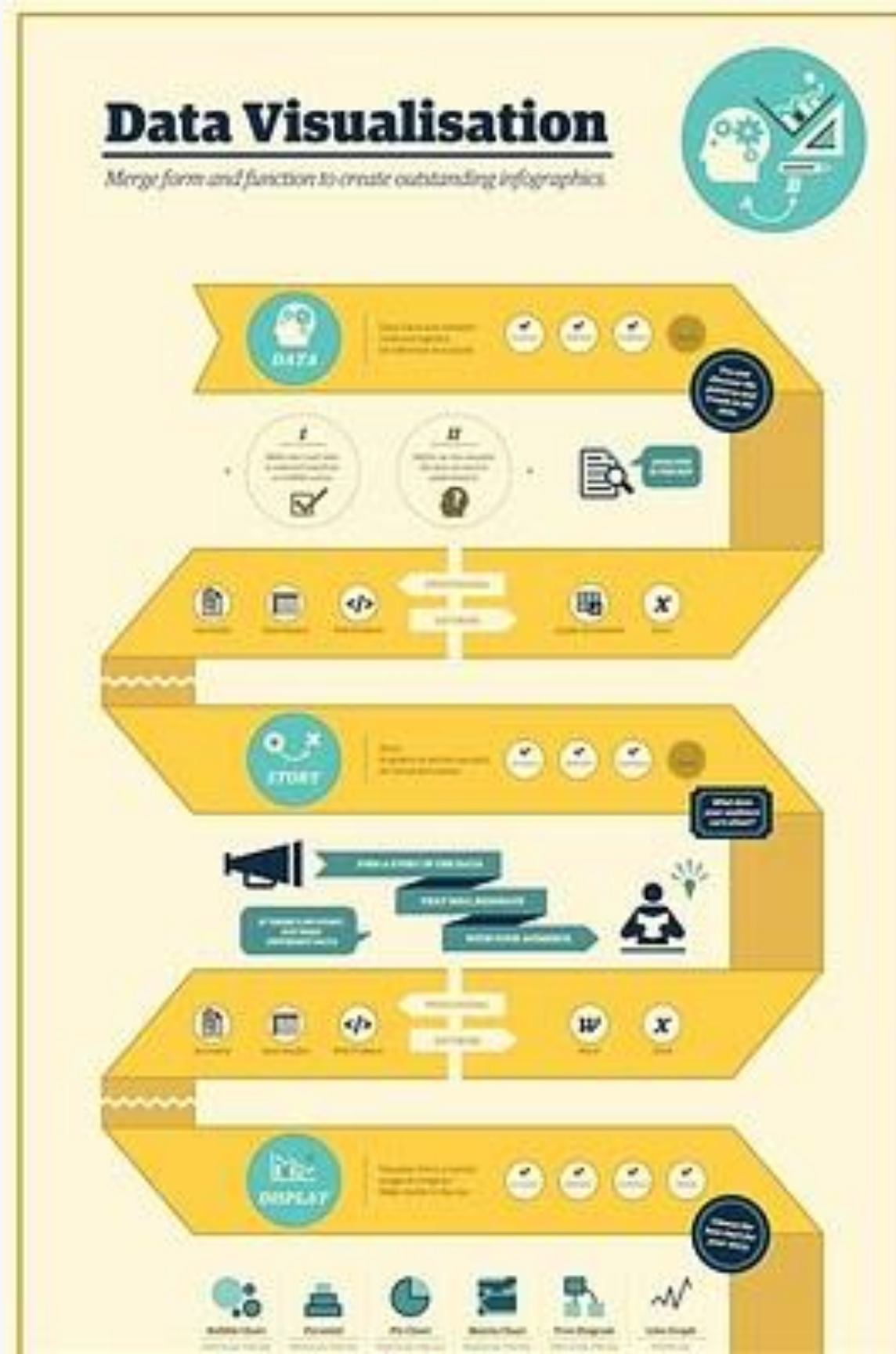
2 Compliance

Power BI meets industry standards and certifications, providing assurance that your data is handled securely and responsibly.

Impact of Data on Real Business Processes

| 1 | 2 | 3 | 4 |

Category-Wise Sales Analysis

Analyzing sales data by product category to identify top-performing categories and optimize inventory management.

Increased Sales Efficiency

Utilizing insights from sales analysis to focus marketing efforts on high-potential customer segments.

Improved Conversion Rates

Understanding customer behavior and preferences to tailor marketing campaigns and improve conversion rates.

Increased Gross Profit

Optimizing pricing strategies and inventory levels based on demand patterns and customer preferences.

The Power of Data in Business

Unlocking insights to drive growth and efficiency

The Role of Data and Information in Business

1   Informed Decision Making

Data supports strategic decisions by providing insights into market trends, customer behaviour, and operational efficiency.

2   Deep Business Understanding

It offers a comprehensive view of business operations, revealing areas for improvement and opportunities for growth.

3   Enhanced Customer Experience

Data helps businesses personalize offerings, streamline processes, and anticipate customer needs for improved satisfaction.

4   Process Optimisation

Data analysis helps identify bottlenecks, inefficiencies, and areas where automation or streamlining can enhance productivity.

Understanding Products and Suppliers

Product Category Analysis

A bar chart visualises the number of products per category. This helps identify popular and less popular categories, guiding product portfolio optimisation.

Example: The "Smart Home" category has the highest number of products, while "Drones" has the lowest number of products.

Value brought: Enhance company reputation in the field of advanced technology, increase customer satisfaction through convenience and energy savings.

Count of ProductName by Category
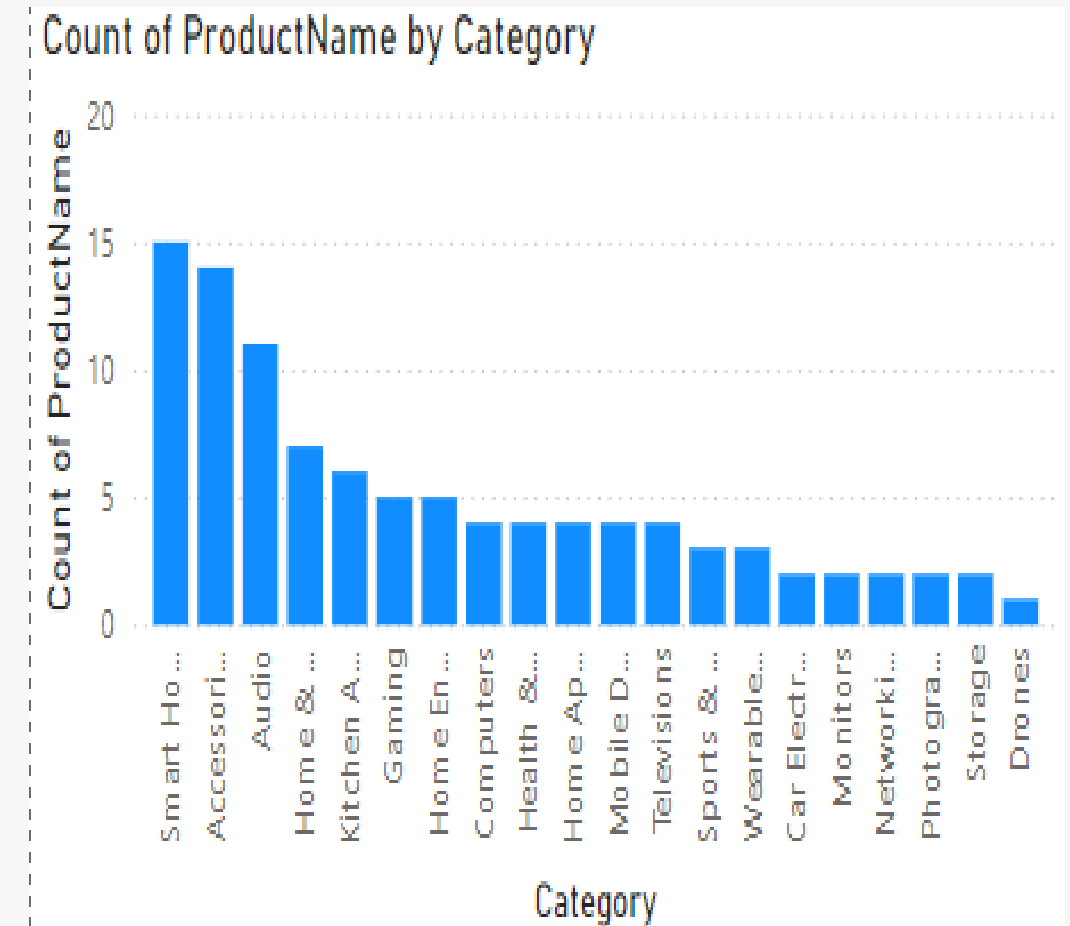
Understanding Products and Suppliers

Supplier Distribution

A pie chart represents the distribution of suppliers across product categories. This highlights the supplier network and potential for strategic partnerships.

Example: Suppliers SoundCorp and GameWorld have the largest number of catalogs, each accounting for about 11% of the total catalog.

Value brought : This supplier likely provides a wide range of products, enhancing the company's portfolio and potentially attracting a broader customer base.


Count of Category by Supplier

Supplier
- SoundCorp
- GameWorld
- SecureHome
- HealthTech
- KeyTech
- HomeConn...
- KitchenPro
- MediaTech
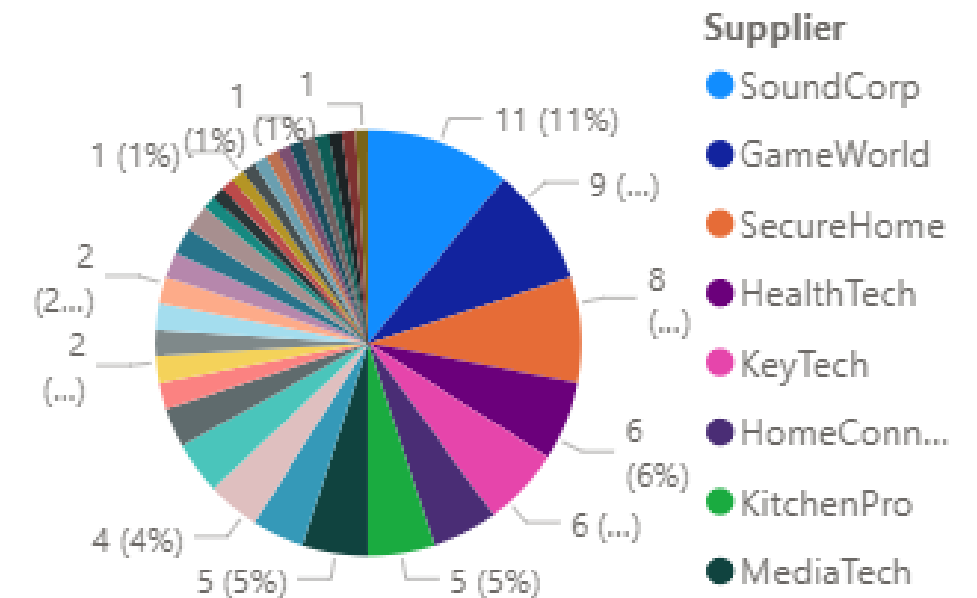
Product Name	Customer Ratings
Electric Scooter	4.90
Gaming Laptop	4.90
Laptop 13"	4.90
Robot Lawn Mower	4.90
Smart Air Conditioner	4.90
Smart Doorbell	4.90
Smart Lawn Sprinkler System	4.90
Smart Mirror	4.90
Smart Scale	4.90
Smartwatch	4.90
Video Doorbell	4.90
Wireless Charging Pad	4.90
Wireless Mouse	4.90
Wireless Router	4.90

Assessing Product Performance

Product Name	Customer Ratings
Product Name A	4.5/5
Product Name B	3.8/5

Sum of Total Transaction Value by Product Name
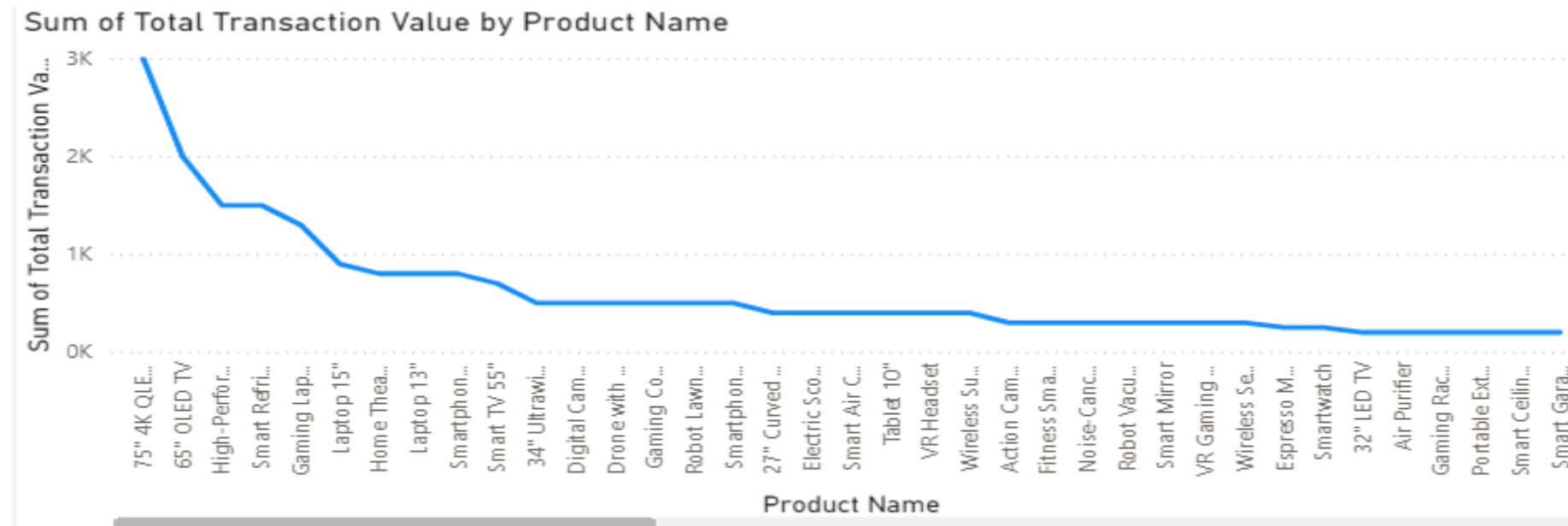
- The line chart shows that 4K QLED TV has the highest total transaction value, around 3,000 currency units.
- Other products such as High Definition TV, Gaming Laptop, and Smart Refrigerator also have significant transaction values, ranging from 1,000 to 2,000 currency units.

Value brought : This product has the highest total transaction value, showing that this is a product of great value and can bring high profits to the company. 4K QLED TV is a premium product, meeting the needs of customers looking for high picture quality and the best viewing experience.

Market Analysis

Distribution of transactions by region

Geographic maps allow businesses to identify potential markets, allocate resources, and plan market expansion strategies.

Data Generation Mechanisms and Tools

1   Data Collection

IoT devices, sensors, and software applications like ERP and CRM systems gather real-time data.
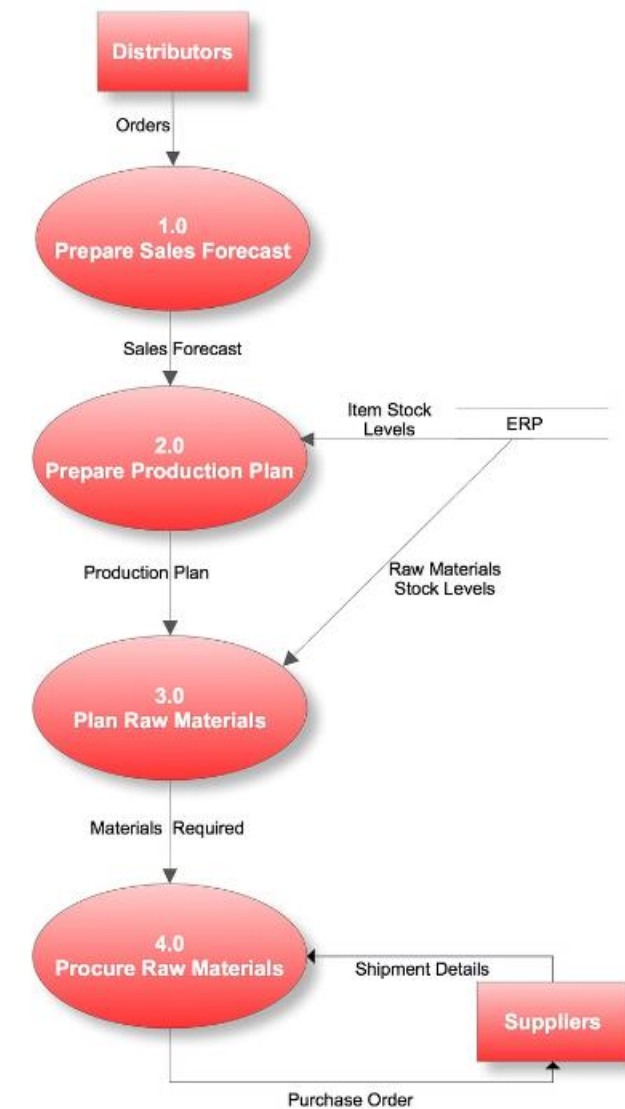
2   Data Processing

Raw data is cleaned, standardized, and transformed for analysis using tools like Power BI, Tableau, and Python.

3   Data Storage and Analysis

Cloud-based databases, AI, and machine learning models are employed for storing, analyzing, and predicting insights from data.

Level-0 DFD

Impact on Real Business Processes

Sales and Marketing

Identify effective sales channels

Target the right customers

Operations

Optimize supply chains and inventory management

Improve production processes

Finance

Predict financial performance

Manage risk and optimize investments

Tools for Meaningful Data Creation

Power BI

Interactive dashboards and reports

Tableau

Visual data exploration and analysis

Google Analytics

Web analytics and website traffic insights

Data-Driven Insights in Action

1 Customer Segmentation

Group customers based on demographics and behavior

2 Targeted Marketing Campaigns

Deliver personalized messages to specific segments

3 Improved Customer Retention

Identify and address customer churn risk

Thank You

Thank you for your time. Feel free to reach out with any questions