COMMON BI CHALLENGES

• Lots of data to analyze – Getting complete picture is very difficult
• Many types of data – Structured, Unstructured etc.
• Many data sources – Databases, Files, Cloud, Legacy Systems etc.
• Different types of users – Different grain of information
• Security, Maintainability, Learning curve etc.
WHAT IS – POWER BI

Experience your data. Any data, any way, anywhere

• Power BI is a cloud-based business analytics service by Microsoft
• Fast and easy access to your data
• Can get LIVE data feeds from your business
• Great for data discovery and exploration
• Easy to get insights from data
• Collaborate “information” across your Business Units
• Anyone to analyze & play with data (Filters)
SOME OF THE BENEFITS

• Has Pre-built dashboards (Content Packs) for popular SaaS solutions
• Pushes Real-time dashboard updates
• Secure connectivity to your data sources, reports, dashboards etc.
• Smart data exploration using natural language query (Q&A)
• Integrated with familiar Microsoft products and utilizes cloud for scale & availability (i.e. Azure)
• Fast deployment, hybrid configuration, secure, and integrated with your IT systems.
OVERVIEW

Data sources

- **SaaS solutions**
  - e.g. Marketo, Salesforce, GitHub, Google analytics
- **On-premises data**
  - e.g. Analysis Services
- **Organizational content packs**
  - Corporate data sources or external data services
- **Azure services**
  - Azure SQL, Stream Analytics...
- **Excel files**
  - Workbook data / data models
- **Power BI Desktop files**
  - Data from files, databases, Azure, and other sources

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Power BI service

- **Content packs**
- **Live dashboards**
- **Visualizations**
- **Reports**
- **Datasets**
- **Data refresh**

- **Natural language query**
- **Sharing & collaboration**
How do I start?

Powerbi.com

Let us help you bring your data to life

Power BI transforms your company’s data into rich visuals for you to collect and organize so you can focus on what matters to you. Stay in the know, spot trends as they happen, and push your business further.

Enter your work email address
Use It Free

Power BI Desktop
Let us help you bring your data to life

Power BI transforms your company’s data into rich visuals for you to collect and organize so you can focus on what matters to you. Stay in the know, spot trends as they happen, and push your business further.

Enter your work email address  Use it free

By clicking Use it free, you agree to the Power BI Terms of Service.
SIGNING UP

- Free & easy sign up – takes few seconds
- It works ONLY with organizational account, associated with your work or school email address (i.e. private domain)
- Tip: Use same account in Power BI and Azure Services
  - avoid signing-in/out of different browser sessions
  - add your organizational account as co-admin in Azure to use the same account in Power BI and Azure
Get started with pre-built content packs for popular SaaS solutions or for your organization

Content packs include
- pre-configured dashboards
- reports
- data models
- embedded queries

Organizational content packs
- Package up and share your own dashboard, reports, and datasets with your coworkers
HIERARCHY - OBJECTS

Dashboard

Reports

Datasets
DATASET

- A dataset is something that your Report connects to
- One dataset represents a single source of data
- A single dataset:
  - Can be used over and over
  - Can be used in many different reports
  - Visualizations from that one dataset can display on many different dashboards
A Power BI report is one or more pages of visualizations (charts and graphs).

Reports can be created from scratch within Power BI or can be imported with datasets and with shared dashboards.

A single Report:
- can be associated with multiple dashboards
- can be created using data from one dataset (however in Power BI Desktop you can combine more than 1 dataset into a single report and that report can be imported into Power BI)
REPORT FILTERS

- Filters apply to entire report or selected visual
- Report owners can add filters to a report and those filters are saved with the report
- Report viewers can interact with the filters, but no changes are saved with the report
- Filter types
  - Text field filters
  - Numeric field filters
  - Date and time field filters
- Filter modes
  - List mode – to toggle the state of all values
  - Advanced mode – select a range or start/end values. Build complex filter expressions with multiple conditions (And/Or)
AGGREGATIONS

- Numeric fields in Power BI are imported with the data (defined in the data model your report is based on)
- In the Field List, numeric fields are shown with the $\sum$ symbol
- Summarization options:
  - Do Not Summarize - each value is treated separately and not summarized
  - Sum - adds up all the values in that field
  - Average - takes an arithmetic mean of the values
  - Minimum - shows the smallest value
  - Maximum - shows the largest value
  - Count (Not Blanks) - counts the number of values in that field that are not blank
  - Count (Distinct) - counts the number of different values in that field
DATA VISUALIZATIONS

• Visualize data in a variety of ways
• Growing number of visualization types
• including donuts, basic area, waterfall, filled maps, tree maps, funnel, gauges combo charts and more
• Cross-filter across visualizations within a report to surface new insights
DASHBOARD

- One view (insight) for your organization
- To get up to date & valuable information about their business (real-time in some cases)
- To ensure all people are viewing and using the same information from central location
- A single dashboard:
  - can display visualizations from many different datasets
  - can display visualizations from many different reports
DASHBOARD

- Different ways to build dashboards
  - import data from various data sources
  - upload pre-existing reports
  - construct interactive reports from scratch

- Pin charts from reports to a dashboard with one click

- Edit your reports and dig deeper into your data by
  - adding and removing fields
  - changing visualization types
  - creating new visualizations
  - adding / deleting visualizations and pages from the report
SCOPE OF CUSTOMIZATION

- Developers can add custom visuals into Power BI for use in dashboard, reports and content packs
- Microsoft has published the code for all Power BI visualizations to GitHub
- The visualization framework, the test suite and tooling is provided to help the community build high quality custom visuals for Power BI
- For more information see http://powerbi.Microsoft.com/custom-visuals
ACCESSIBILITY

- Access dashboards using native mobile apps for Windows, iOS and Android
- Set favorites for important visualizations
- Zoom in and out of a visualization
- Annotate visualization and share snapshot with others
- Configure alerts to get notifications on critical business KPIs
- For more details go to https://powerbi.microsoft.com/mobile
ASK QUESTION TO YOUR DATA

- Type questions in plain language – Power BI Q&A will provide the answers
- Q&A intelligently filters, sorts, aggregates, groups and displays data based on the key words in the question
- Pin the answers to your dashboard
- Set up data models with natural key phrasing to enable the best results
SHARE & COLLABORATE

- Easily share dashboards and reports across your organization
- Sharing can be controlled by Administration
- Changes to dashboards automatically sync across all users
- Datasets for dashboards and reports reside in the group’s workspace
LIVE DATA

- Real-time dashboards
  - using the Power BI REST API or
  - with built-in Azure Stream Analytics integration
- Live connectivity
  - data is updated as user interacts with dashboard or report
  - to existing on premise sources, e.g. Analysis Services, with auto-refresh
  - to Azure SQL Database with auto-refresh
- Automatic or scheduled refreshes
  - regardless of where data lives
  - SaaS data sources (automatic)
  - Schedule refreshes for on premise data sources with Personal Gateway
SCHEDULED REFRESH

• Personal Gateway empowers the business analyst to securely and easily refresh on-premise data

• No help from IT required to setup Personal Gateway (on local machine) or schedule refreshes

• With the Power BI Desktop or Excel and the Personal Gateway, data from a wide range of on-premises sources can be imported and kept up-to-date

• The Gateway installs and runs as a service on your computer, using a Windows account you specify

• Data transfer between Power BI and the Gateway is secured through Azure Service Bus
POWER BI DESKTOP
(LEST TALK HOW IT CAN BE DONE ?)
WHERE TO GET IT?

- It's available at powerbi.com
- Free & Full version
- You can get updates (free too)
COMPONENTS?

- Combines the power of Power Query, Power Pivot, Power Map and Power View

(That’s A Lot of Power!)
WHAT YOU CAN DO?

• Get and prepare data with simple connectivity
• Establish data models & relationships to analyze data
• Explore data in a freeform, drag-and-drop report pane
• Author reports with a broad range of modern data visualizations
• Publish interactive reports to Power BI
**DATA SOURCES**

- In-memory data processing & in build optimization
- Edit data using queries before loading

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DATA PREPARATION

Transform data to fits your needs

- Select data which you need
- Cleanse data and remove errors
- Modify data types to support specific calculation requirements

### Common data tasks

- Remove rows or columns
- Change a data type
- Pivot columns and group rows
- Modify a table name
- Identify and fix errors
- Merge or append queries to combine data from multiple queries into a single query
• Automatically create a model by importing data
  o It detects relationships automatically, categorizes data and applies default summarization
• Define calculations – known as measures – to generate new fields for use in reports
  o Use automatically generated measures, or create custom measures with Data Analysis Expressions (DAX) formulas
• Develop advanced analytics using a combination of measures and relationships
  o Uncover correlations, highlight exceptions and understand business outcomes
**CANVAS OF FREEDOM**

- Explore data in various ways and with multiple visualizations
  - Select data elements, sort & slice them
  - Filter data and use cross-filter capabilities
  - Drill into and across datasets
  - Pivot and slice data
  - Change visualization types (ad-hoc 😊)
- Select, transform and mashup data via a freeform, drag & drop
- Change colors, format and customize
  - Title, Background Color, Legend, Data Labels
  - New visual color formatting with fixed and data driven settings
PUBLISH (TO SHARE)

Just hit this
Your Questions Please?
THANKS TO SOURCES

• https://powerbi.microsoft.com
• http://www.lynda.com/Power-BI-Office-365-tutorials/Power-BI-Features-Depth
• http://social.technet.microsoft.com/wiki/contents/articles/18462.power-bi-learning-resources.aspx
• http://www.jenunderwood.com/category/power-bi/
• https://support.powerbi.com/knowledgebase/articles/471664-getting-started-with-power-bi-desktop