Introducing Power BI

Loy Vanich (laploy@gmail.com 084 007 5544)

What is Power BI?

- A business analytics service provided by Microsoft.
- It provides interactive visualizations with self-service business intelligence capabilities
- End users can create reports and dashboards by themselves
- Without having to depend on information technology staff or database administrators.

Power BI VS SSRS

Overview

	Reporting Services	Power View / Power BI
Primary purpose	Traditional structured reporting (pre-defined queries and drill paths)	Data discovery / interactive exploration
Architectural mode	Native Mode or SharePoint Mode	Power View for Excel or Power BI Designer or Power View for SharePoint Both Excel and Power BI Design can be used standalone or in conjunction with the Power BI portal (SaaS cloud app)
Installation components	Native Mode: Report Manager with ReportServer SharePoint Mode: SharePoint with ReportServer Client: Visual Studio with SSDT or BIDS and/or Report Builder (click-once app)	Power View for Excel (enabled in Excel) or Power BI Designer (standalone download) or Power View for SharePoint (part of SSRS in SharePoint)

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Deployment and Delivery

	Reporting Services	Power View / Power BI
Delivery approach	On-premises (or IaaS)	Hybrid (full functionality) or On-premises (subset of functionality)
Access types	Report Manager web app (Native mode) or SharePoint	Excel (client) or SharePoint or Power BI portal (SaaS cloud app)
Mobile delivery capabilities	No native apps Partial support across mobile devices and browsers (requires SQL Server 2012 SP1+)	Native apps: iOS, Windows, Android + HTML5 in browser (Excel and SharePoint still based on Silverlight)
Organization of content	Native mode: folders in Report Manager SharePoint mode: sites, document libraries, folders in SharePoint	Structuring content across functional areas and/or user groups is not yet released in Power BI v2
Support for anonymous users (public)	Yes (custom authentication)	Not yet
Support for row-level security	Yes (if data source is using Windows authentication; not applicable to subscriptions which require ID/PW to be specified)	Yes (only if using SSAS Tabular data source in Power BI v2 which passes EffectiveUserName)

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Development

	Reporting Services	Power View / Power BI
Design approach	Data-First (report connects to an embedded or shared dataset query)	Data-First (report connects to an existing model or data source)
Development environment	Report Designer (Visual Studio/SSDT/BIDS) or Report Builder (click-once app)	Power BI Designer or Power View for Excel or Power View for SharePoint (web)
Typical content creator	IT developer or Proficient power user	Data analyst (created purposely to have a minimal learning curve)
Creation of underlying report query	Need to create query which is contained within a dataset (can write syntax or use a UI)	Drag and drop (cannot write specific underlying query)
Designer	Free-form layout (with precise alignment ability in body, header, and footer)	Free-form layout (without precise alignment ability)
File extension	.RDL	.XLSX (Excel) or .PBIX (Power BI Designer) or .RDLX (Power View for SharePoint)

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Features

	Reporting Services	Power View / Power BI
Parameterization	Parameter pane	Slicers (placed on the report body) or Filters pane (page level or for individual table/chart)
Color palette	Standard color selections for individual charts Can customize colors using custom color palettes, expressions, or custom code	Style selections applicable to entire report
Pixel-perfect formatting control	Yes	No
Switch chart types on the fly	No (potential workaround with parameterization and show/hide properties)	Yes
Interactive cross-filtering and highlighting behavior	No	Yes
Calculations and expressions	Many options within the dataset, expressions, and custom code	Straightforward options (Sum, Avg, Min, Max, Count)
Built-in maps	Bubble map, Filled map, Line map, Marker map, Custom ESRI shapefile	Bubble map, Filled map Uses Bing Maps API
Multiple data sources allowed per individual report / dashboard	Yes (one data source per dataset is general rule, though a tablix expression can reference another dataset and/or lookups can be utilized)	No (workaround is to integrate data first in underlying data model)

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Shared datasets (i.e., reusable queries across multiple reports / dashboards)	Yes (embedded dataset can be promoted to be a shared dataset)	Yes (In V2, datasets published to the Power BI service are independent objects from reports and dashboards
Shared report elements (i.e., reusable charts and tables across multiple reports / dashboards)	Yes (report parts which are elements such as tables, charts, gauges, images, maps, parameters, etc. published for reuse)	Yes (Power BI v2 portal supports the ability to 'pin' a report element onto one or more dashboards after the report has been published to the Power BI site)
KPI repository	Indirectly (a KPI can be used from the underlying SSAS or Power Pivot data model, or an indicator can be defined inside of an individual report)	Indirectly (a KPI can be referenced from the underlying SSAS or Power Pivot data model)
Drill-down (additional detail on the same report)	Yes	Yes (basic; affects single object on page only)
Drill-through (additional detail on a different report)	To another report or To custom URL (incl to other reporting tools)	Custom URL (only on Dashboard tiles)

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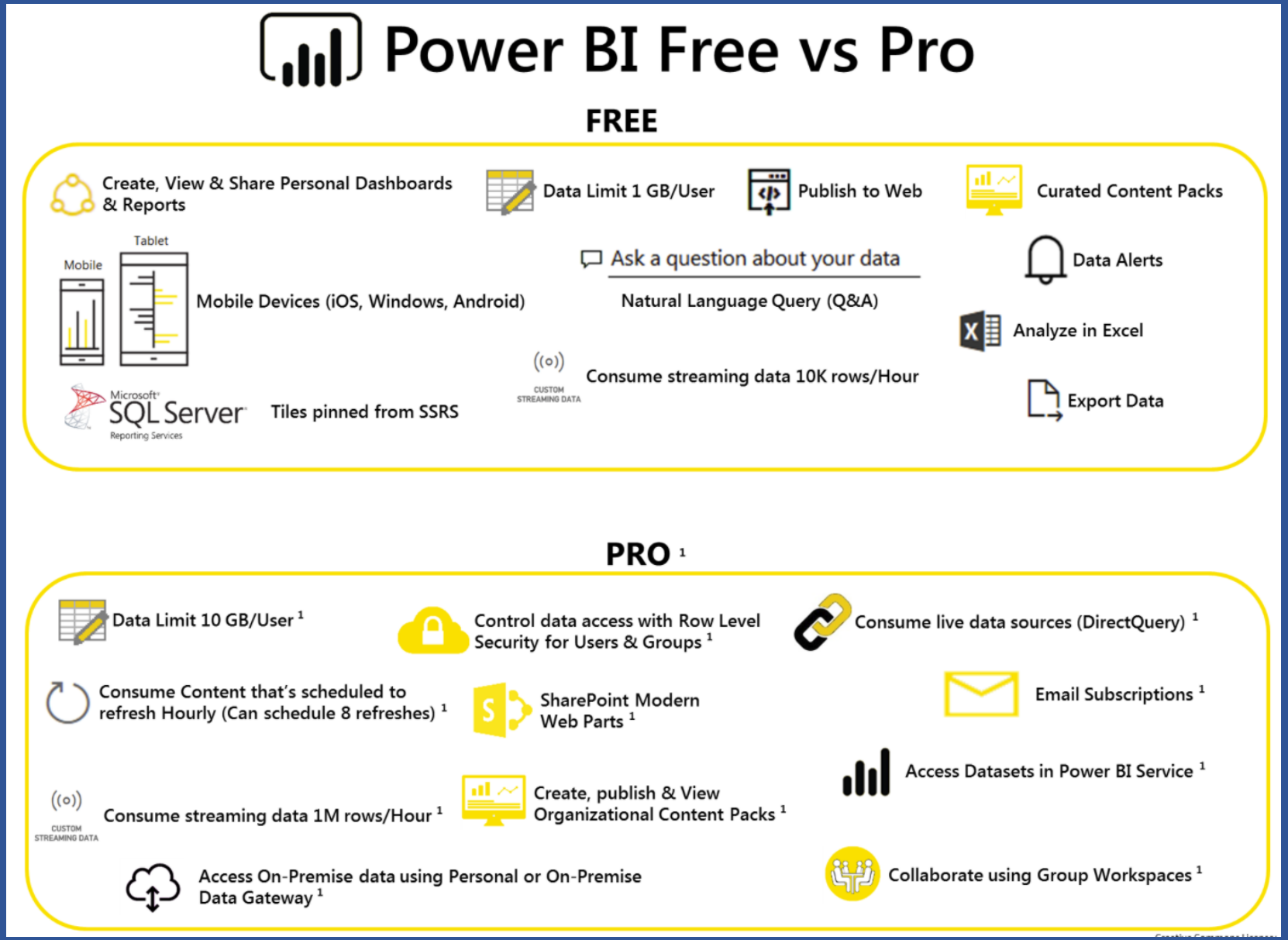
Alerts	Yes (data-driven alerts in SharePoint mode only)	Yes (simple high/low alerting on a single numeric tile - available in v2 mobile app only)
Subscriptions / automated report delivery	Yes (E-mail, file share, SharePoint doc library, preload a cache)	No
Snapshot reporting	Yes (report execution snapshot to improve performance, or report history snapshot to store report as of a point in time)	No (even a Power Point export from SharePoint retains a live connection so it's not an ideal tool for a point-in-time snapshot)
Pinning of report elements	No	Yes (in Power BI v2 portal, an item on a report can be pinned to one or more dashboard pages)
Support for Analysis Services Multidimensional	Yes (requires a flattened dataset with only two axes)	Yes if data brought into embedded model first (i.e., not direct connect in Power BI V2). Live connectivity supported in Power View for SharePoint
Support for Analysis Services Tabular	Yes	Yes

Power BI editions

	SQL Server Reporting Services	Power BI Report Server	Power BI Service
Deployment	On-premises	On-premises	Cloud
Power BI dashboards			✓
Power BI apps			✓
Natural language query (Q&A)			✓
Power BI reports		✓	✓
Paginated reports (RDL)	✓	✓	
Mobile reports (Datazen-based)	✓	✓	
How to buy	SQL Server [1]	Power BI/SQL Server [2]	Power BI
Feature updates	SQL Server release cycle	Rapid release cycle	Rapid release cycle
Support lifecycle	SQL Server support policy	Modern Lifecycle Policy	Managed service

1. SQL Server Standard or Enterprise.
2. Power BI Premium (or SQL Server Enterprise with Software Assurance) per core + Power BI Pro per report publisher


Power BI Free vs Pro
FREE
Create, View & Share Personal Dashboards & Reports
Data Limit 1 GB/User
Publish to Web
Curated Content Packs
Tablet
Mobile
Mobile Devices (iOS, Windows, Android)
Ask a question about your data
Natural Language Query (Q&A)
Data Alerts
Analyze in Excel
CUSTOM STREAMING DATA
Consume streaming data 10K rows/Hour
Export Data
Microsoft SQL Server Reporting Services
Tiles pinned from SSRS
PRO 1
Data Limit 10 GB/User 1
Control data access with Row Level Security for Users & Groups 1
Consume live data sources (DirectQuery) 1
Consume Content that's scheduled to refresh Hourly (Can schedule 8 refreshes) 1
SharePoint Modern Web Parts 1
Email Subscriptions 1
Access Datasets in Power BI Service 1
CUSTOM STREAMING DATA
Consume streaming data 1M rows/Hour 1
Create, publish & View Organizational Content Packs 1
Access On-Premise data using Personal or On-Premise Data Gateway 1
Collaborate using Group Workspaces 1