

1. List and explain different PowerBi products?

Ans.: PowerBi products are as follows:

a)PowerBi Desktop-

- i. Creating and editing customized reports for every level of expertise.
- ii. Data ingestion from hundreds of supported data sources.
- iii. Data transformation, cleaning, data model creation with built-in Power Query Editor.
- iv. AI-driven analytics.
- v. Interactive reporting with pre-built or custom visuals.

b)PowerBi pro-

- i. Self-service BI in the cloud.
- ii. Creating, editing and sharing reports and dashboards among users.
- iii. Collaboration in personal and team workspaces.
- iv. 10 GB of storage per user.

c)PowerBi premium:

- i. Enterprise BI both on-premises and in the cloud.
- ii. Dedicated storage (100 TB) and compute resources.
- iii. Consumption of Power BI content without individual licensing.
- iv. Maintaining BI assets on-premises with the Power BI Report server.
- v. Paginated reporting.
- vi. Multi-geo capability.

d)Powerbi embedded:

- i. Reports, dashboards and visual analytics embedded into applications.
- ii. An extensive library of data connectors, APIs, and fully documented SDKs.

2. What limitations of Excel, Microsoft solved by PowerBi?

Ans:

- i. Excel is used to organize data, transform it and perform mathematical operations and calculations. On the other hand, Power BI was conceived as a business intelligence and data visualization tool for businesses.
- ii. Excel has limitations in the amount of data it can work with. In contrast, Power BI can handle much larger amounts of data.
- iii. Power BI can connect to a large number of data sources, while Excel's connectivity capacity is limited. Also, unlike Excel, Power BI can be easily used from mobile devices.
- iv. Power BI has faster processing than Excel.s
- v. Power BI dashboards are more visually appealing, interactive and customizable than those in Excel.

- vi. Power BI is a more powerful tool than Excel in terms of comparison between tables, reports or data files.
- vii. Power BI is more user friendly and easy to use than Excel.

3. Explain PowerQuery?

Ans.: Power Query is a data transformation and data preparation engine. Power Query comes with a graphical interface for getting data from sources and a Power Query Editor for applying transformations. Because the engine is available in many products and services, the destination where the data will be stored depends on where Power Query was used. Using Power Query, you can perform the extract, transform, and load (ETL) processing of data.

Existing challenge	How does Power Query help?
Finding and connecting to data is too difficult	Power Query enables connectivity to a wide range of data sources, including data of all sizes and shapes.
Experiences for data connectivity are too fragmented	Consistency of experience, and parity of query capabilities over all data sources.
Data often needs to be reshaped before consumption	Highly interactive and intuitive experience for rapidly and iteratively building queries over any data source, of any size.
Any shaping is one-off and not repeatable	When using Power Query to access and transform data, you define a repeatable process (query) that can be easily refreshed in the future to get up-to-date data. In the event that you need to modify the process or query to account for underlying data or schema changes, you can use the same interactive and intuitive experience you used when you initially defined the query.
Volume (data sizes), velocity (rate of change), and variety (breadth of data sources and data shapes)	Power Query offers the ability to work against a subset of the entire dataset to define the required data transformations, allowing you to easily filter down and transform your data to a manageable size. Power Query queries can be refreshed manually or by taking advantage of scheduled refresh capabilities in specific products (such as Power BI) or even programmatically (by using the Excel object model). Because Power Query provides connectivity to hundreds of data sources and over 350 different types of data transformations for each of these sources, you can work with data from any source and in any shape.

Power Query can be used in many products, such as Power BI and Excel. However, using Power Query within a product limits its usage to only that specific product. Dataflows are a product-agnostic service version of the Power Query experience that runs in the cloud. Using dataflows, you can get data and transform data in the same way, but instead of sending the output to Power BI or Excel, you can store the output in other storage options such as Dataverse or Azure Data Lake Storage. This way, you can use the output of dataflows in other products and services.

4. Explain PowerMap?

Ans.: Power BI has five main components: Power Query, Power Pivot, Power View, Power Q&A, and Power Map. A power map **lets you discover insights you might not see in traditional two-dimensional (2-D) tables and charts**. With Power Map, you can plot geographic and temporal data on a 3-D globe or custom map, show it over time, and create visual tours you can share with other people..

Power mapping is a **visual tool used by social advocates to identify the best individuals to target to promote social change**. The role of relationships and networks is very important when advocates seek change in a social justice issue.

With Power Map, you can plot geographic and temporal data on a 3-D globe or custom map, show it over time, and create visual tours you can share with other people. You'll want to use Power Map to:

- **Map data** Plot more than a million rows of data visually on Bing maps in 3-D format from an Excel table or Data Model in Excel.
- **Discover insights** Gain new understandings by viewing your data in geographic space and seeing time-stamped data change over time.
- **Share stories** Capture screenshots and build cinematic, guided video tours you can share broadly, engaging audiences like never before. Or export tours to video and share them that way as well.

Steps to powermapping:

Before power mapping

Identify and familiarize oneself with target social problem and major players or decision makers involved.

Step 1: Determine target

Power mapping is a visual tool that should be drawn. In the center is the person or institution that can make the decision or enact desired changes to address the identified social problem.

Step 2: Map influence to target

Next, it is important to think about associations, people or institutions that have relationships with the target individual and can potentially influence them. These could include work, political, family religious and neighborhood ties and they should be written in a ring around the problem. Creativity is important when identifying potential associations (barber/hairdresser etc.). Also, strategy is an important part of the process. Be sure to look at all major donors and constituency groups the person has interacted with. Finally, be thorough in the way you think about relationships. Spend time looking at each identified associate and think about the people and institutions they are connected to.

Step 3: Determine relational power lines

Begin to review the network that you have created and determine any connections between the target, as well as the different people and institutions. Remember to take indirect connections into account as well for example, a decision maker may not be directly involved with an organization, but may have family members that are.

Step 4: Target priority relationships

Circle the people with the most power relational lines drawn to them and identify people with few critical relational power lines that has a lot of influence. If there is someone without a clear relationship then develop a plan to find out more about the person.

Step 5: Make a plan

Create action steps for moving forward by determining the best way to access the individuals through the relationships determined.

This is one of many methods of power mapping. The Change Agency, Beautiful Trouble, Oxfam, and others have developed others.

5. How powerBi eliminated the need to host SharePoint Server on premises?

Ans.: customers can use Power BI and optionally integrate their Power BI content into SharePoint 2019 and SharePoint Online, using either Power BI or Power BI Report Server. We're making this experience in Power BI better than ever by:

- **Adding support for all major report types across both platforms.** In the coming weeks, we'll have the first public preview of Paginated (RDL) reports in Power BI Premium, giving customers full support for Paginated Reports, Power BI Reports and Excel Workbooks in Power BI.

- **Providing easier ways to report on your data in SharePoint.** We've recently announced new functionality to make it easier than ever to start visualizing your Excel tables and CSV files stored in SharePoint Online in Power BI.

Additionally, for Power BI Report Server, we're adding some new features that already exist in Power BI, but were previously available only through SharePoint integration for on-premises deployments. These include –

- **Power Pivot Scheduled Data Refresh.** We first added support for Excel Workbooks in Power BI Report Server in October 2017, including the hosting and viewing of Excel Workbooks containing data models. We'll be expanding this support to include scheduled data refresh of these workbooks.

- **Modern Authentication support.** Security considerations are a key part of any BI deployment strategy, and many customers used SharePoint to handle claims-based authentication scenarios for their users. We're adding native support for ADFS/AAD authentication to Power BI Report Server in an upcoming release.

6. Explain the updates done in Power BI Service(power BI 2.0) as compared to older version ?

New login page

The first thing front office users will notice when using PowerBI Portal is the new login page. It's cleaner, more appealing, and supports Microsoft, Google, and Facebook login in addition to the Access code generated by in the back office.

Revamped user interface with reports grouped by area

Once you log in, you'll notice that PowerBI Portal's user interface is also completely new. PowerBI made the front office much easier to navigate with reports now grouped by area. As in the previous version, you can also switch report areas in the top left corner of the screen.

Reports can now be saved as favorites

Another much-requested feature is finally available in PowerBI Portal. If you deal with many reports, you can now save some as favorites, so they are the first ones available in each area.

List and import users directly from the organization's Azure AD.

A feature that will surely speed up the process of adding users to PowerBI Portal at larger companies is the ability to import them directly from the organization's Azure Active Directory. From the Users tab, click "Import from Azure AD" on the top right corner of the screen. Next, click "Load users from Azure Active Directory" and all users from your organization will be listed below. You can assign their roles or remove them from PowerBI Portal. Press Save at the bottom of the screen when you're finished.

Report backgrounds and thumbnails can now be edited

The Edit report tab now allows users to set their thumbnails to round images, with the default being a square image. Additionally, companies can now choose to apply transparent backgrounds to their reports in order to display their branding. This option is also available when choosing the report's visual to display.

Visuals can now be individually selected to be displayed on the report page

Instead of displaying an entire report in the front office, back office users can now set which individual visuals are displayed to front office users. From the Reports tab, click the open report button next to the report you want to edit. After selecting your report from the navigation tree on the left, two orange buttons will become available: Choose layout and Choose visuals. The Choose layout button allows you to choose 1 of 6 different ways to display your report's data, while the Choose visuals layout lets you choose exactly which visuals from your report will be displayed to front office users.