

Managed Self-Service BI & Data As A Service

Triangle SQL Server
User Group
1/15/2013

Melissa Coates



About Melissa

- Business Intelligence developer based in Charlotte, NC
- Architect with Intellinet
- Specialist in BI and Data Warehousing solutions using the Microsoft platform



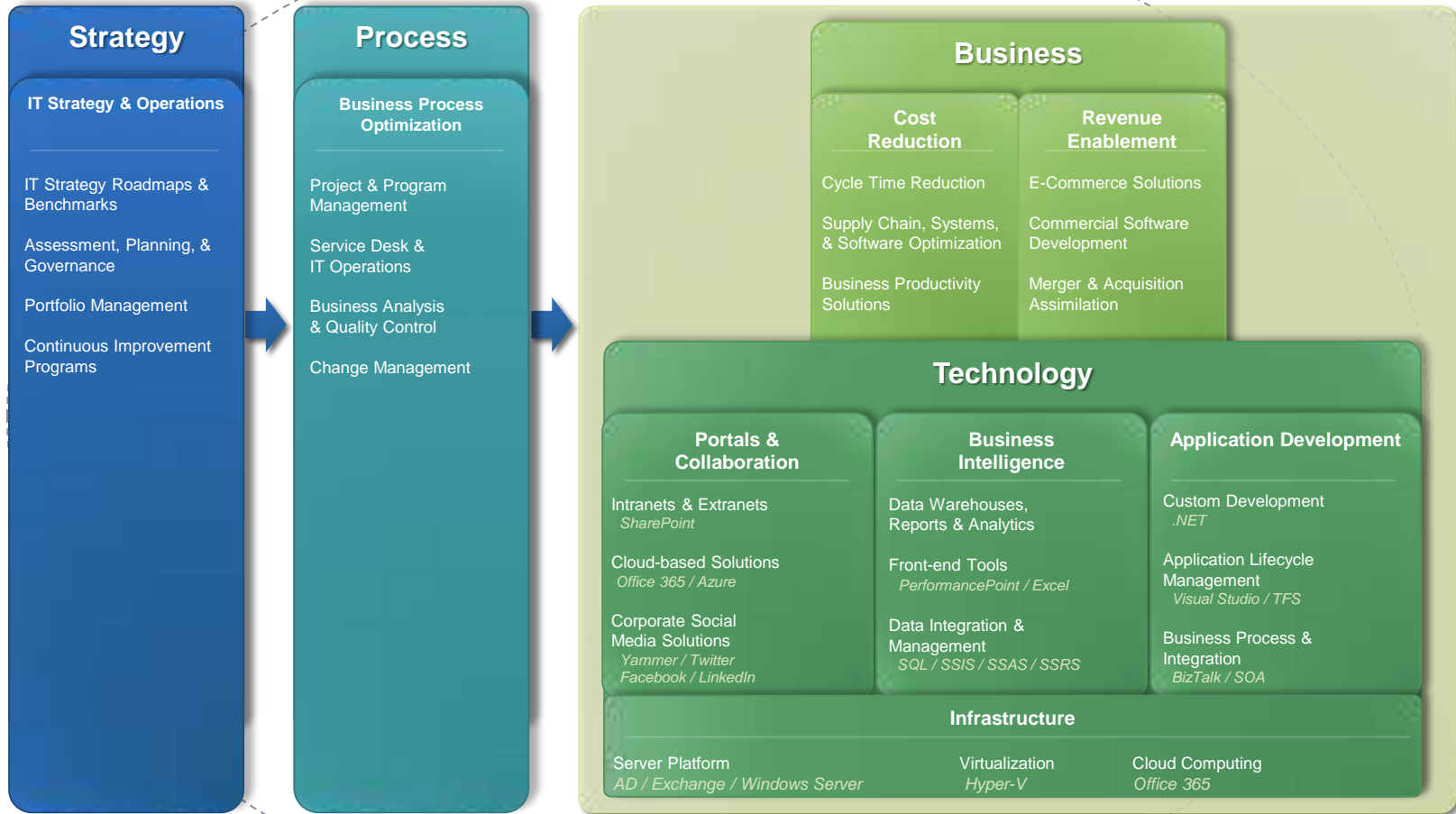
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Twitter: @sqlchick

About Intellinet

Intellinet is a **management consulting**
and
Microsoft-centric technology services firm.



Define | Align | Implement | Administer | Govern

<http://www.intellinet.com>

2012 MICROSOFT
PARTNER OF THE YEAR
WINNER



Agenda



- Introduction to Managed Self-Service BI
- Overview of Microsoft Self-Service components
 - Demo: PowerPivot | Power View | PowerPivot Gallery
- Techniques to Monitor, Secure, & Manage the “PowerPivot for SharePoint” environment
 - Demo: PowerPivot Management Dashboard | Usage Analysis
- Self-Service Data Management Tools Coming Soon
- Wrap-up: Keys to Success with SSBI

Not in scope:

Installation & configuration of PowerPivot for SharePoint

INTRODUCTION
TO
“MANAGED”
SELF-SERVICE BI

Defining Self-Service BI

Commonly thought of:

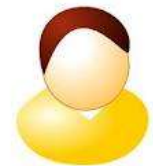
“Empower users to create their own reports so users get what they want without having to ask IT.”

Gartner definition:

“End users designing and deploying their own reports and analyses within an approved and supported architecture and tools portfolio.”



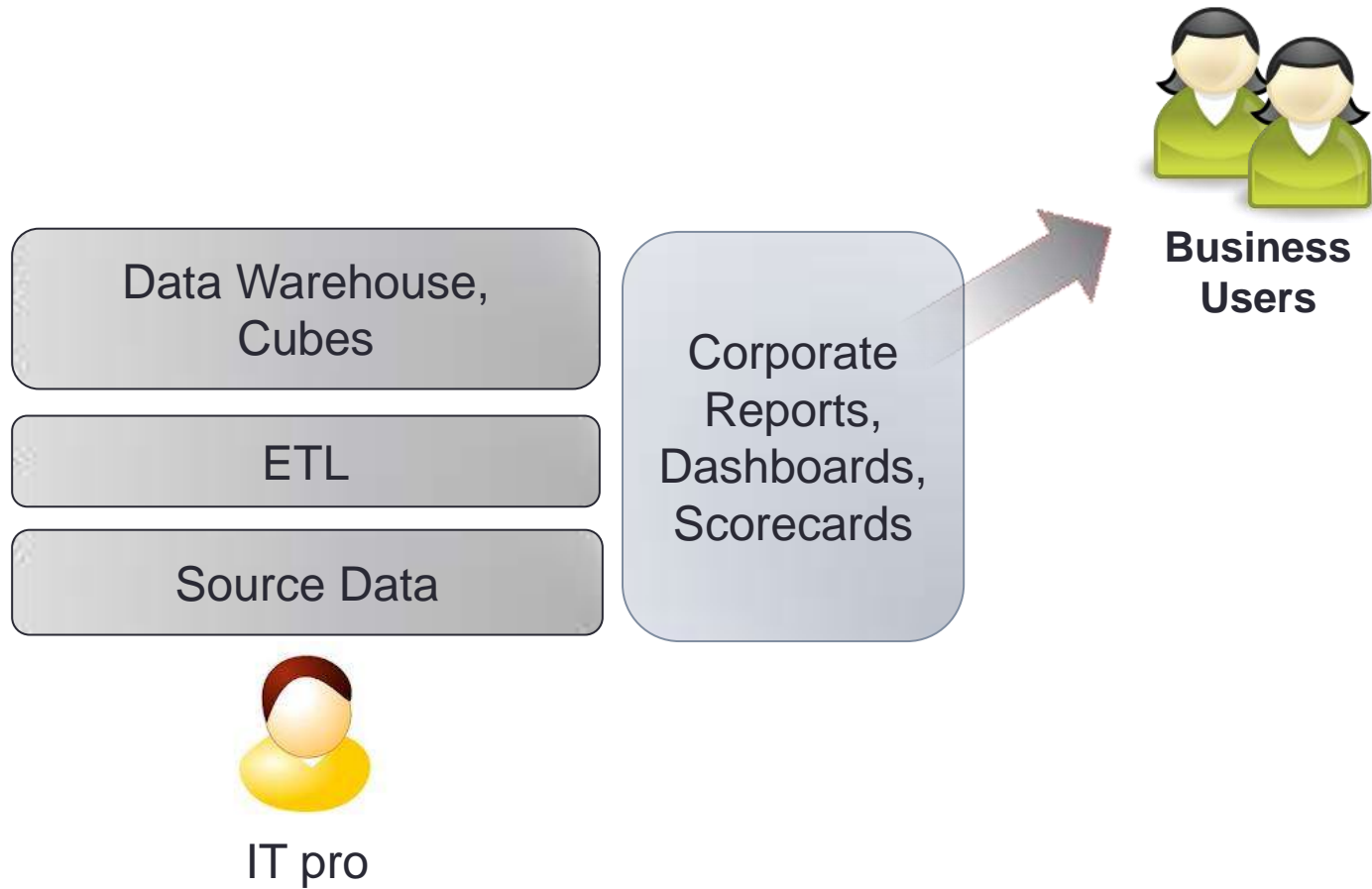
Business
Users



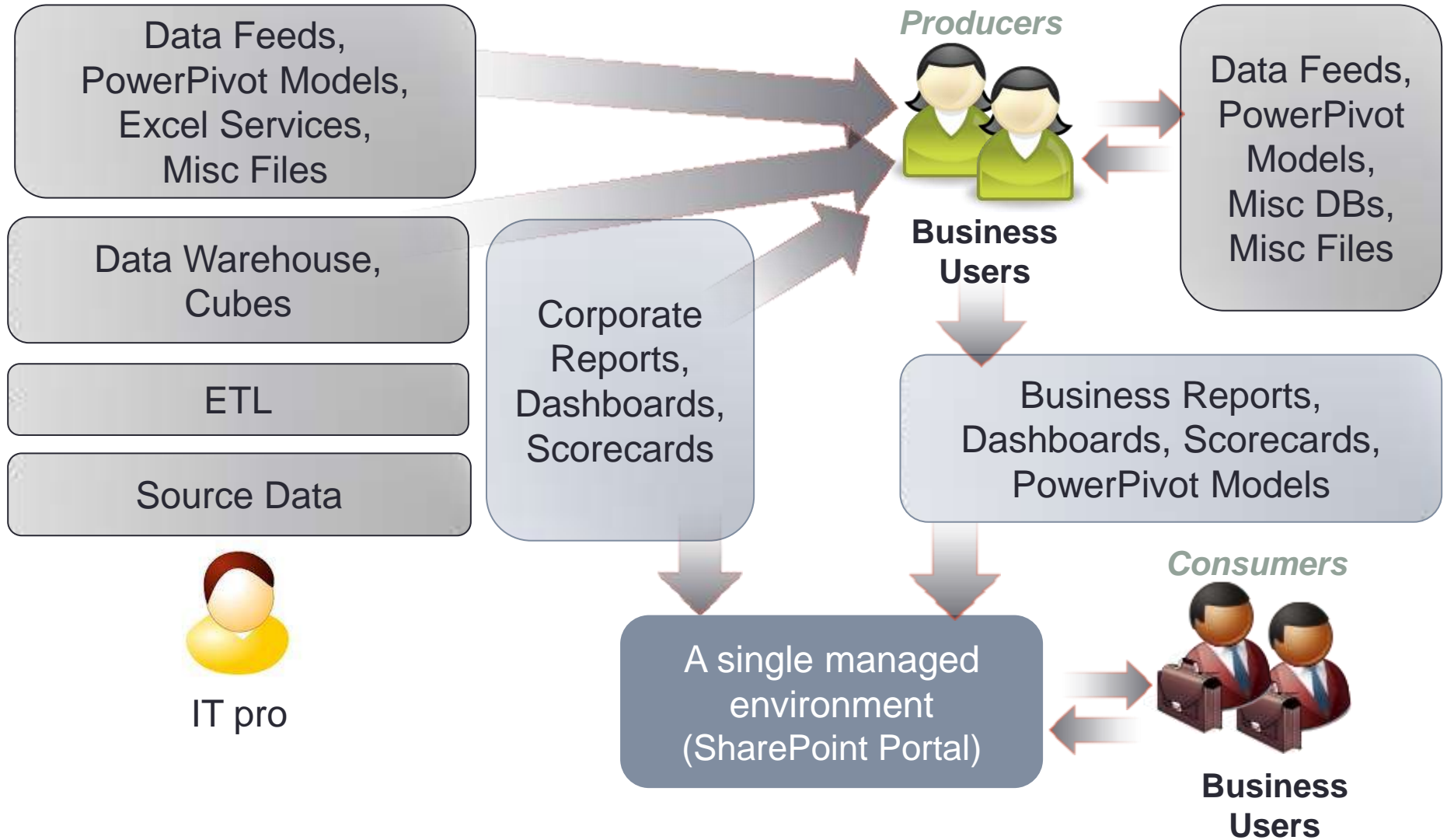
IT pro

Business & IT must work together!
This is why it's called **Managed** Self-Service BI.

Corporate BI



Corporate BI + Self-Service BI



Needs driving Self-Service BI



Productivity / speed of delivery

- Long development cycles for IT to develop ETL, DW, OLAP
- IT backlog of requests
- Business decision may need to be made quickly

Data exploration / unpredictable ad-hoc analysis

- Requirements aren't always known or predictable
- Analysis may not justify augmenting existing BI solution

Prototyping for a Corporate BI solution

- Convey requirements
- Reduce development cycles

Self-Service BI Projects

Good candidates for Self-Service BI

- Small projects
- Infrequent or one-time analysis
- Rarely used data
- Unpredictable analysis
- Prototyping

Poor candidates for Self-Service BI

- Large sets of data
- Incremental data loads are required
- Refresh of data more often than once per day is required
- Complex requirements
- Row-level security is required



Challenges with Self-Service BI



Training of data producers on data & tools

- Need to understand the data and how to use the tools

Adequate IT support

- Some IT staff have the “users can’t handle it” syndrome
- Less of an IT backlog for report development
- Different demands: data, training, support, documentation

Access of questionable data sources

Non-standard data definitions & calculations

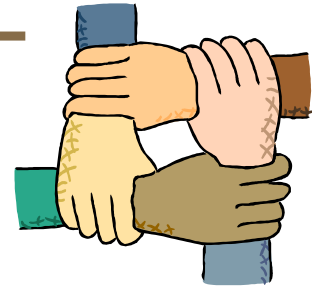
Duplication of effort

Potential for chaotic, unorganized environment

Lack of testing & validation

Lack of governance & change management

Working Together: Business & IT



People > Process > Technology

- People: Mutual respect & understanding
- Process: Achieving balance between flexibility & rigidity
- Technology: Insight to activities & opportunities

Utilization of business expertise

- Validation; Active & Passive Prototyping

Liaisons between Business & IT

- Technical SMEs within business units
- Support & training within business units

Personal BI > Team BI > Corporate BI

Support from influencers, evangelists & executives

“Managed” Self-Service BI

Self-Service BI Tools

Producer:
Data Analysts -or- IT

- PowerPivot
- Excel with Excel Services
- Power View
- Report Builder

Corporate BI Tools

Producer:
IT

- PerformancePoint
- Reporting Services
- Visio Services

Delivery:
SharePoint Portal

Managed, Monitored, Secured by:
IT Staff

OVERVIEW OF MICROSOFT SELF-SERVICE BI TOOLS

PowerPivot

Add-in to Excel 2010 and 2013

In-memory solution for Self-Service BI data modeling needs

Based on xVelocity (Vertipaq) column-store indexes

Large volumes of data

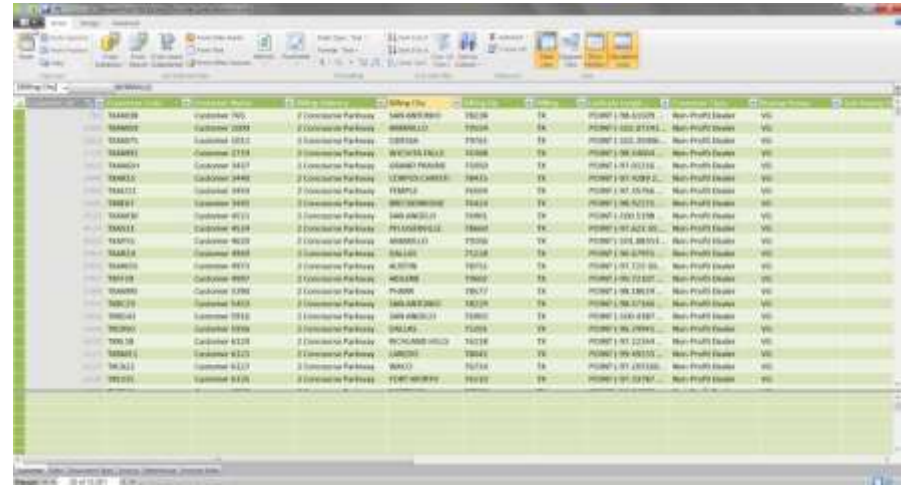
Create “mashups” of data

Data is embedded

Introduces DAX expressions

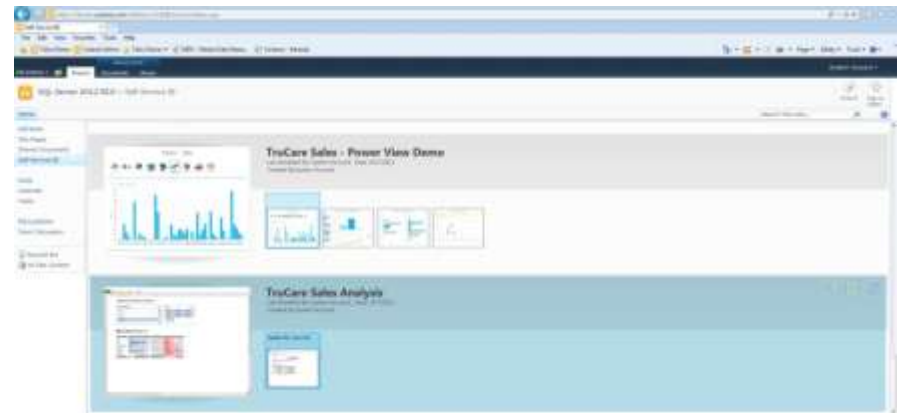
Schedule data refreshes in SharePoint

Can do visualization in familiar Excel environment, or another tool



The screenshot shows an Excel spreadsheet with a large table of data. The table has multiple columns, including what appears to be a date column, a category column, and several numerical columns. The data is organized in a grid format, typical of a data table in Excel.

PowerPivot for Excel



PowerPivot for SharePoint

Report Builder

Tool of choice for pixel-perfect, fully formatted reports

Printing, exporting

Expressions

Subscriptions & data alerts

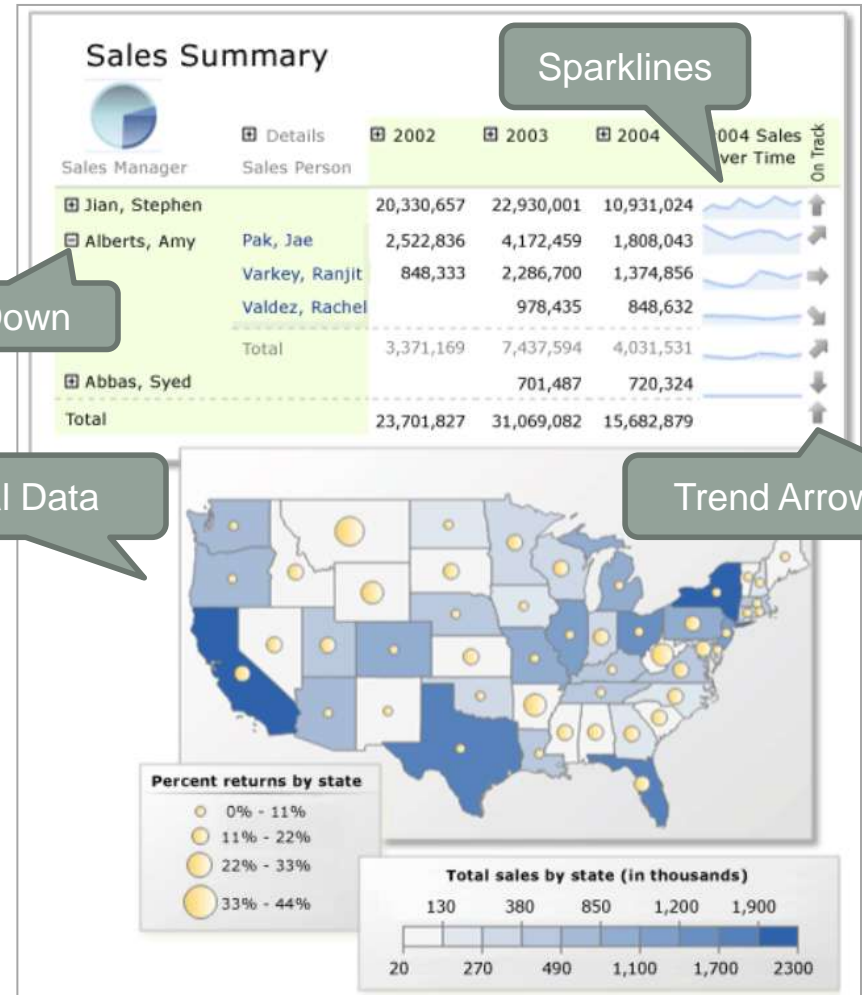
Mature, significant capabilities

Two design environments produce a the same format:

- Report Builder (a click-once application - for business users)
- Report Designer in Visual Studio (SQL Server Data Tools integrated with source control - for BI Pros)

Support for many different data sources

Supported on Windows phones and iPhone



Power View

Visual & interactive

Unique data discovery

Presentation-ready (like PPT slides)

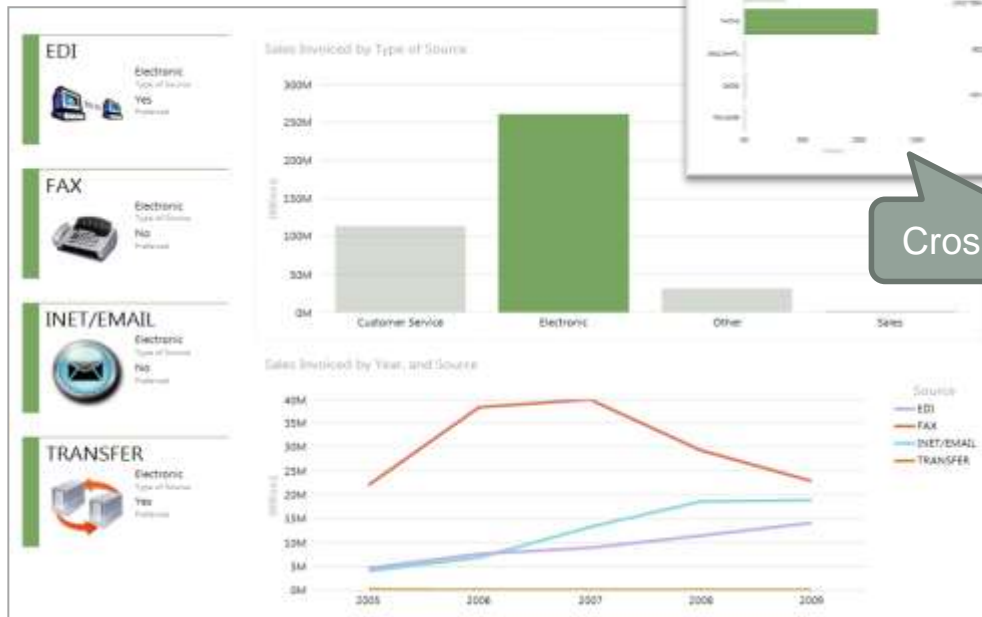
Silverlight-based

Requires a Tabular source:

- PowerPivot for SharePoint or
- Tabular SSAS model

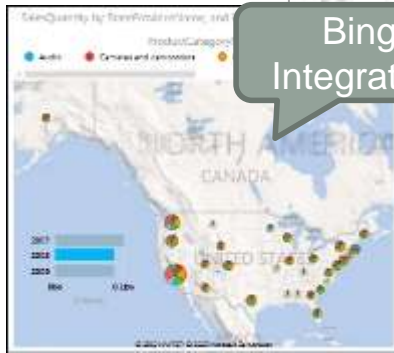
Two design environments:

- SharePoint (requires Reporting Services add-In)
- Excel (2013 only)

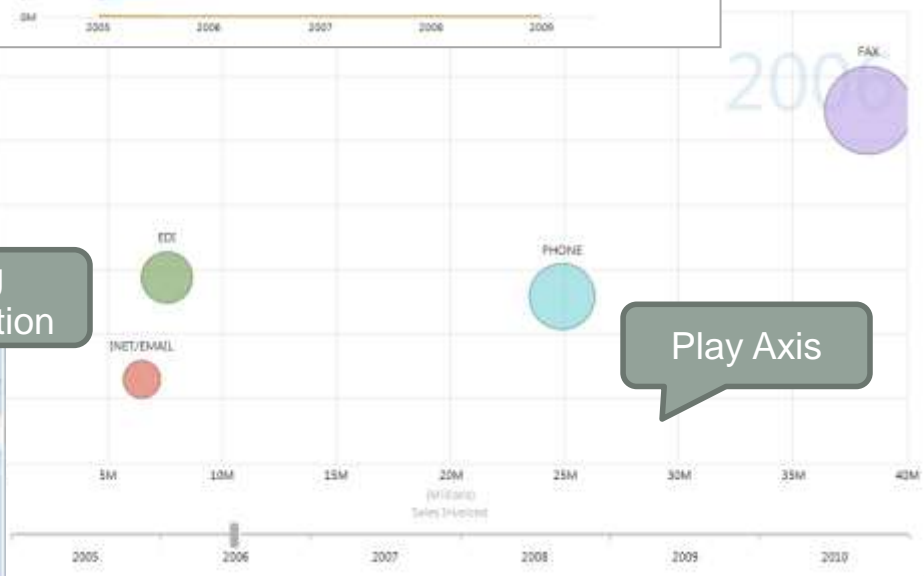


Cross-Filtering

← SSAS
Multi in
CTP



Bing Integration



Play Axis

Excel Services

- SharePoint Service to display workbooks on Web
- Reduces emailing
- Calculations performed on server
- Security, versioning, workflow
- Share an entire workbook or sections
- Integrated with PowerPivot for SharePoint
- Supported on Windows phones and iPhone



Quick Explore

EXPLORE HOME CARE

- Billing State
- Billing Zip
- Billing Zip3
- Branch Name
- Buying Group Name
- Customer Cat Name
- Customer Class Name

Drill To: Billing State

Trend Chart: Calendar Date Hierarchy

PowerPivot Gallery

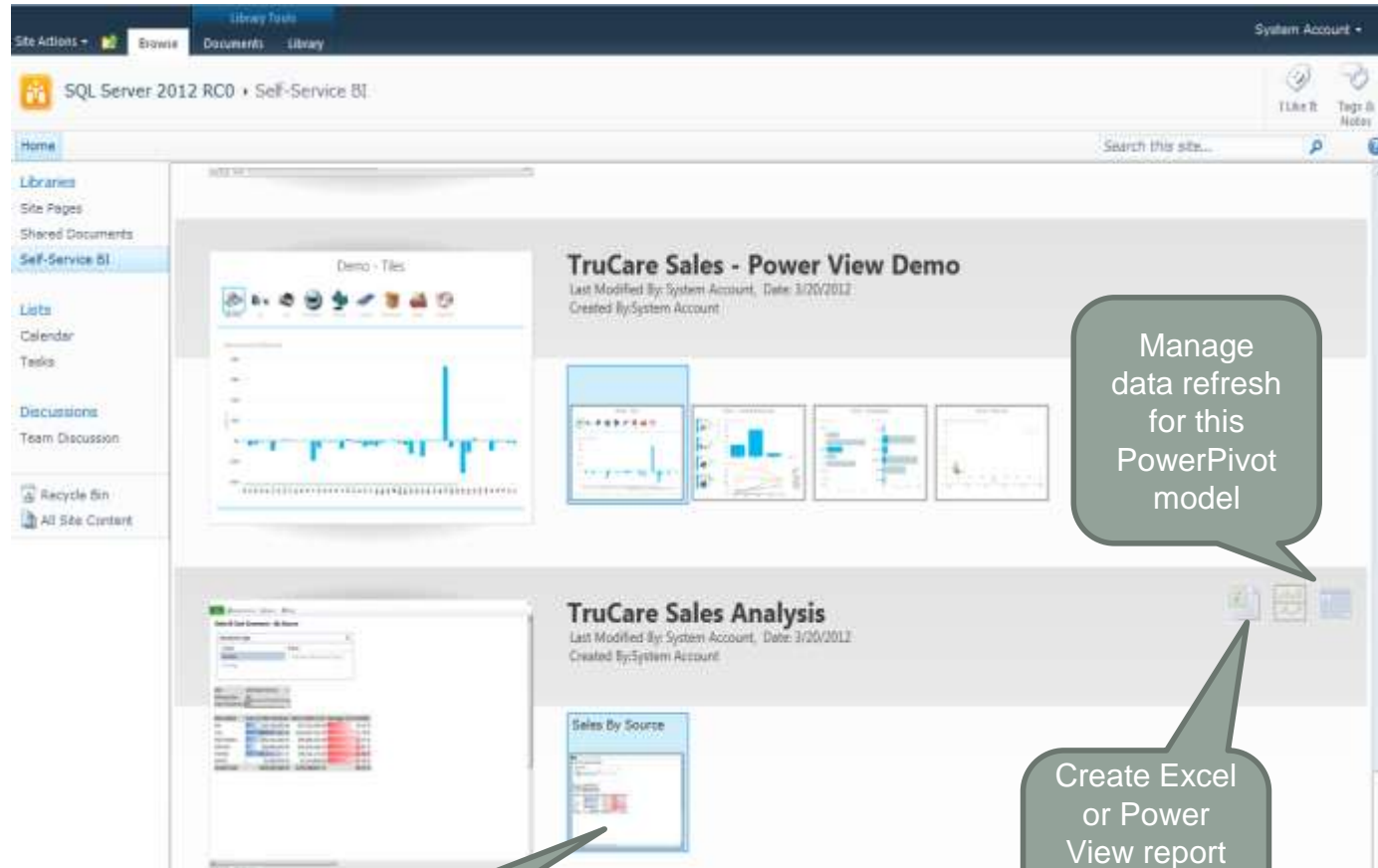
Specialized
SharePoint
document library

Silverlight-based

Thumbnail
previews of
PowerPivot report
contents

Manage data
refreshes for
PowerPivot
workbooks

Creation of Power
View and Excel
reports



Manage data refresh for this PowerPivot model

Create Excel or Power View report using this PowerPivot model as data source

Thumbnail previews contents of report

Demo

Create Model with PowerPivot

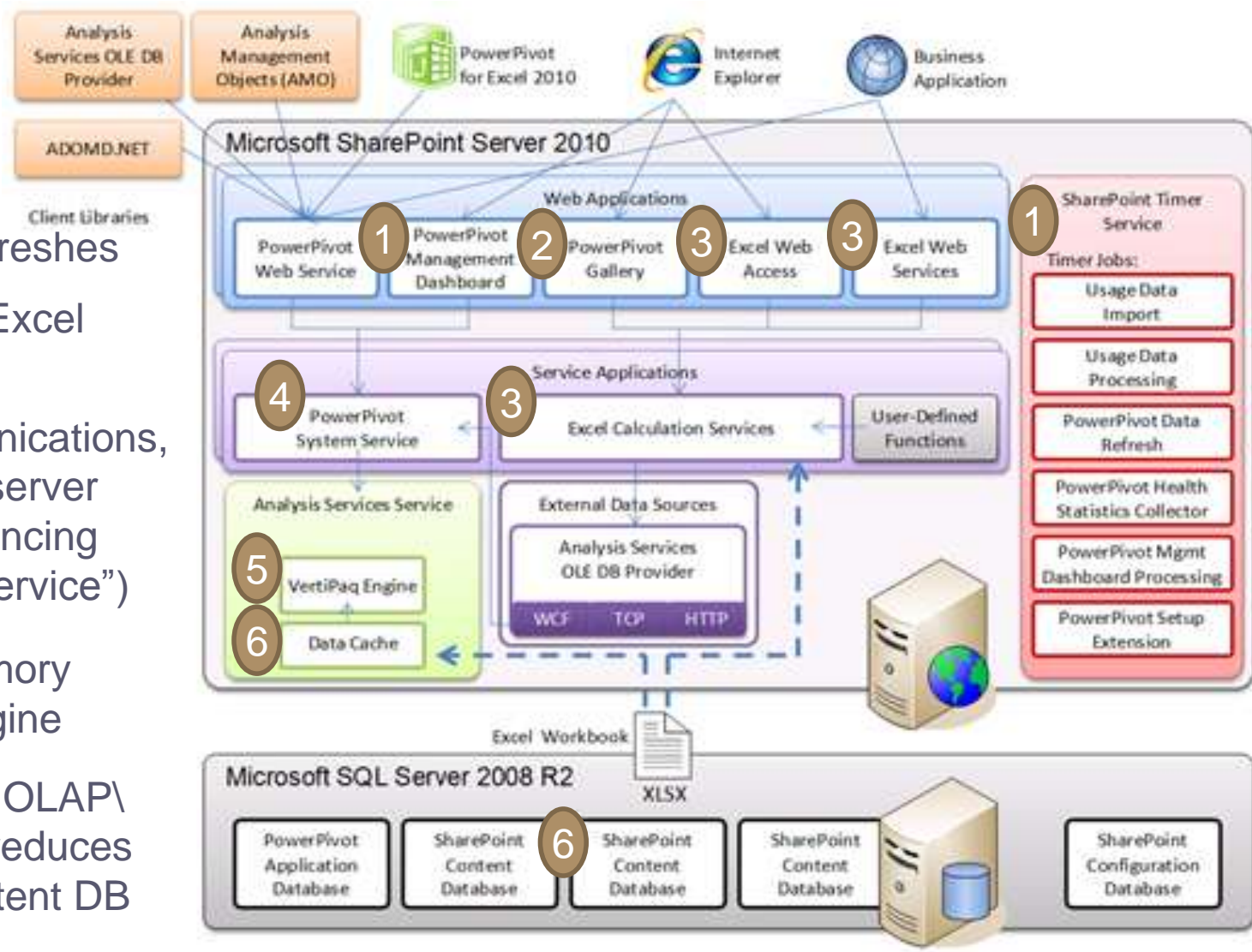
Publish Model to PowerPivot Gallery

Visualize Data with Power View

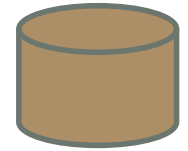
TECHNIQUES TO
MONITOR, SECURE, &
MANAGE THE
“POWERPIVOT FOR
SHAREPOINT”
ENVIRONMENT

PowerPivot for SharePoint

- 1 Admin Mgmt; refreshed by timer jobs
- 2 Stores reports & models; data refreshes
- 3 Integrated with Excel Services
- 4 Handles communications, data refreshes, server health, load balancing (aka "Mid-Tier Service")
- 5 xVelocity in-memory columnstore engine
- 6 Cache stored in OLAP\ Backups folder reduces # of trips to Content DB



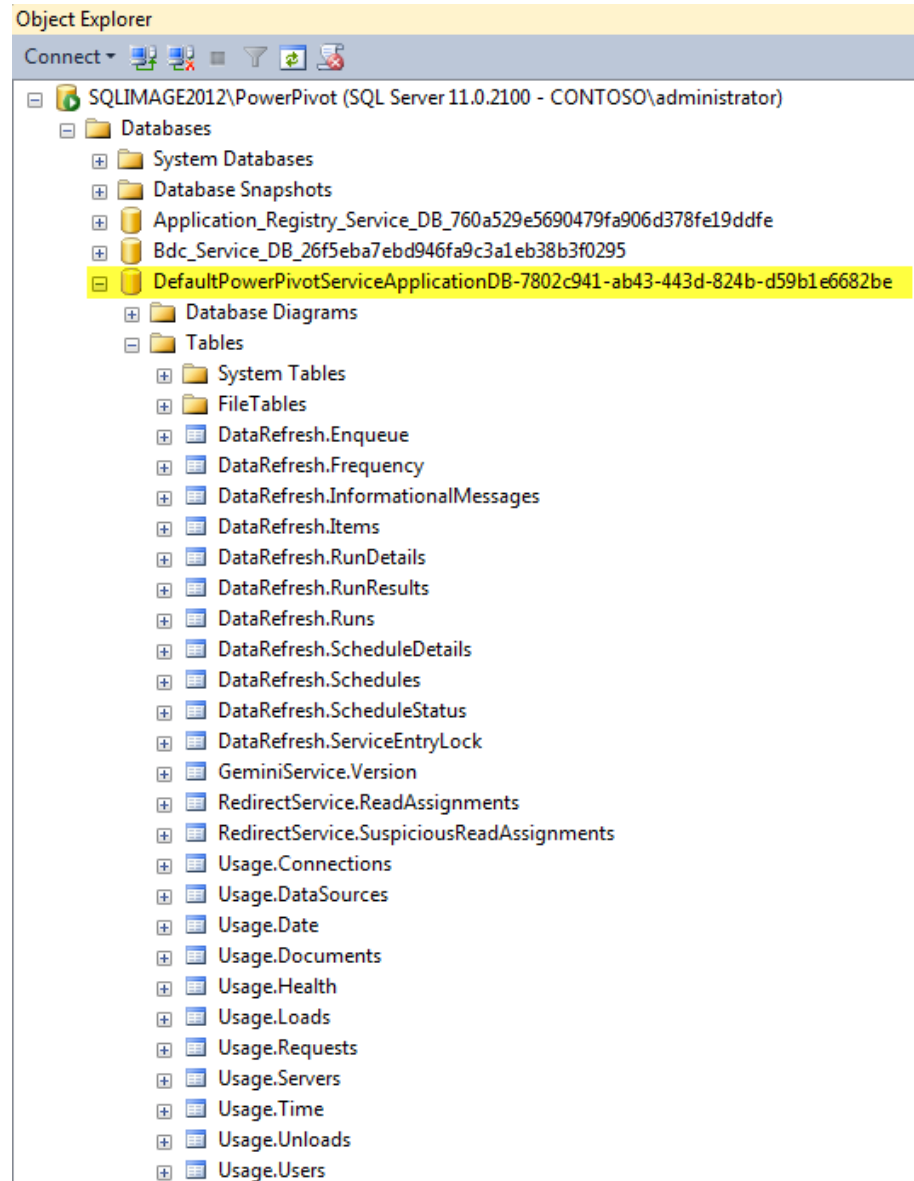
Relational PowerPivot Database



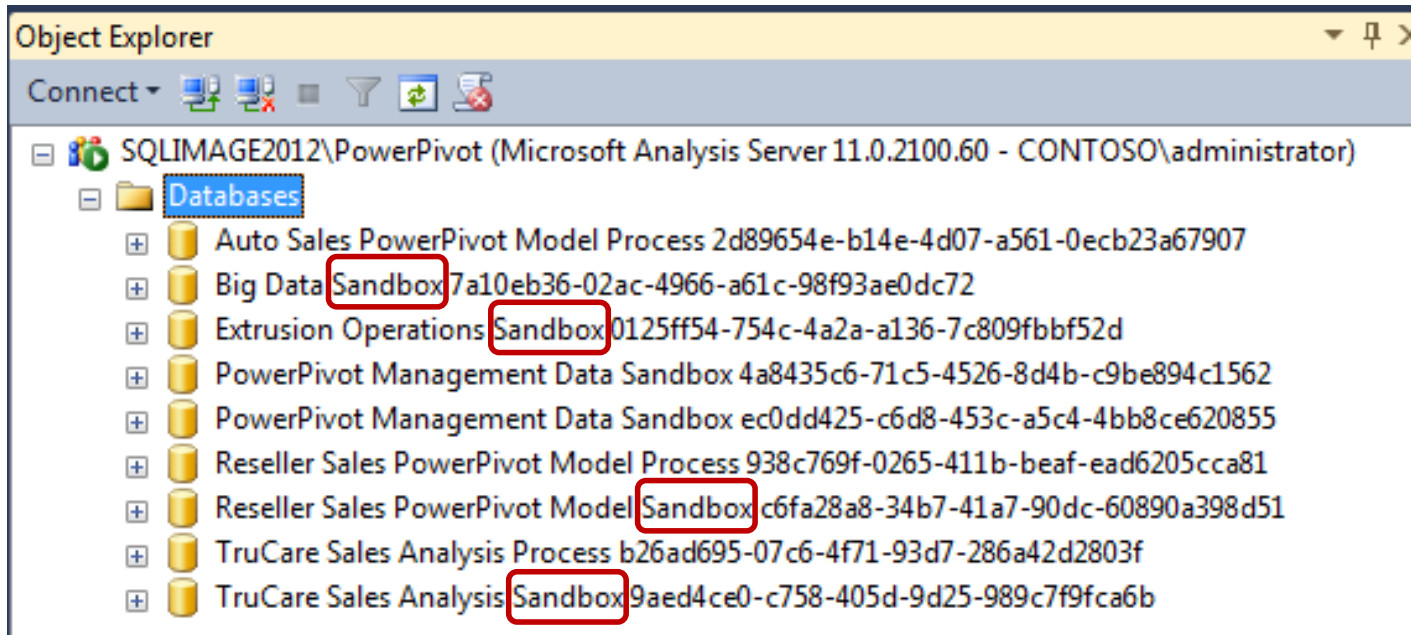
Default
PowerPivot
Service
Application DB:

Contains data
refresh
schedules &
usage data.

The actual
PowerPivot
data, however,
is stored in the
SharePoint
Content DB.



SSAS Instance for PowerPivot



If “Sandbox” is displayed in SSMS: The workbook is actively loaded to memory

User uploads workbook → Added to Content DB

Query issued → Data loaded into memory

SSAS Instance for PowerPivot



User uploads workbook → Added to Content DB

Query issued → Data is loaded into memory

- Workbook is kept in memory for 48* hours (if no memory pressure & if no data refreshes are executed)
- After 48* hours, data is unloaded to the cache where it is kept for another 72 hours
- If 120 hours* passes with no activity, cache file is physically deleted

PowerPivot Settings

(General Application Settings Central Admin):

Keep Inactive Database in Memory(in hours)

Specify the number of hours to keep an inactive PowerPivot database in memory to service new requests.

Valid value: >=1 hour, defaults to 48 hours (2 days)

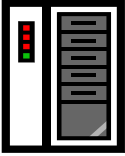
Keep Inactive Database in Cache (in hours)

Specify the number of hours after which an inactive PowerPivot database is deleted from the cache. This value must be greater than the 'Keep Inactive Database in Memory' setting.

Valid value: >=1 hour, defaults to 120 hours (5 days)

Cache files stored: \Microsoft SQL Server\MSAS11.PowerPivot\OLAP\Backup

Managing PowerPivot in SharePoint



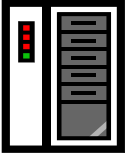
Memory

- Teach data modelers not to retrieve every field available (it's all in memory after all!)
- Manage memory availability: all db's in use are in memory concurrently (leaving ~10%-20% buffer)

Disk Space

- Monitor disk space & file uploads as PowerPivot files are far larger than typical Excel files (data is embedded in workbook)
- Files are cached to avoid round trips to the Content DB

Managing PowerPivot in SharePoint



Naming & Versioning

- Teach producers of data to continue using same name for the model (i.e., avoid habit of V1, V2 or dates in name)
- Consider minimal versioning in document library (Content DB size concerns since data is embedded in workbook)

Metadata

- Requiring certain metadata fields for reports & models will aid with Search
- Cannot see custom fields in the PowerPivot Gallery view (need to use “All Documents” view)

Securing PowerPivot in SharePoint



Permissions to Publish

- Limit number of people who are permitted to publish data for others to consume
- Consider using workflows for approval of new models

Access to Models & Reports

- Access to the document library
 - Based on content
 - Based on security
- Permissions to individual models
- Permissions to individual reports (preferably same as underlying model – inherit from parent)

Securing PowerPivot in SharePoint



Thumbnail Previews

Starting with SQL Server 2012 SP1:

1. Report & workbook must reside in same PowerPivot Gallery
2. Both must inherit permissions from the parent

If both rules aren't met:  instead of preview

Until SP1 is fully released, to avoid the potential of showing a preview for data the user doesn't have permission to see:

- Ensure permissions on reports are same as its underlying model
- Use a regular document library (instead of PowerPivot Gallery) if preview is of concern



Library

Model

Report

Securing PowerPivot in SharePoint



Access to Data in the Workbook

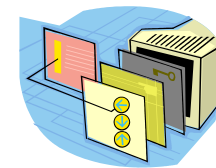
View Only permissions (Viewers): user will get a “snapshot” only; no data is exposed

Contribute permissions (Members): user can download full workbook & access all data stored within the PowerPivot model

Starting with SQL Server 2012 SP1:

Read permissions will be required to connect to a PowerPivot workbook from a client application

Data Refreshes – 2 Approaches



PowerPivot for Excel

Manual refreshes only.

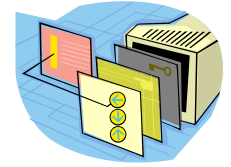
PowerPivot for SharePoint

User refreshes while the workbook is open. This technique does NOT refresh data in the PowerPivot database.

OR

User sets up scheduled data refreshes. This method does refresh both the Excel workbook & the PowerPivot database.
(It actually sets the “Refresh on Open” flag in the Excel workbook to make the Excel file update itself when the user opens it.)

Managing Data Refreshes



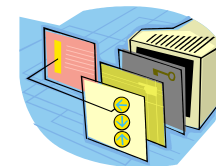
Data Refresh

- Data modelers set up their own data refreshes
- Anyone with **Contribute** permissions can modify
- Data is refreshed in full based on query
- Individual credentials typically used for data access
- Challenging: terminations, transfers, PW changes
- Workbook cannot be open or actively being edited

A screenshot of the Microsoft Excel PowerPivot interface. The main window displays a line chart and a data table. The title bar reads "Auto Sales PowerPivot Model". Below the title, it says "Last Modified By: System Account, Date: 11/3/2012" and "Created By: System Account". In the top right corner, there are three icons: a document, a chart, and a calendar. A tooltip labeled "Manage Data Refresh" is visible over the calendar icon. The data table shows columns for "Year" and "Sales", with rows for years 2006 through 2010 and a "Grand Total" row. The "Grand Total" row shows a value of 112,080,949.00. A smaller window titled "Sheet1" is visible in the foreground, showing a similar view of the data.

Year	Sales
2006	100,000,000.00
2007	110,000,000.00
2008	120,000,000.00
2009	115,000,000.00
2010	105,000,000.00
Grand Total	112,080,949.00

Managing Data Refreshes



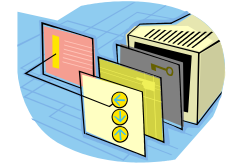
Workbook Size Limits

- If a data refresh will force the workbook to exceed the 2GB size limitation, the refresh will fail

Drivers & Versions

- If data modeler used a custom driver on their machine that doesn't exist on the server, the refresh will fail
- If version of PowerPivot on user's desktop differs from the server (ex: 32-bit instead of 64-bit), the refresh will fail

Managing Data Refreshes



Data Refresh Options in Central Admin

Business Hours represent when priority is given for querying rather than refreshes. *(Considerations: international users; timeframes to query source systems; need at least a small window or the “After Business Hours” option will cause a failure)*

By default, PowerPivot will discontinue refreshing workbooks that continue to fail, or don't get queried often.

Data Refresh

Settings to control data refresh.

Business Hours

Start Time am pm

End Time am pm

PowerPivot Unattended Data Refresh Account

Allow users to enter custom Windows credentials

Maximum Processing History Length

The maximum number of days of processing history to keep

Valid value: ≥ 1 , ≤ 5000 (days)

Disable data refresh due to consecutive failures

Specify the number of consecutive failures after which a data refresh schedule is disabled. Specify 0 to never disable a schedule based on data refresh failures.

Valid value: 0(never), ≥ 1 failures, default 10

Disable data refresh for inactive workbooks

Specify the number of data refresh cycles to check for inactivity. If a workbook has not been accessed by an interactive user during this period, the data refresh schedule will be disabled, Specify 0 to never disable a data refresh schedule based on inactivity.

Valid value: 0(never), ≥ 1 cycles, default 10

Managing Data Refreshes



Data Refresh Options in PowerPivot Gallery

> 1x per day
cannot be
scheduled

Actual start time
is controlled by:

(1) **Business Hours**
defined by

Administrator,

(2) How often the
Power **Pivot Data**
Refresh Timer Job

is scheduled to run,

(3) Sufficient **system resources**, and

(4) How many **concurrent refresh jobs** are allowed to run

Data Refresh

Specify if you would like to turn Data Refresh on or off.
[Click here](#) to learn more about this page.

Enable

Schedule Details

Define the frequency (daily, weekly, monthly or once)
and the timing details for the refresh schedule.

Daily

Every day(s)

Weekly

Every weekday

Monthly

On the following days:

Once

Sunday

Monday

Tuesday

Wednesday

Thursday

Friday

Saturday

Also refresh as soon as possible

Earliest Start Time

Specify the earliest start time that the data refresh will
begin

After business hours

Specific earliest start time:

:

am

pm

E-mail Notifications

Specify e-mail address of the users to be notified in the
event of data refresh failures.



Managing Data Refreshes



Data Refresh Options in PowerPivot Gallery

- Use the data refresh account configured by the administrator
- Connect using the following Windows user credentials
- Connect using the credentials saved in Secure Store Service (SSS) to log on to the data source. Enter the ID used to look up the credentials in the SSS ID box

Considerations:

- What account is executing the process on the server?
- What account is being used to query the underlying data sources?
- Account must be from same domain, or from a trusted domain

Further details:

See my PowerPivot Data Refresh Options blog entry

<http://www.sqlchick.com/entries/2012/11/17/powerpivot-data-refresh-options.html>

Managing Data Refreshes



Data Refresh Options in PowerPivot Gallery

1

- Use the data refresh account configured by the administrator
- Connect using the following Windows user credentials
- Connect using the credentials saved in Secure Store Service (SSS) to log on to the data source. Enter the ID used to look up the credentials in the SSS ID box

Data Queries

Refresh operation performed by

PowerPivot

Unattended Account

If Windows Auth:

uses “current user”

(security considerations)

If ID/PW in connection string: user specified

Pros

Simple for workbook owner to use

Few concerns with password changes, terminations & transfers

Cons

Not suitable when row level security is implemented on the source system being queried (only 1

Unattended Account per service app – needs broad permissions to satisfy refresh for all workbooks)

Managing Data Refreshes



Data Refresh Options in PowerPivot Gallery

2

Use the data refresh account configured by the administrator

Connect using the following Windows user credentials

User Name:

Password:

Confirm Password:

Connect using the credentials saved in Secure Store Service (SSS) to log on to the data source. Enter the ID used to look up the credentials in the SSS ID box

Data Queries

Refresh operation performed by **Windows user** specified

Pros

Less complication with source system permissions

Retain same security upon refresh as when set up

Cons

Management of terminations, transfers, and password changes

PW changes: user needs to update Data Refresh Schedule in every workbook

Managing Data Refreshes



Data Refresh Options in PowerPivot Gallery

3

Use the data refresh account configured by the administrator

Connect using the following Windows user credentials

Connect using the credentials saved in Secure Store Service (SSS) to log on to the data source. Enter the ID used to look up the credentials in the SSS ID box

ID:

Data Queries

Refresh operation performed by Windows user associated to the **SSS ID** specified

(Similar to Option 1, but not limited to one account per svc app)

Pros

No name or password shared with users

Few concerns with password changes, terminations & transfers

Cons

If being used to “simulate” user security, need to carefully manage which ID goes with which user account

Managing PowerPivot on Desktops



RAM

- RAM upgrades may be needed on user machines
- Minimum 4GB – give 6-8GB or more if possible

64-bit vs. 32-bit

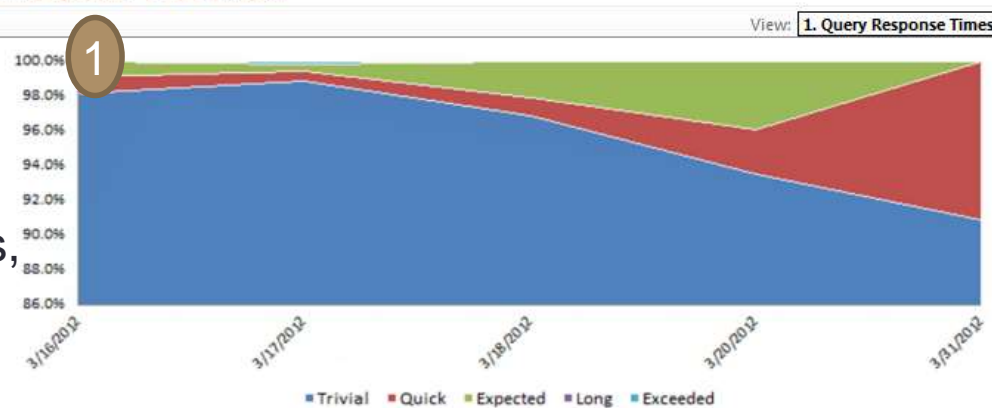
- 32-bit cannot handle data volumes $> \sim 1\text{M}$ rows
- 64-bit may not be compatible with all Office add-ins

Installation

- Requires .NET 3.5 SP1 and Office Shared Features
- Becomes much easier in Excel 2013 (just enable it)

PowerPivot Management Dashboard

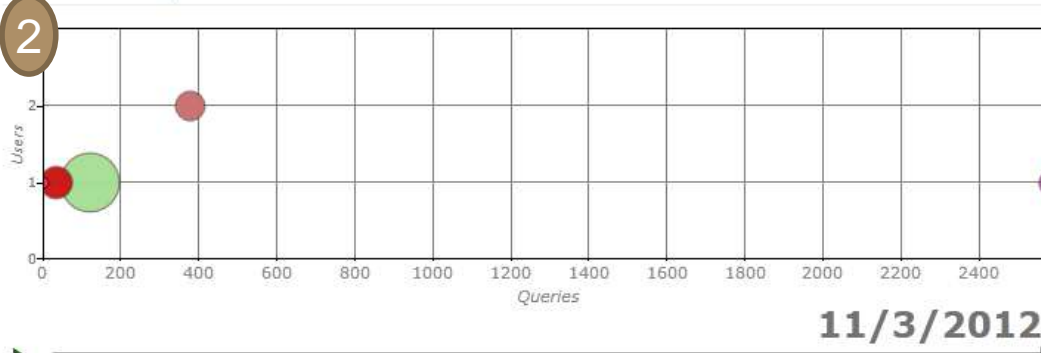
Infrastructure - Server Health



Actions

- Configure service application settings
 - List service applications
 - Review timer job definitions
 - Configure usage logging
- Last successful refresh run: 11/3/2012 2:52:28 PM

Workbook Activity - Chart



Workbook Activity - List

Workbook	Users	Queries	Size (Mb)
Auto Sales PowerPivot Model.xlsx	2	378	3.43
Extrusion Operations.xlsx	1	0	0.52
Reseller Sales PowerPivot Model.xlsx	1	35	4.70
TruCare Sales Analysis.xlsx	1	122	63.04
PowerPivot Management Data.xlsx	1	4639	2.46

Data Refresh - Recent Activity

Workbook	End Time	Duration (seconds)
Reseller Sales PowerPivot Model.xlsx	11/3/2012 9:33:12 AM	55
TruCare Sales Analysis.xlsx	11/3/2012 9:33:07 AM	73
Auto Sales PowerPivot Model.xlsx	11/3/2012 9:21:15 AM	81

Data Refresh - Recent Failures

Data Source	End Time
AdventureWorksDWDenali denali-imagex	11/3/2012 9:33:12 AM
BIDemoAnalyticsDW ATLSQL03	11/3/2012 9:33:06 AM

Reports

Type	Name
Server Health	Server Health
Workbook Activity	Workbook Activity
PowerPivot Management Data	PowerPivot Management Data

Add document

Data Source: Management Data Sandbox (an SSAS Tabular Model)

PowerPivot Management - Reports

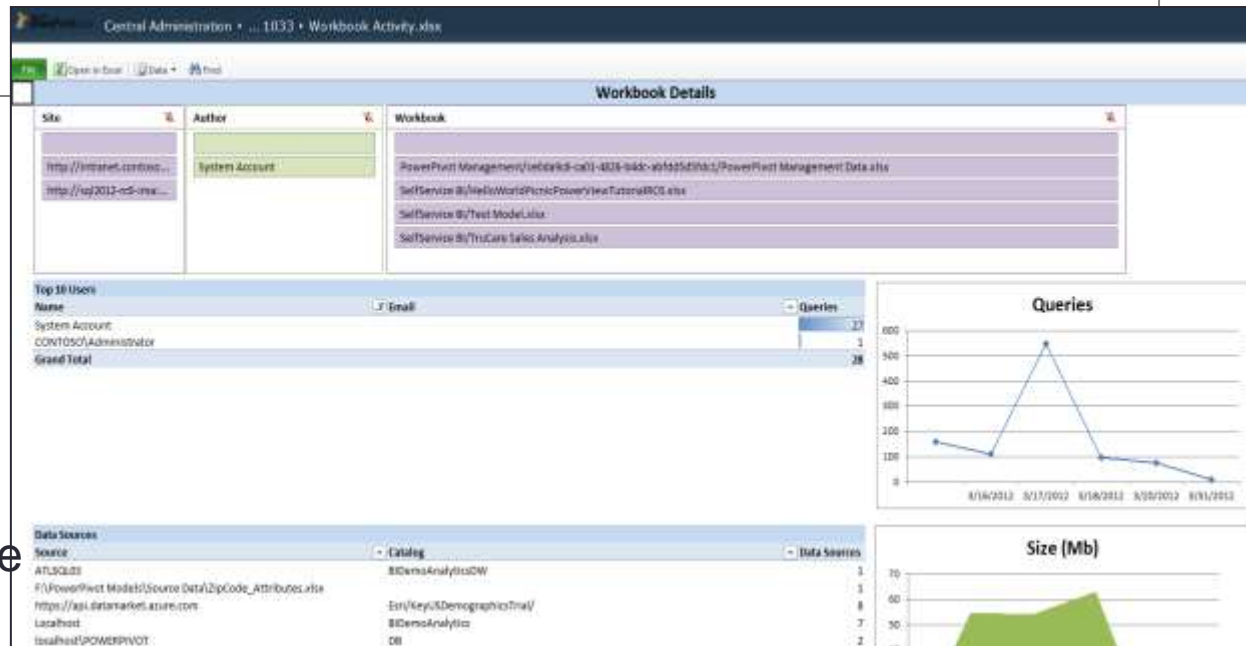
SharePoint 2010 Central Administration > ... 1033 > Workbook Activity.xlsx

File Open in Excel Data Find

Workbook Activity by Document

Year	Document	Users	Total Queries	Load Size Max (MB)
2009	+ SelfService BI/Test Model.xlsx	2	212	63
2010	+ SelfService BI/TruCare Sales Analysis.xlsx	1	11	0
2011	+ PowerPivot Management/ce0da9c8-ca01-4826-b4dc-abfd5d5fdc1/PowerPivot Management Data.xlsx	1	504	3
	+ SelfService BI/HelloWorldPicnicPowerViewTutorialRC0.xlsx	1	102	1
	Grand Total	2	1,003	63

Month: April, December



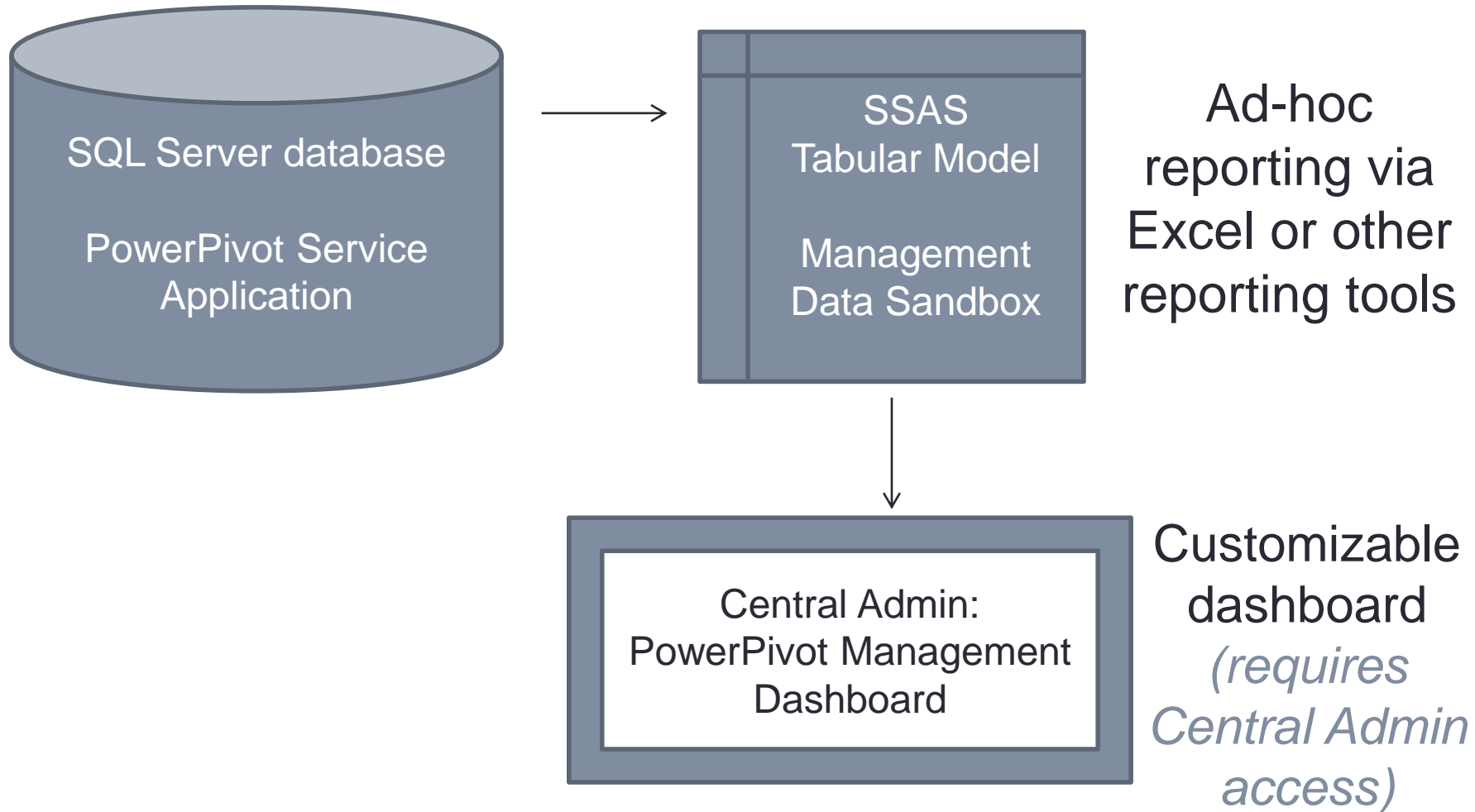
Visibility into:

- Queries
- CPU
- Memory
- Connections
- Workbook Sizes
- Users & Authors
- Usage Increase & Decrease
- Data Refresh

Data Source: Management Data Sandbox (an SSAS Tabular Model)

Usage Reporting

PowerPivot Management Data:



Usage Reporting – Refreshing Data

Refreshing Data in the Management Data Sandbox

Relies on 3 timer jobs

Component	Default schedule
SharePoint 2010 Timer Service (SPTimerV4)	
Microsoft SharePoint Foundation Usage Data Import timer job	Every 30 minutes
Microsoft SharePoint Foundation Usage Data Processing timer job	Daily at 3:00 A.M.
PowerPivot Data Management Dashboard Processing timer job	Daily at 5:00 A.M.

Usage Reporting - Options

PowerPivot Settings

(General Application Settings Central Admin):

Query Reporting Interval

The number of seconds to gather query response statistics before reporting it as a usage event.

Valid values: must be ≥ 1 (in seconds).

Usage Data History

The number of days to retain a history of usage data and server health statistics. Setting this value to zero keeps all history indefinitely.

Valid values: must be ≥ 0 (in days).

By default, usage data is retained for 1 year.

Limits defined for Trivial/Quick/Expected/Long query times affect the Management Data reports.

Trivial Response Upper Limit

An upper limit (in milliseconds) that sets the threshold for completing a trivial request, such as server-to-server communications that establish a user connection to PowerPivot data. Trivial requests are excluded from report data.

Valid values: must be > 0 and $<$ Quick Response Upper Limit (in milliseconds).

Quick Response Upper Limit

An upper limit (in milliseconds) that sets the threshold for completing requests quickly. For reporting purposes, a quick request might include querying a small dataset.

Valid values: must be $>$ Trivial Response Upper Limit and $<$ Expected Response Upper Limit (in milliseconds).

Expected Response Upper Limit

An upper limit (in milliseconds) that sets the threshold for completing a query in an expected amount of time. For reporting purposes, most queries for PowerPivot data should fall into this category.

Valid values: must be $>$ Quick Response Upper Limit and $<$ Long Response Upper Limit (in milliseconds).

Long Response Upper Limit

An upper limit (in milliseconds) that sets the threshold for completing a long running request. Relatively few requests should fall into this range. Long running requests are acceptable as long as their overall number is small relative to the total number of processing requests.

Valid values: must be $>$ Expected Response Upper Limit (in milliseconds).

Central Admin

Common places to find PowerPivot management settings

The screenshot displays the SharePoint 2010 Central Administration interface. The top navigation bar includes 'Site Actions', 'Browse', 'Service Applications', and 'System Account'. Below this is a ribbon with 'New', 'Connect', 'Delete', 'Manage', 'Administrators', 'Properties', 'Publish', and 'Permissions' buttons. The main content area is divided into a left-hand navigation pane and a right-hand table of Service Applications.

Left-hand navigation pane:

- Central Administration
- Application Management
- System Settings
- Monitoring
- Backup and Restore
- Security
- Upgrade and Migration
- General Application Settings
- Configuration Wizards
- External Service Connections
- InfoPath Forms Services
- Site Directory
- SharePoint Designer
- Search
- Content Deployment
- SQL Server Reporting Services (2008 and 2008 R2)
- PowerPivot

Service Applications Table:

Name	Type	Status
Access Services	Access Services Web Service Application	Started
Access Services	Access Services Web Service Application Proxy	Started
Application Discovery and Load Balancer Service Application	Application Discovery and Load Balancer Service Application	Started
Application Discovery and Load Balancer Service Application Proxy_6b0a625d-3340-402a-b078-7c07547e21cf	Application Discovery and Load Balancer Service Application Proxy	Started
Application Registry Service	Application Registry Service	Started
Application Registry Service	Application Registry Proxy	Started
Business Data Connectivity Service	Business Data Connectivity Service Application	Started
Business Data Connectivity Service	Business Data Connectivity Service Application Proxy	Started
Default PowerPivot Service Application	PowerPivot Service Application	Started
Default PowerPivot Service Application	PowerPivot Service Application Proxy	Started
Excel Services Application	Excel Services Application Web Service Application	Started
Excel Services Application	Excel Services Application Web Service Application Proxy	Started

Callouts:

- A red arrow points from the 'Default PowerPivot Service Application' row in the table to a callout box labeled 'PowerPivot Service Application Settings'.
- A red arrow points from the 'Excel Services Application' row in the table to a callout box labeled 'Excel Services Service Application Settings'.

Central Admin (cont'd)

Common places to find PowerPivot management settings

The screenshot displays the SharePoint 2010 Central Administration interface. The top navigation bar shows 'Central Administration > Monitoring'. A left-hand navigation pane lists various administrative tasks, with 'Monitoring' selected. The main content area shows a table of services on a server. A red arrow points to 'SQL Server Analysis Services' in the table. Another red arrow points to 'Timer Jobs' in the 'Monitoring' section. A callout box points to 'Timer Job Definitions & Job Status' and another points to 'Analysis Services Services on Server'.

Microsoft SharePoint 2010 Central Administration > Monitoring

Microsoft SharePoint 2010 Central Administration > Services on Server: SQL...

Use this page to start or stop instances of services on servers in t...

Central Administration

- Application Management
- System Settings
- Monitoring
- Backup and Restore
- Security
- Upgrade and Migration
- General Application Settings
- Configuration Wizards

Health Analyzer
Review problems and solutions | Review rule definitions

Timer Jobs
Review job definitions | Check job status

Reporting
View administrative reports | Configure diagnostic logging | Review Information Management Policy Usage Reports | View health reports
Configure usage and health data collection | View Web Analytics reports

Server: SQL

Service	Status	Action
Access Database Service	Started	Stop
Application Registry Service	Started	Stop
Business Data Connectivity Service	Started	Stop
Central Administration	Started	Stop
Claims to Windows Token Service	Started	Stop
Document Conversions Launcher Service	Stopped	Start
Document Conversions Load Balancer Service	Stopped	Start
Secure Store Service	Started	Stop
SharePoint Foundation Search	Stopped	Start
SharePoint Server Search	Started	Stop
SQL Server Analysis Services	Started	Stop
SQL Server PowerPivot System Service	Started	Stop
Microsoft SharePoint Foundation Subscription Settings Service	Stopped	Start
Microsoft SharePoint Foundation Web Application	Started	Stop
Microsoft SharePoint Foundation Workflow Timer Service	Started	Stop
PerformancePoint Service	Started	Stop
Search Query and Site Settings Service	Started	Stop

Timer Job Definitions & Job Status

Analysis Services Services on Server

Demo

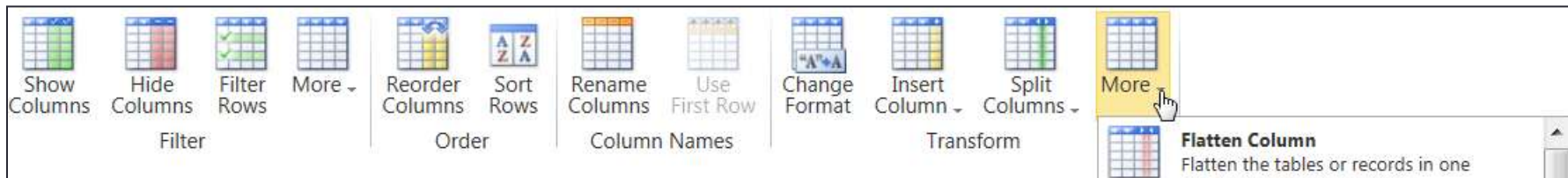
PowerPivot Management Dashboard

Usage Analysis of PowerPivot Management Data

SELF-SERVICE
DATA MANAGEMENT TOOLS
COMING SOON

Data Explorer

A self-service tool to **Discover, Enrich & Publish** data



Add Data Choose a data source

Data Explorer supports various data formats, including Excel, Access, Data Explorer mashup, text, CSV, HTML, XML, JSON, and OData.

Connect

- SQL Databases
- Web Content
- OData Feed
- Windows Azure Marketplace
- SharePoint

File

- Import File
- Link To File
- Data Explorer Mashup

Input

- Text
- Paste
- Formula

-
- Flatten Column**
Flatten the tables or records in one column into the larger table
 - Merge Columns**
Merge multiple columns into one column
 - Summarize**
Summarize the table by consolidating related rows of the table
 - Fill Down**
Propagate the value of a previous cell to the null-valued cells below in a column
 - Replace Values**
Replace one value with another in the specified columns
 - Transpose**
Turn the rows of the table into columns
 - Extract Headers**
Extract the header names into a list

- Web-based client is “Cloud Service” preview (SQL Azure Labs)
- Desktop client has an Excel add-in; not as full-featured as Cloud

Data Hub

A Windows Azure service to create & manage a **private data marketplace** for your enterprise data.

The screenshot displays the Microsoft Data Hub web interface. At the top, there is a blue header with the 'Data Hub' logo on the left and a search bar on the right containing a magnifying glass icon and the text 'Welcome, Vicki'. Below the header, a navigation bar includes tabs for 'MARKETPLACE', 'MY COLLECTION', 'MANAGEMENT', and 'PUBLISH DATA'. The main content area shows search results for the query 'SEARCH: OPPORTUNITY', indicating '73 Results in:'. A 'Sort By' dropdown menu is set to 'Relevance'. On the right side of the results bar, there are two green buttons: 'Publish to Public Marketplace' and 'Add to Collection'. Below the search bar, a list of results is shown, including 'SalesOppFact' and 'SalesOppDim'. Each result includes a checkbox, the name of the data set, and a brief description. The 'SalesOppFact' and 'SalesOppDim' results describe facts containing the history of metric changes for Sales Opportunities. A 'Source: Market' label is visible on the right side of the results. On the left side of the interface, there is a 'search' section with 'FILTERS' and a 'CATEGORY' list including 'Sales', 'Strategic Planning', 'Enterprise Risk', 'Legal', and 'People'. There is also an 'OWNER' section with a dropdown arrow and a 'SOURCE' section with 'CRM' and 'Public Marketplace' options.

In a “Cloud Service” preview (SQL Azure Labs). In the 1st milestone of the “Data Hub” roadmap.

WRAP-UP:
KEYS TO SUCCESS
WITH SELF-SERVICE BI

Keys to Success with Self-Service BI

- Figure out how Business & IT can work together to support each other
- Work with strengths & limitations of Self-Service BI
- Find where it complements Corporate BI in your organization
- Create a population of “savvy” power users
- Training & documentation
- User support
- Executive support & evangelists
- Balance of governance and flexibility for business users
- Change management



People > Process > Technology

Further Reading

[Increasing Productivity by Empowering Business Users with Self-Serve BI](#)

[Choose the Right Business Intelligence Technology to Suit Your Style](#)

[Self Service Key to Creating Enterprise Business Intelligence Heroes](#)

[A Primer on PowerPivot Topologies and Configurations](#)

[Self-Service BI: Remember to Plan for the Back-End Infrastructure](#)

[Enabling Data as a Service for Self-Service Business Intelligence](#)

[PowerPivot Management Dashboard](#)

[TechEd 2012 Presentation: Deploying and Managing a PowerPivot for SharePoint Infrastructure Using Microsoft SQL Server 2012](#)

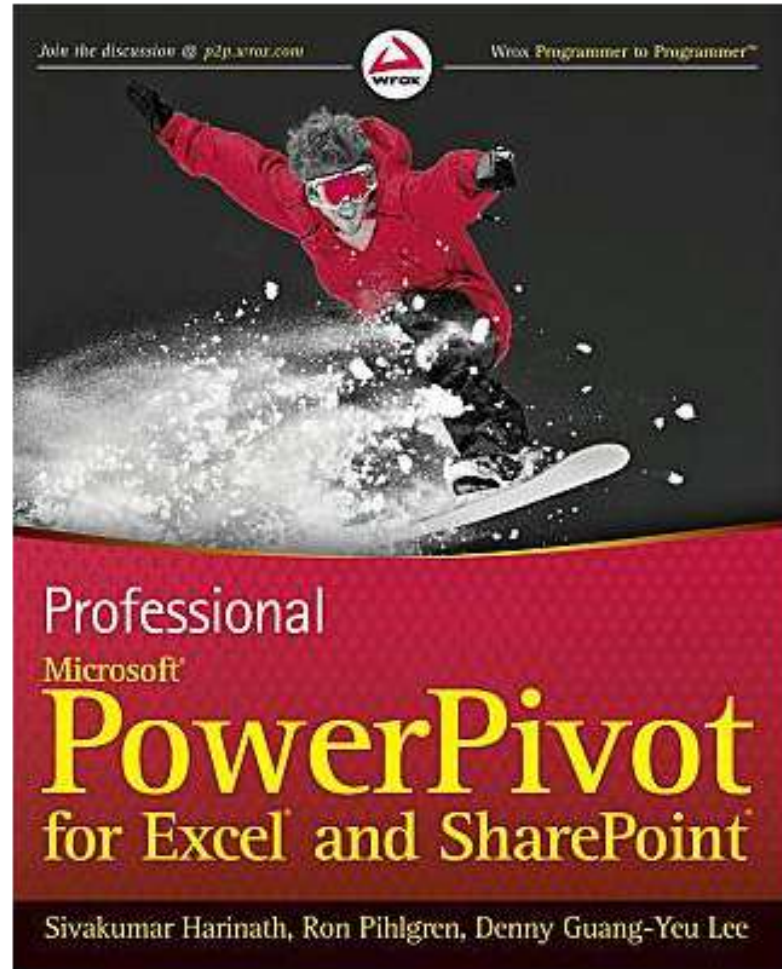
[Customizing the PowerPivot Management Dashboard](#)

[The State of Self-Service Reporting](#)

Recommended Reading

Currently, most PowerPivot books available focus on creation of the model and DAX formulas.

More than half of this Wrox book focuses on management & configuration.



Thanks for attending!



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