Microsoft BI Product Suite

On Premises and In the Cloud

- *What is Business Intelligence?*
  How is the BI industry evolving?
  What are the typical components of a BI solution?
  How can BI be deployed within your business?
  Who are the typical users and consumers of a BI solution?

Rolf Tesmer
SQL & BI Solution Architect
Database Services
Dimension Data Australia

Agenda

What are we going to discuss today?

Overview of Business Intelligence

Microsoft Business Intelligence Technologies

Hands On Demonstrations of Microsoft Tools

Wrap Up and Summary

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What is Business Intelligence (BI)?

A definition of BI to get us all onto the same page

Business Intelligence (BI),
in its most basic sense,
is delivering
meaningful, **accurate**, and **timely information**
drawn from diverse sources
to support
an **informed decision making process**.

…and recent business trends indicate it must be…
flexible**, **fast**, **fun**, **collaborative** and at **all levels in a business.

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Microsoft BI Solutions in the Marketplace

Where is Microsoft BI positioned?

- $15m+ in revenue
- 20+ Gartner client survey responses

- **Gartner Magic Quadrant (Jan 14)**
- **Microsoft are in the Leaders Quadrant**
- ***Leaders Definition:***
  - ***Vendors that are strong in breadth/ depth of BI platform capabilities.***
  - ***Can deliver on enterprise implementations that support a BI strategy.***
  - ***They articulate a business proposition that fits with BI buyers, supported by capability to deliver on a global basis***

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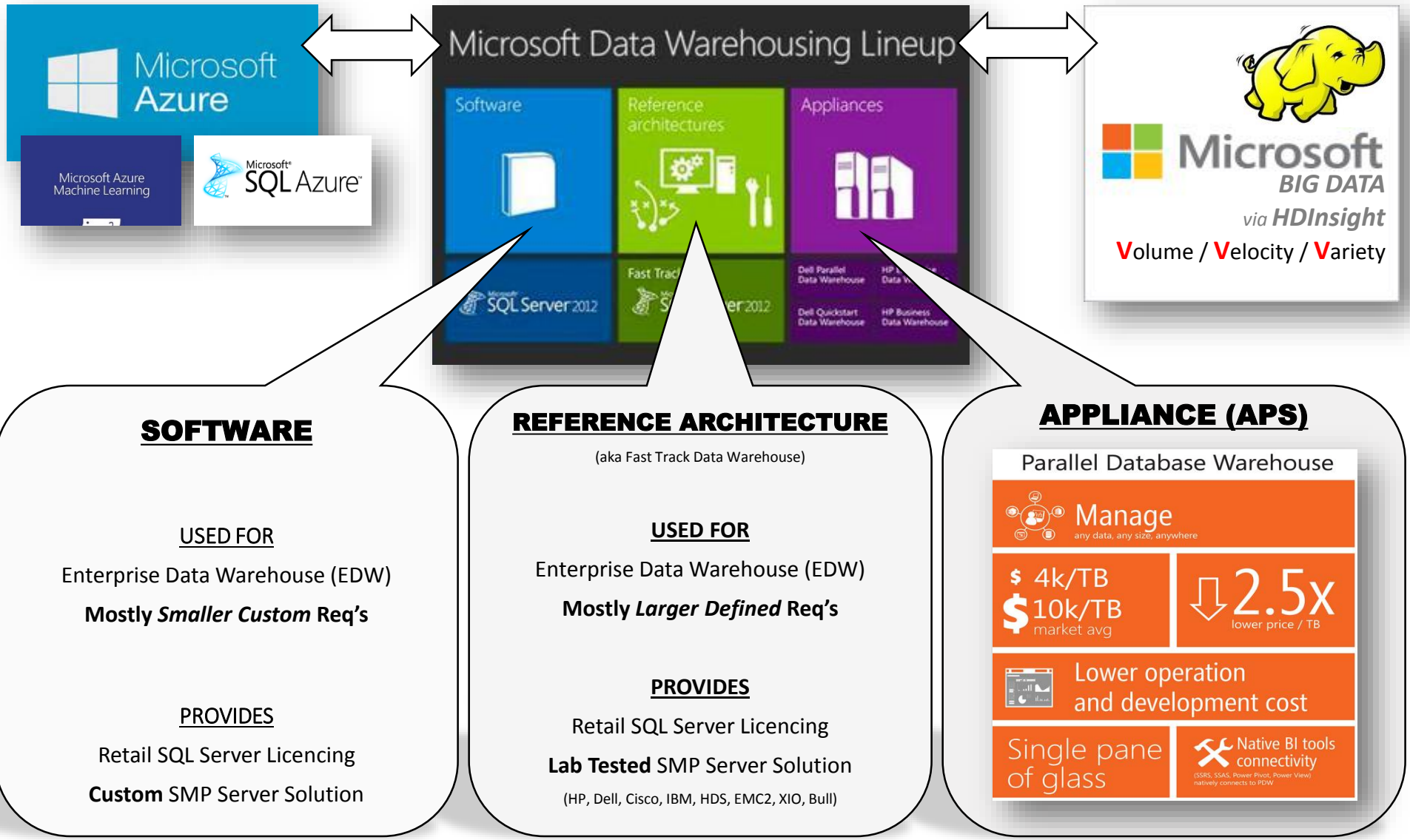
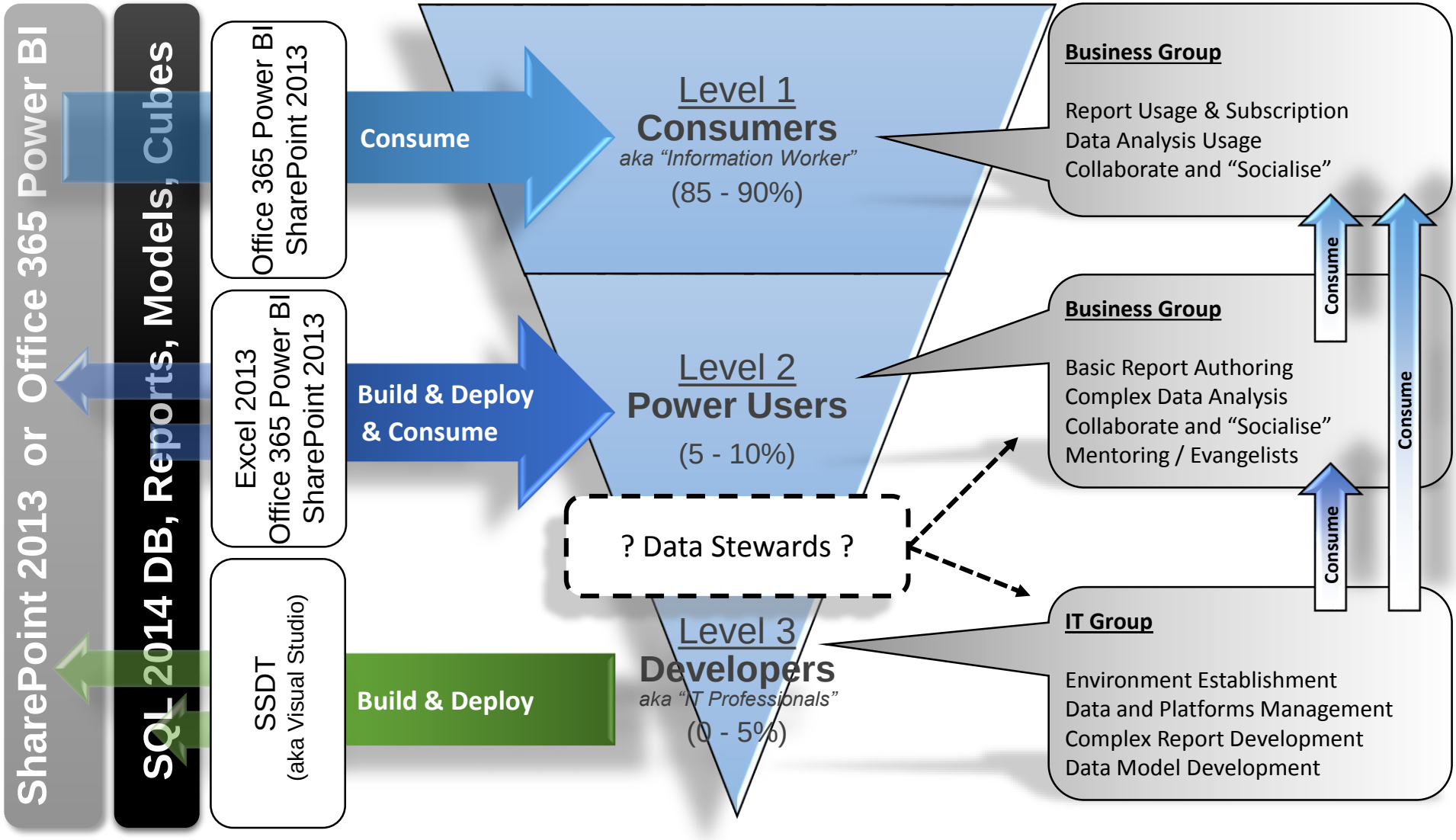

Microsoft Azure
Microsoft Azure Machine Learning
Microsoft SQL Azure
Microsoft Data Warehousing Lineup
Software
Reference architectures
Appliances
SQL Server 2012
Fast Track
Dell Parallel Data Warehouse
Dell Quickstart Data Warehouse
HP Business Data Warehouse
Microsoft BIG DATA
via HDInsight
Volume / Velocity / Variety
SOFTWARE
USED FOR
Enterprise Data Warehouse (EDW)
Mostly Smaller Custom Req's
PROVIDES
Retail SQL Server Licencing
Custom SMP Server Solution
REFERENCE ARCHITECTURE
(aka Fast Track Data Warehouse)
USED FOR
Enterprise Data Warehouse (EDW)
Mostly Larger Defined Req's
PROVIDES
Retail SQL Server Licencing
Lab Tested SMP Server Solution
(HP, Dell, Cisco, IBM, HDS, EMC2, XIO, Bull)
APPLIANCE (APS)
Parallel Database Warehouse
Manage
any data, any size, anywhere
$ 4k/TB
$10k/TB
market avg
2.5x
lower price / TB
Lower operation and development cost
Single pane of glass
Native BI tools connectivity
(SSRS, SSAS, Power Pivot, Power View) natively connects to PDW

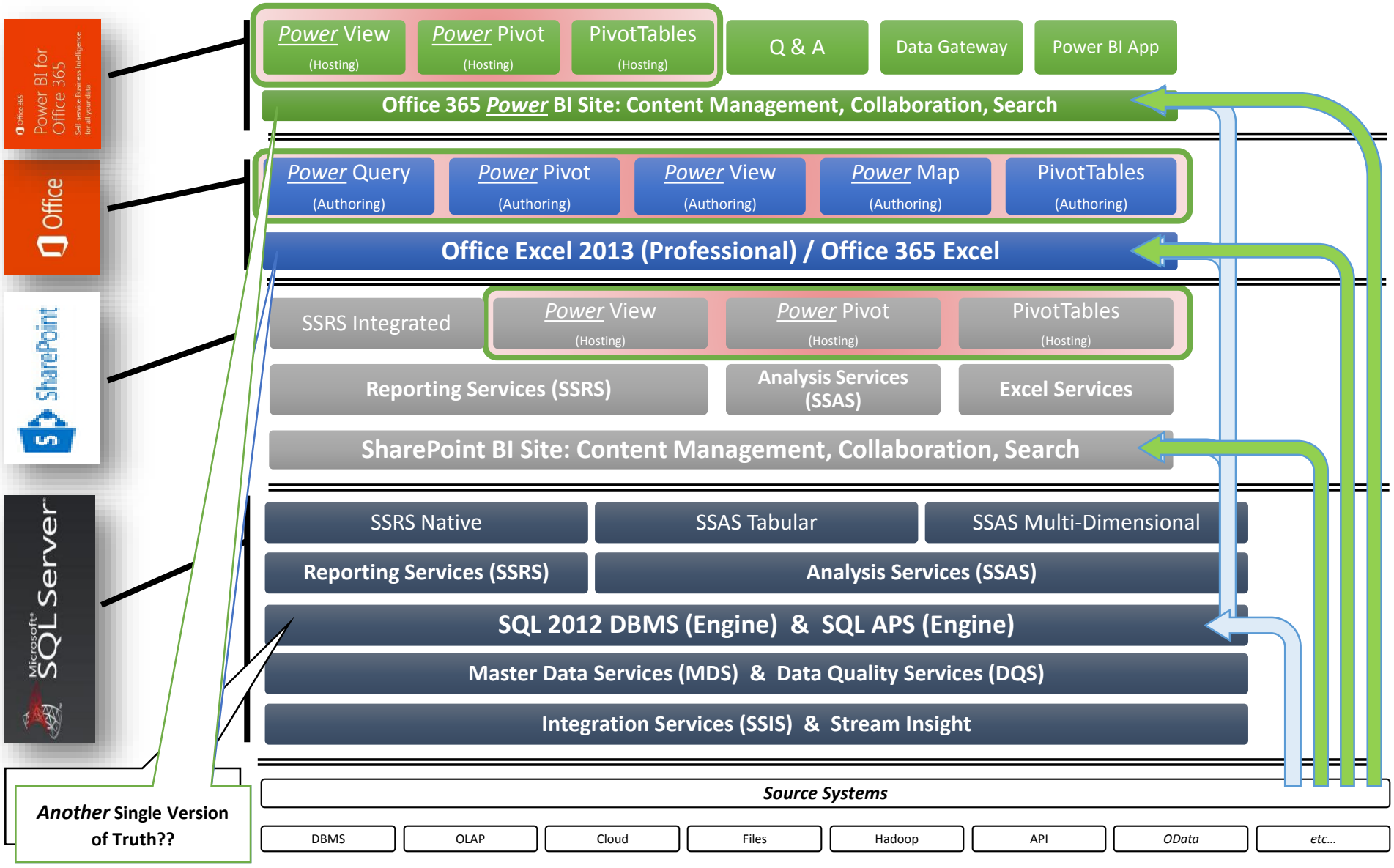
Who are the Typical Users?

Who uses DW / BI solutions, and what do they do?



Microsoft Core Products - Breakdown

What are the components of the Microsoft DW / BI offering?



So What Exactly is Power BI?

What are the Power BI products under Microsoft BI?

- **Power BI** is a **brand name** covering a **suite of Office 365 products**
- **Authoring: Excel Self Service BI Authoring** for **Power Users**
  1. **Power Query** (Data Discovery - Self Service SSIS / ETL)
  2. **Power Pivot** (Data Modelling - Self Service SSAS / Modelling)
  3. **Power View** (Visualisation Reporting - Self Service SSRS / Reporting)
  4. **Power Map** (Geospatial Reporting - Self Service SSRS / Reporting)
- **Sharing: Cloud-based** Server components for **hosting** BI content
  - **Power BI Site** for storing content
  - Natural Language Question and Answer (**Q & A**) feature for **Power BI** workbooks
  - **Data Management Gateway** to **refresh** cloud hosted **Power BI** workbook data
  - **Mobile BI App** functionality to access **Cloud-based Power BI** content

Power BI – Excel Professional vs. Office 365

What Power BI Products are in which Microsoft Product

- Where will I find the **Power BI** features I want to use?

Power BI Product	Excel (Professional) On Prem	Office 365 (Subscription) Cloud	SharePoint (Enterprise) On Prem
Power Query	Yes	Yes	No
Power Pivot	Yes	Yes Office 365 (250MB limit)	Yes (requires SQL Enterprise)
Power View	Yes	Yes Office 365 (HTML5)	Yes
Power Map	~~Yes?~~	Yes Excel	No
BI Sites	No	Yes	Yes
Q&A	No	Yes	No
Data Management Gateway	No	Yes	No
Mobile Power BI App	No	Yes	No

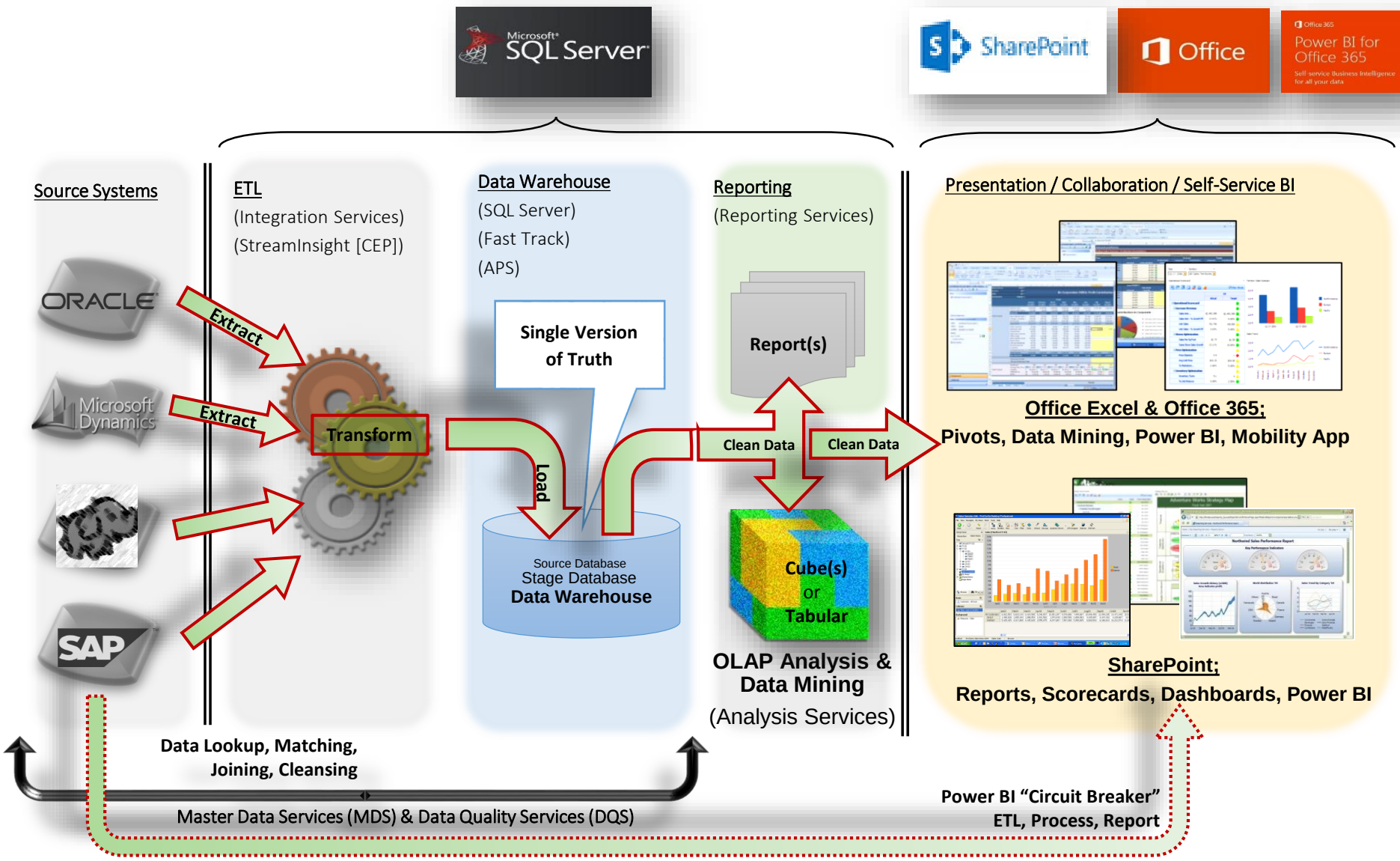
Jun 2014 +

Only in Preview.

Full product in next Office version.

Traditional "End-to-End" Enterprise Architecture

How are the Microsoft BI technologies deployed?



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SharePoint Business Intelligence Portal / Site

What is it, and how does it work?

- **What is SharePoint?**
  - A **suite** of **collaboration** based **portals** for managing business **content**, **security**, **workflows**, **processing** and **applications**
  - SharePoint BI Portal (aka "**Insights**") is a **pre-configured site** within SharePoint dedicated to the **specific deployment** and **hosting** of **BI related content**

- **What are the benefits of Sharepoint?**
  - The BI Portal comes as part of a SharePoint licence (**Enterprise Cal**)
  - **Very well** adopted within the industry
  - Provides central "**launch pad**" to manage BI related **content** and **collaboration**

Excel 2013 & SharePoint – Pivot Tables

What is it, and how does it work?

- Excel feature (**any version**), available for **free**
- Very **mature** and **established** feature of Excel
- Later Excel versions have very **advanced** Pivot Table functionality
- *So, what can you do with it?*
  1. "Slice and dice" data stored within Excel or SQL Analysis Services
  2. Create advanced data tables, charts, slicers and perform adhoc analytics on data sets
  3. Great for creating visual dashboards that can be loaded into SharePoint for viewing
- A **common** method of performing "**Self Service**" analytics on the **client desktop**
- Can deploy **workbooks** into SharePoint & O365 Power BI for **Collaboration**

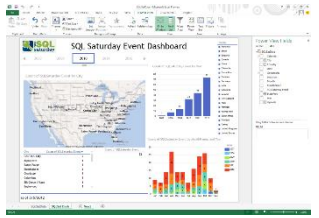
SharePoint – Reports & Report Builder (SSRS)

What is it, and how does it work?

- SQL Reporting Services **feature** available on **SSRS portal** or within **SharePoint**
- Comes free with a **valid licence** of SQL Server (Reporting Services)
- **Self-Service** tool pitched to the business **Power User** for creating reports
- *So, what can you do with it?*
  1. Fully featured GUI interface for creating Reporting Services reports
  2. Has several Wizard driven features to ease the creation of reporting content
  3. Test developed reports within GUI before deployment to SSRS or SharePoint Portal
- Similar in functionality to that of **Visual Studio** (**SSDT**) – but **not as advanced**
- A **common** method of performing "**Self Service**" Report Development on the **client desktop**

Excel & SharePoint & O365 - Power View

What is it, and how does it work?



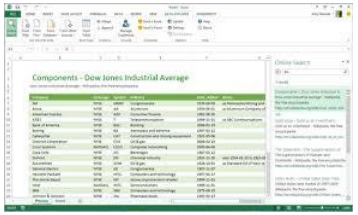
- Excel 2013 add-in, **natively installed with Excel**
- Also part of **SQL Server Reporting Services Add-In** for **SharePoint**
- **Power View** in **Excel** or **SharePoint** needs **Silverlight** on the **browsing machine**
- **Power View** can be integrated in **O365 Power BI** for sharing (can use **HTML5**)
- *So, what can you do with it?*
  1. **Visualise data** in very rich, interactive and flexible ways **within Excel (or SharePoint)**
  2. **Visualisations**; Column, bubble, time series, maps, tables, cards, slicers, filters… the list goes on…
  3. **Data**; Tabular data (i.e. PowerPivot, SSAS Tabular) & Multi-Dimensional Data (i.e. SSAS MD)
  4. Impress your friends…
- Not as feature rich as Excel Charts (i.e. trendlines, dual axis, multi-chart areas, etc..)

Supported Since…

SQL Server 2012 SP1 CU4

Excel - Power Query

What is it, and how does it work?



- Excel 2013 add-in, **free** to download, **free** to use

- *So, what can you do with it?*

  1. Discover, combine, cleanse, transform, refine, etc. data for analysis **within Excel**
  2. **Data**; Relational, Files, ***OData***, Web, Hadoop, Azure Marketplace, Facebook, Active Directory, etc..
  3. Store **Extract Transform Load** (ETL) steps and easily, quickly and consistently **refresh** data
  4. Write **custom code** in the **Power Query Formula Language Specification** (called "M")

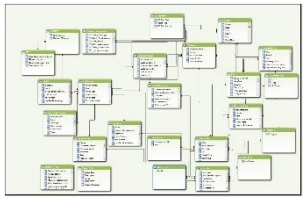
OData is the web-based equivalent of ODBC, OLEDB, ADO.NET and JDBC

- Can save queries into **Office 365 Power BI** site for sharing query content

- Is a form of "**Self Service" Personal BI** *and* **Extract Transform Load (ETL)**

Excel & SharePoint & O365 - Power Pivot

What is it, and how does it work?



- Excel 2013 add-in, **natively installed with Excel**
- An in-memory analytical engine designed for managing large scale data sets

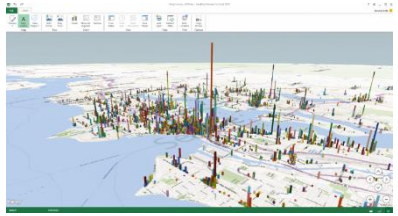
xVelocity Engine (Vertipaq)

Same as SSAS Tabular Models and SQL Column Store Indexes

- *So, what can you do with it?*
  1. Combine, cleanse, transform, refine, etc. data for analysis **within Excel**
  2. **Data**; Relational, Files, ***OData***, Web, Hadoop, Azure Marketplace, etc.
  3. Write **custom code** in the **Power Pivot Formula Language Specification** (called “DAX”)
- Can be integrated within **SharePoint** and **O365 Power BI** for hosting Models
- Is a form of “**Self Service” Personal Analysis Services**

Excel - Power Map

What is it, and how does it work?



- Excel 2013 add-in, **free** to download, **free** to use

- *So, what can you do with it?*

  1. Plot **geography data** visually (columns, heat, bubble) on a **Bing Maps** 3D world globe **within Excel**
  2. Can also visualise **data over a timeline / timeframe** present within the data
  3. **Data**; Tabular data within Excel (i.e. Tables, PowerPivot, etc.)
  4. Impress your friends… ***but unfortunately***

No custom spatial maps

No export, distribution, etc.

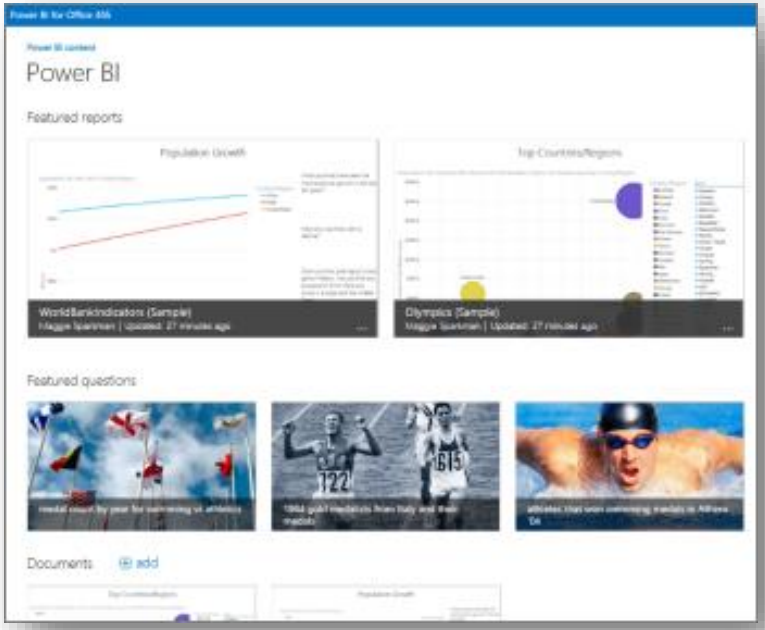
No SharePoint collaboration

No O365 collaboration

- Is no longer in preview, full version available under **Office 365** subscription **only**

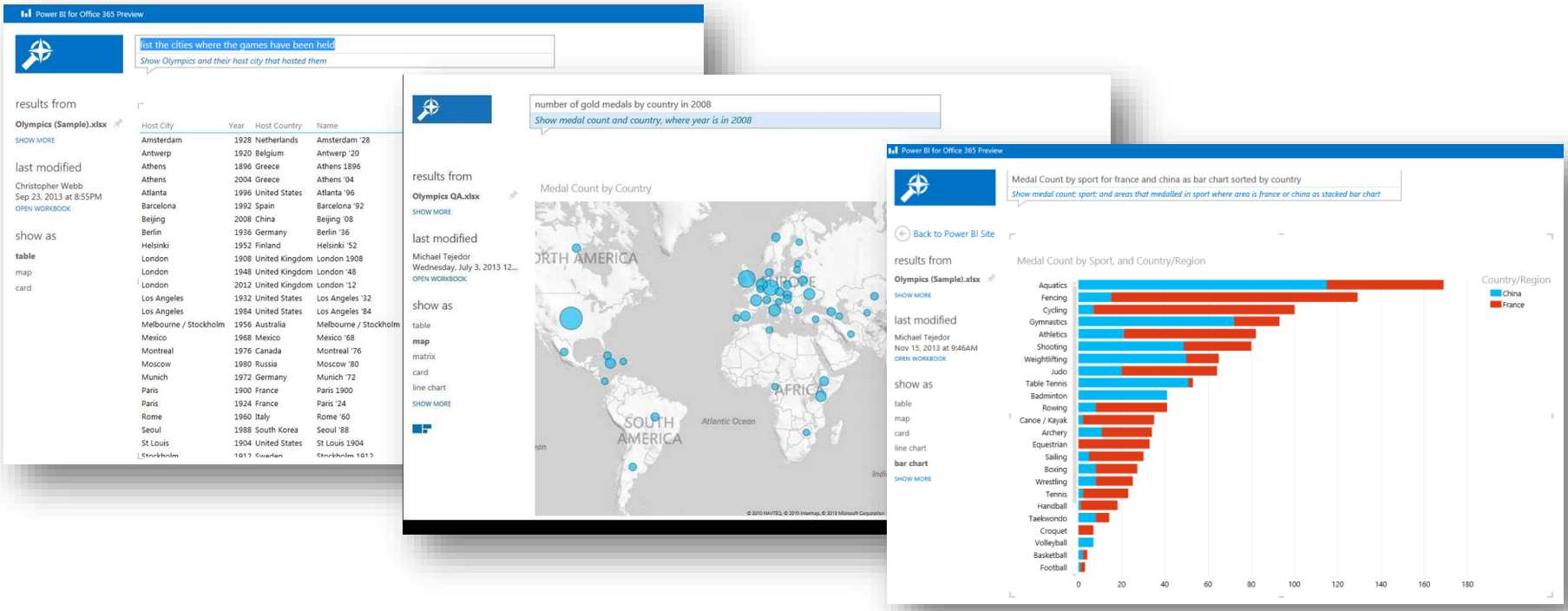
Power BI for Office 365
Power BI Sites

- **Power BI Sites**
  - The **Power BI** sites **application** *extends* the **SharePoint Online** site
  - Provides a **robust** & **dynamic** location to share and find **Excel workbooks**
  - Enables a **visual** & **interactive** view tailored specifically to **Power BI content**
  - Essentially serves the **same purpose** as a BI Site on **SharePoint Enterprise**
  - Is accessible via **client browser** or via **Power BI Mobile App**



Power BI for Office 365
Power BI Q&A

- **Power BI Q&A**
  - Use **English natural language** to find answers in your own data
  - Presents your answers in the form of **visualisations**
  - As you type a **question Power BI** decides the **best visual** to display the **answer**
  - The **visualisation** changes **dynamically** as you modify the **question**



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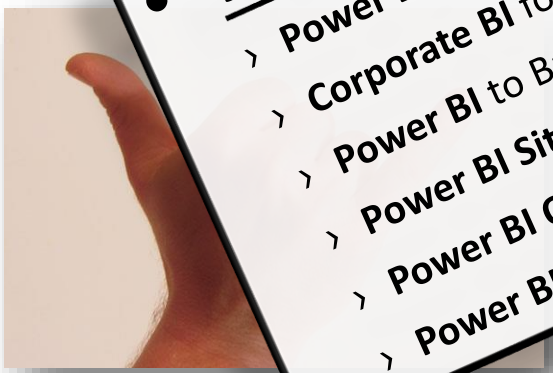
When to use Power BI vs. Corporate BI?

What are the ideal deployment scenarios for Power BI?

- **MICROSOFT CORPORATE BI**
  - **Maximum Developmental** Control Required (i.e. naming, formatting, etc)
  - **Maximum Data Control** Required (i.e. **Single Version of Truth**)
  - **Large** Data Volumes are expected
  - **Complex** Data requirements (i.e. SCD [Type II], encryption, etc)
  - **Data Mining** / Predictive Analytics Requirements
  - **Master Data** & Data Quality Management Requirements
  - **Budget** and **IT Expertise** already Exist

- **HYBRID Approach to Microsoft BI**
  - **Power BI** can be used **in its own right** – or as an **extension** to **Corporate BI**
  - **Corporate BI** for Large Data Sets and Maximum Design control
  - **Power BI** to Business Users for leveraging **Corporate BI Data** (as SVOT)
  - **Power BI Sites** for sharing content and collaboration
  - **Power BI Q & A** via Cloud using **Corporate BI Data**
  - **Power BI** Mobility Solution via Cloud



MICROSOFT POWER BI

- Limited Budgets and/or IT Skills
- Single Version of Truth not important
- **Data Sovereignty** not important
- **Small** Data Volumes are expected
- **Natural Language** Queries via Q & A
- **BI Mobility** required (via HTML5)
- Good for **Prototypes** for **Corporate BI Solutions**

Session Summary

What have we discussed today?

- ✓ **Provided a definition of Business Intelligence (BI)**
- ✓ **Discussed the Microsoft BI positioning, vision and offering**
- ✓ **Provided an overview of Microsoft BI component "Stack"**
- ✓ **Provided a typical architecture for an end-to-end MS BI solution**
- ✓ **Discussed how end-users interact with BI**
- ✓ **Demonstrated the functionality of "self-service" BI components**
- ✓ **Reviewed what is on the horizon for MS BI in the next SQL version**