Introduction to Power BI

Information Systems Management

- Information can be defined as the result of processing, manipulating, and organizing data so as to add to the knowledge of the recipient.
- Information is the output you get after processing data, which usually consists of dispersed elements. Information is required by individuals and organizations to perform any activity.
- For example, a train passenger requires information such as:
  - Which train will go to the destination?
  - Which is the boarding station?
  - What is the departure time of the train?
  - What is the platform number to board the train?
- Similarly, the train driver requires information such as:
  - What is the final destination of the train?
  - What is the arrival time of the train at the destination?
  - Which track to be used in order to reach the destination?

Information Needs in Business Environment

Similar to the individuals, business organizations also need information to perform various activities.

For example:

- The sales and marketing manager of a retail store needs information such as:
  - Demand of goods in the market
  - Goods in stock
  - Strategies to sell the goods
- The inventory manager of the retail store needs information such as:
  - The current stock situation
  - The rate at which various goods are being sold
  - The time required to order goods from the wholesaler
- The wholesaler needs information such as:
  - The goods required by the retail store
  - The current amount of stock in the wholesaler's warehouse
  - The frequency to dispatch the goods to the retail store
  - The reorder value and the frequency of goods ordered from the manufacturer
- The manufacturer of the goods will need information such as:
  - The quantity of goods to be manufactured
  - The demand of goods in the market

Information Users in an Organization

- Operational Management:
  - Requires operational information pertaining only to the operations that they manage.
  - Deals with information pertaining to performance and day-to-day management operations in an organization.
  - Gets information from the middle management.
- Middle Management:
  - Deals with department wise information.
  - Uses tactical information.
  - Creates plans on the basis of strategic decisions taken by the top management.
  - Information can be internal and external.
  - Internal sources include data from the operational management.
  - External information sources include government policies and competition processes.
- Top Management:
  - Deals with enterprise wide information.
  - Uses strategic information.
  - Provides support to strategic activities undertaken by the top management.
  - Information is usually gathered from external resources like government agencies and research agencies

Information Systems

- Transaction Processing Systems (TPS)
  - Batch Transaction systems
  - Online Transaction Processing (OLTP) systems
- Management Information Systems (MIS)
- Decision Support Systems (DSS)
  - Business Intelligence (BI) Systems

What is Business Intelligence (BI)

- Is a set of processes, architectures, and technologies that convert raw data into meaningful information that drives profitable business actions.
- Is a suite of software and services to transform data into actionable intelligence and knowledge.
- Has a direct impact on an organization's strategic, tactical and operational business decisions.
- Supports fact-based decision making using historical data rather than assumptions and gut feeling.
- Perform data analysis and create reports, summaries, dashboards, maps, graphs, and charts to provide users with detailed intelligence about the nature of the business.

Importance of BI

- Measurement: creating KPI (Key Performance Indicators) based on historical data.
- Identify and set benchmarks for varied processes.
- Identify market trends and spot business problems.
- Data visualization that enhances the data quality and thereby the quality of decision making.
- Can be used not just by enterprises but SME (Small and Medium Enterprises)

Steps to Implement BI Systems

1. Raw Data from corporate databases is extracted. The data could be spread across multiple systems heterogeneous systems.

2. The data is cleaned and transformed into the data warehouse.

3. Using BI systems the user can ask queries, request ad-hoc reports or conduct any other analysis.

Four types of BI users

1. Professional Data Analyst: The data analyst is a statistician who always needs to drill deep down into data. BI system helps them to get fresh insights to develop unique business strategies.

2. IT users: The IT user also plays a dominant role in maintaining the BI infrastructure.

3. Head of the company: CEO or CXO can increase the profit of their business by improving operational efficiency in their business.

4. The Business Users: Business intelligence users can be found from across the organization. There are mainly two types of business users:
   - Casual user
   - Power user

Advantages of Business Intelligence

- Boost Productivity
- Improve Visibility
- Fix Accountability
- Gives a bird's eye view
- Streamlines business processes
- Allows for easy analytics

Disadvantages of BI System

- Cost
- Complexity
- Limited use
- Time Consuming Implementation

Trends in Business Intelligence

- Artificial Intelligence
- Collaborative BI
- Embedded BI
- Cloud Analytics

Self Service Business Intelligence

- Is defined here as end users designing and deploying their own reports and analyses within an approved and supported architecture and tools portfolio.

- Allow people in the enterprise to analyze business data and present the information from that analysis without tying up IT or BI teams.

Traditional vs. Self Service BI

- Businesses that use traditional BI tools operate in a highly controlled environment, where analysts or the IT team maintain access to data.
- That means users must request data reports or dashboards, then wait for the analysts to deliver the reports to them.
- This process causes backups and delays in providing information designed for timely decision-making.
- Self-service BI tools incorporate intuitive user interfaces that make working with data more accessible for those without technical expertise.
- Self-service BI tools perform best when utilizing a centralized data model where all users will have uniform data definitions from which to work.
- This model ensures a more trustworthy approach to sharing data because everyone is using the same metrics and dimensions to discover insights.

SSBI Tools

- Tableau Desktop
- Zoho Reports
- Sisense
- POWER BI
- Qlik Sense
- Domo
- Quick Sight
- Dundas
- Google Analytics

Product	Zoho Reports	Qlik Sense	Microsoft Power BI	Tableau Desktop	Sisense	Domo	Google Analytics	Dundas	Quick Sight
Lowest Price									
Editors' Rating	●●●◐○	●●●●◐ EC EDITORS' CHOICE	●●●●◐ EC EDITORS' CHOICE	●●●●◐ EC EDITORS' CHOICE	●●●●○	●●●◐○	●●●◐○	●●●◐○	●●●●○
Free Trial	✓	✓	✓	✓	✓	✓	✓	✓	✓
Free Version Available	✓	✓	✓	—	—	✓	✓	✓	✓
Mobile Versions	✓	✓	✓	✓	✓	✓	✓	✓	✓
Point-in-Time Analytics	✓	✓	✓	✓	✓	✓	✓	✓	✓
Real-Time Analytics	✓	—	✓	✓	✓	✓	✓	✓	✓
Predictive Analytics	✓	✓	✓	✓	✓	✓	—	✓	—
Data Prep Tools	✓	✓	✓	✓	✓	✓	—	✓	✓
Prompts for Lower-Skilled Users	✓	✓	✓	—	—	—	✓	✓	—
Features for High-Skilled Users	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tools to Blend / Join / Integrate Data	✓	✓	✓	✓	✓	✓	✓	✓	✓
Guidance in Forming Query	✓	✓	✓	✓	✓	—	✓	✓	✓
Guidance in Data Exploration	✓	✓	✓	✓	✓	✓	✓	✓	—
Semantic Querying / Natural Language	—	✓	—	—	✓	—	—	—	—
Social Media Analytics	✓	✓	✓	✓	✓	✓	—	—	✓
Visualizations Feature	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sharing / Collaboration Tool	✓	✓	✓	✓	✓	✓	✓	✓	✓

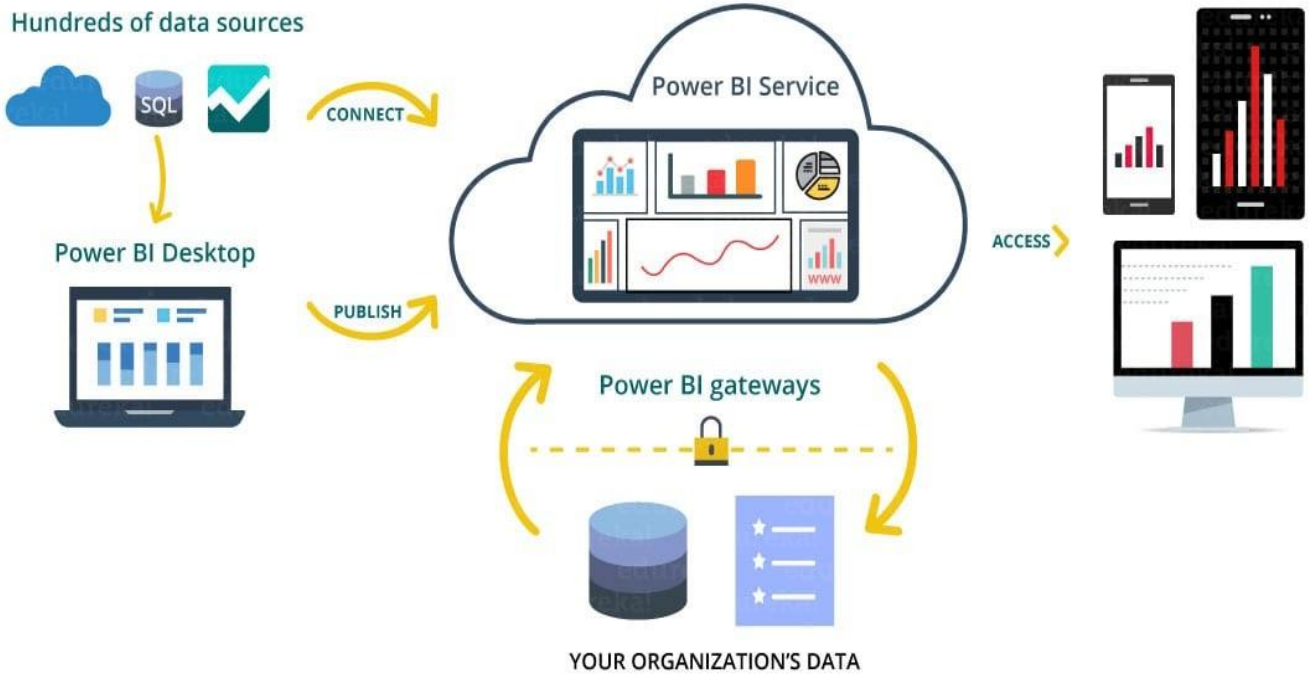
What is Power BI

- Is the collective name for an assortment of cloud-based apps and services that help organizations collate, manage, and analyze data from a variety of sources, through a user-friendly interface.
- Pulls data together and processes it, turning it into intelligible insights, often using visually compelling and easy-to-process charts and graphs.
- Allows users to generate and share clear and useful snapshots of what's happening in their business.
- Connects to a range of data sources, from basic Excel spreadsheets to databases, and both cloud-based and on-premise apps.
- Refer to either a Windows desktop application called Power BI Desktop, an online SaaS (Software as a Service) service called Power BI Service, or mobile Power BI apps available on Windows phones and tablets, as well as for iOS and Android devices.
- Built on the foundation of Microsoft Excel.
- Helps users see not only what's happened in the past and what's happening in the present, but also what might happen in the future.
- Power BI is infused with machine learning capabilities, meaning it can spot patterns in data and use those patterns to make informed predictions and run "what if" scenarios.

Key Benefits of Power BI

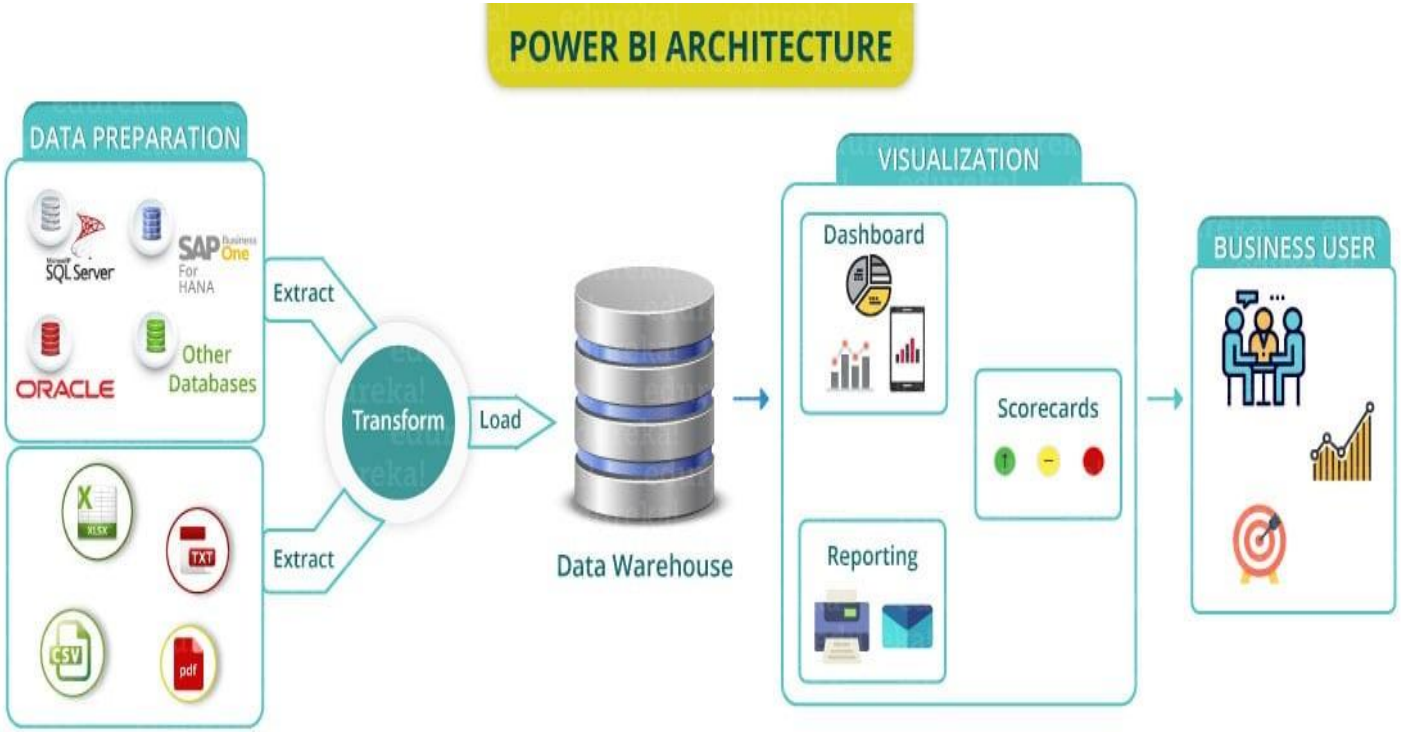
- Businesses can input huge quantities of data into Power BI that many other platforms would struggle to process.
- Built-in machine learning features can analyze data and help users spot valuable trends and make educated predictions.
- Information can be visualized using powerful templates to allow businesses to better make sense of their data.
- IS cloud-based, so users get cutting edge intelligence capabilities and powerful algorithms that are updated regularly.
- Powerful personalization capabilities allow users to create dashboards so they can access the data they need quickly.
- Alerts can be set up on KPIs to keep users up to date important metrics and measurements..
- Power BI has an intuitive interface that makes it far more user-friendly and easy to navigate the complex spreadsheets.
- Integrates with other popular business management tools like SharePoint, Office 365, and Dynamics 365, as well as other non-Microsoft products like Spark, Hadoop, Google Analytics, SAP, Salesforce, and MailChimp.
- With data security a massive talking point for modern businesses, Power BI ensures data is safe, offering granular controls on accessibility both internally and externally.

Flow of Power BI



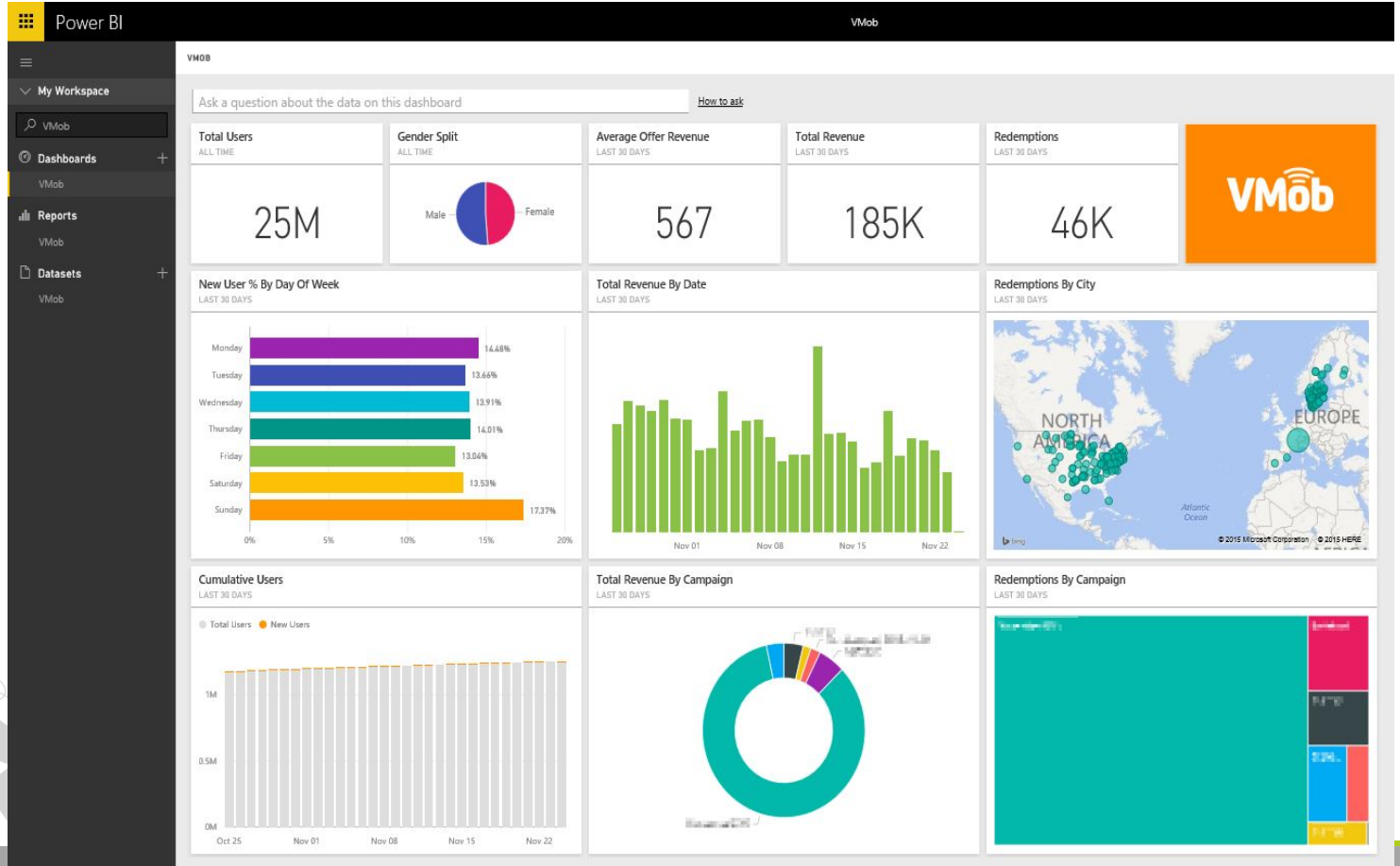
Components of Power BI

Architecture of Power BI



Building Blocks of Power BI

Visualizations



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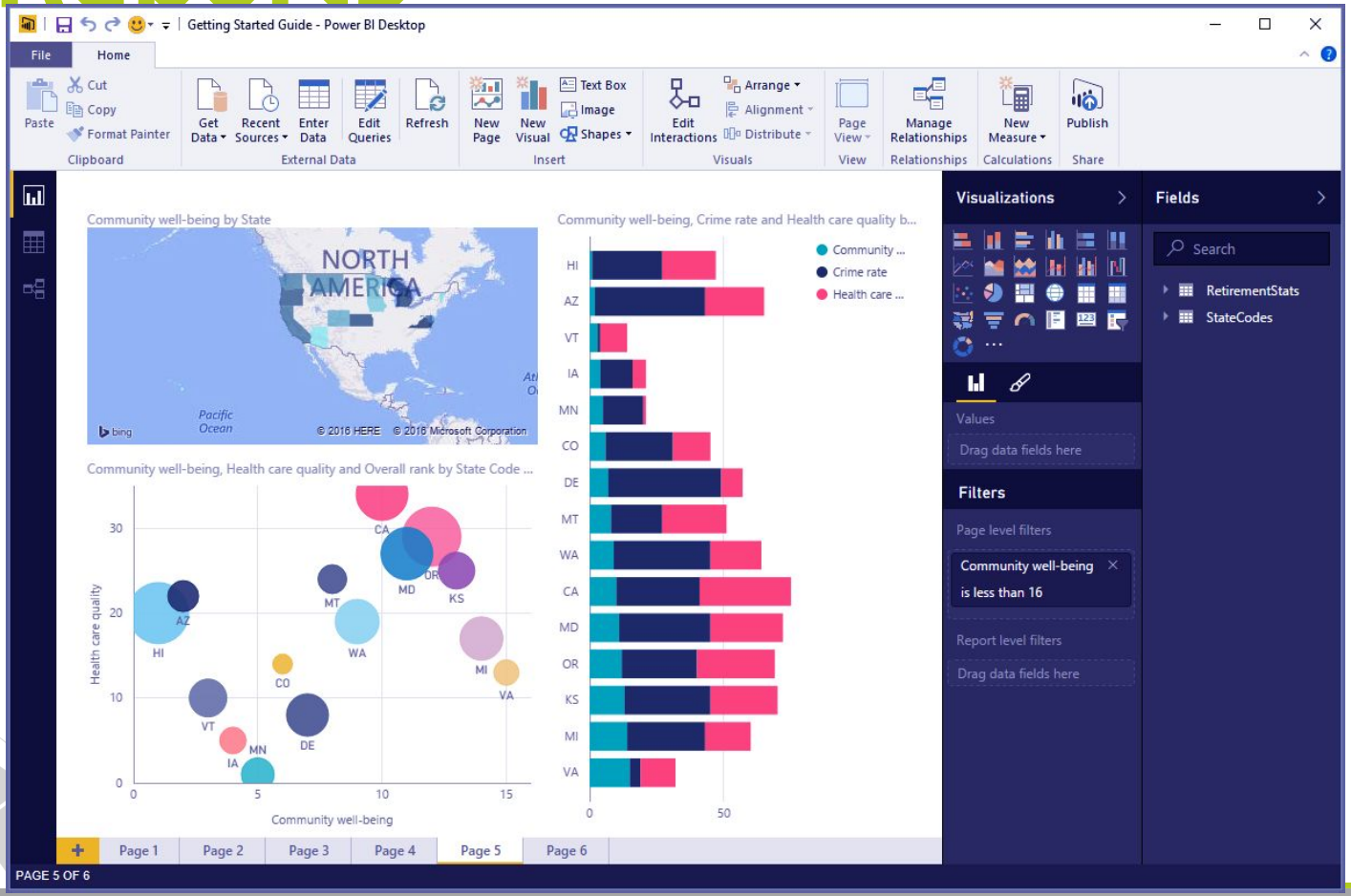
Reports


Getting Started Guide - Power BI Desktop
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Cut
Copy
Format Painter
Paste
Clipboard
Get Data
Recent Sources
Enter Data
Edit Queries
Refresh
External Data
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New Visual
Text Box
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Shapes
Insert
Edit Interactions
Arrange
Alignment
Distribute
Visuals
Page View
View
Manage Relationships
Relationships
New Measure
Calculations
Publish
Share
Community well-being by State
NORTH AMERICA
Pacific Ocean
© 2016 HERE © 2016 Microsoft Corporation
Community well-being, Crime rate and Health care quality b...
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Crime rate
Health care ...
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MN
CO
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MT
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CA
MD
OR
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MI
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Report level filters
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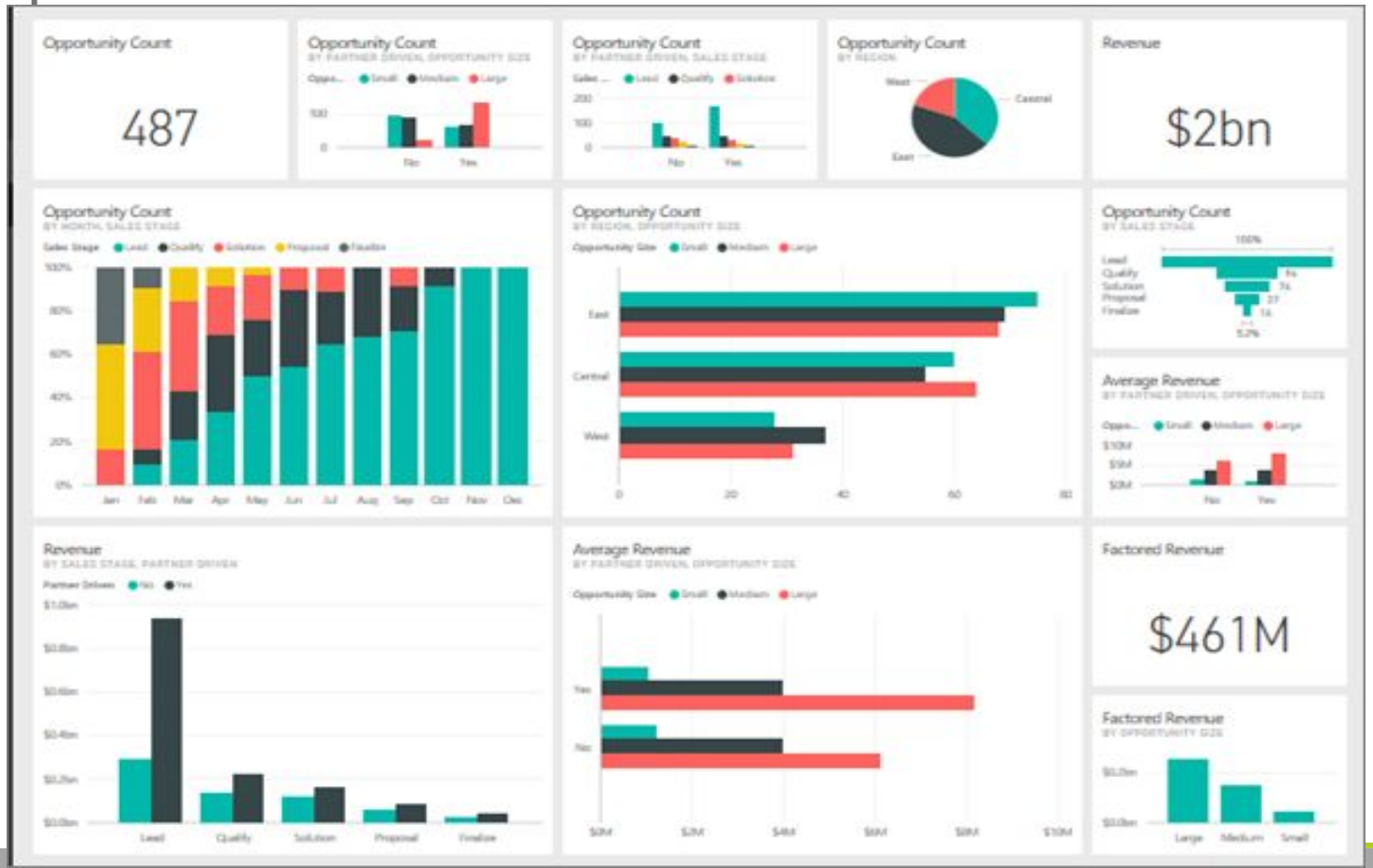
Page 6
PAGE 5 OF 6

Dashboards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Opportunity Count
BY PARTNER DRIVEN, OPPORTUNITY SIZE
Opportunity Count
BY PARTNER DRIVEN, SALES STAGE
Opportunity Count
BY REGION
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East
Revenue
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Opportunity Count
BY MONTH, SALES STAGE
Opportunity Count
BY REGION, OPPORTUNITY SIZE
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West
Opportunity Count
BY SALES STAGE
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Qualify
Solution
Proposal
Finalize
Average Revenue
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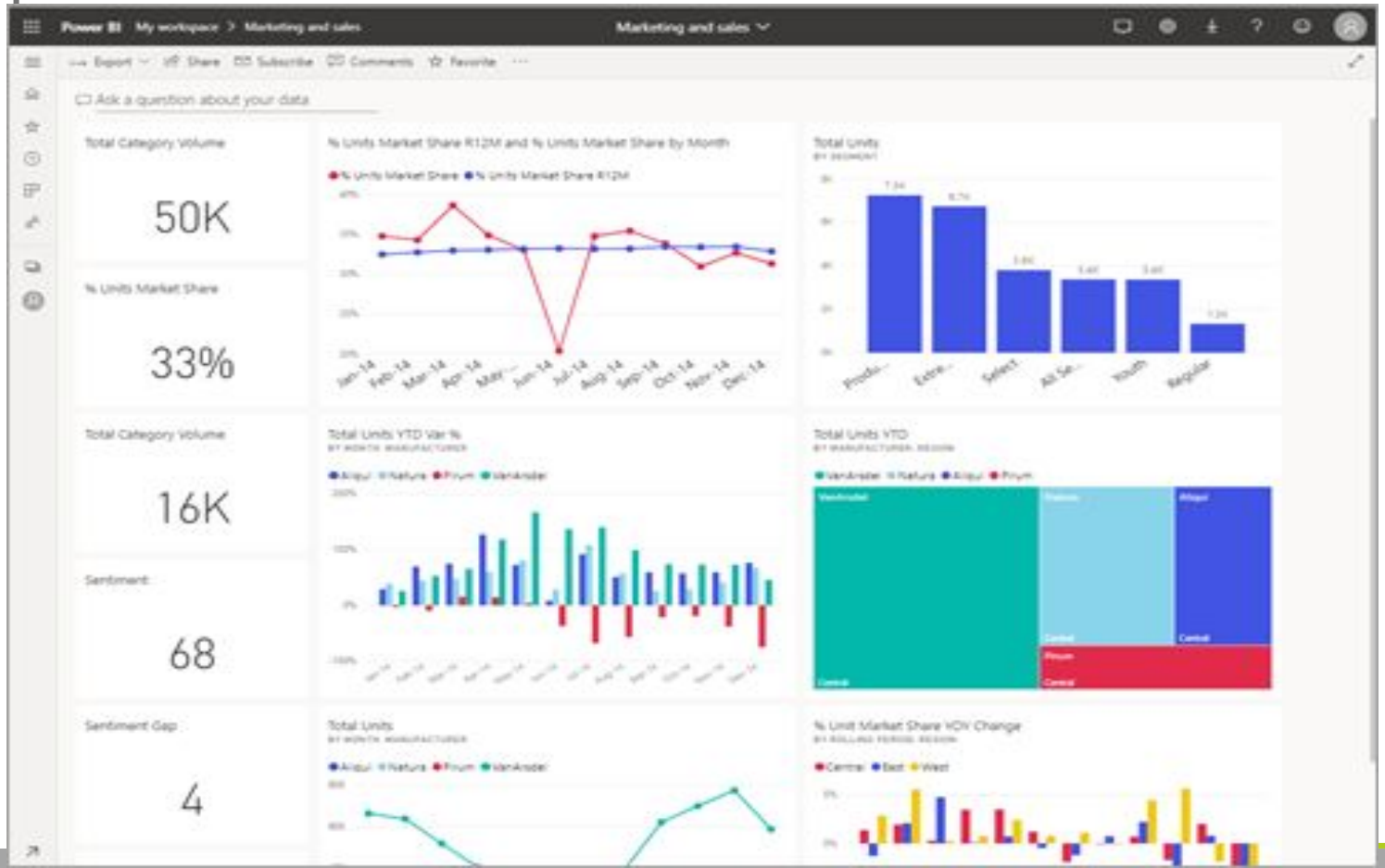
Power BI
My workspace > Marketing and sales
Marketing and sales
Export
Share
Subscribe
Comments
Favorite
Ask a question about your data
Total Category Volume
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% Units Market Share
33%
% Units Market Share R12M and % Units Market Share by Month
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Total Category Volume
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Total Units YTD Var %
Total Units YTD
Sentiment
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Sentiment Gap
4
Total Units
% Unit Market Share YOY Change