



Business Insight Through Cloud-based Data Models
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What we will cover

The *business process* associated with generating undirected business insight

Possible roadmap paths for data model growth

- From the perspective of data analysts

Advantages of leveraging cloud infrastructure for:

- Data exploration and Self-Service BI
- Business value based infrastructure sizing

What we will not cover

Detailed Cloud infrastructure architecture

Exhaustive list of Cloud vendor and feature options

Deployment approaches & configuration of Cloud environments

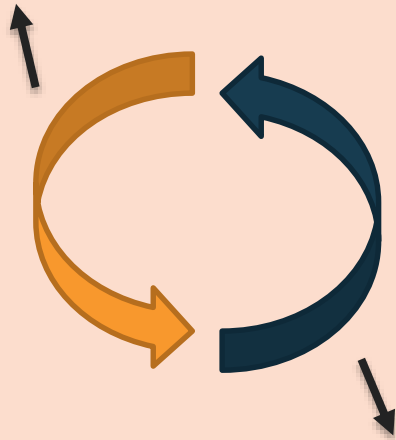
Part 1: The elephant in the room

Data Analysts and I.T. staff – friends or foes?



Theory

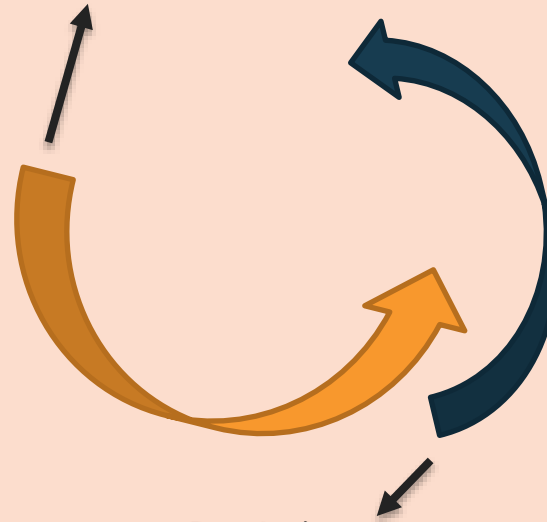
I.T.
Catalogs and organizes user data needs
Provides data access layers
Manages data assets



Data Analysts
Satisfy data needs from validated repositories
Adhere to standards for data consumption
Proactively inform I.T. of data requirements

Practice

I.T.
May struggle to standardize business calculations
Play catchup against spreadmarts
Feel overwhelmed with user's rapidly changing data requests



Data Analysts
Feel unsatisfied with I.T.'s delivery pace
Create spreadmarts as a way to control own delivery
Willing to explore beyond validated data repositories

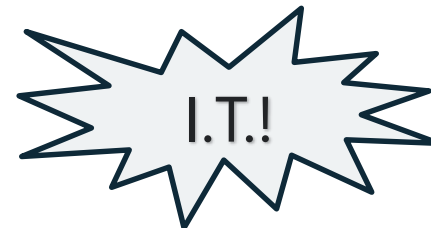
The "evil" spreadmart

"A spreadmart is a reporting or analysis system **running on a desktop database** (e.g., spreadsheet, Access database)...

that is created and maintained by an **individual or group**..

and performs all the tasks normally done by **a data mart or data warehouse."**

The Data Warehousing Institute



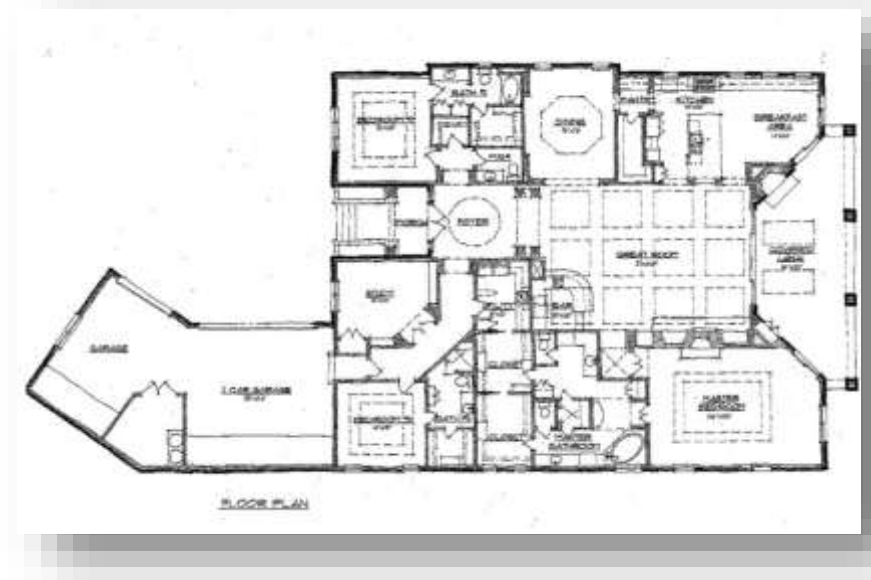
Different perspectives (we all mean well!)

I.T.	Data Analysts
<ul style="list-style-type: none">• Focus on bigger picture• Standardization, Security• Diverse data access (web, pre-canned reports, etc.)• Longer, more expensive projects	<ul style="list-style-type: none">• Focus on producing smaller, short term analytics• Spreadsheet based reporting• Short delivery timeframes• Quick data explorations

I.T. will do whatever it takes...

To standardize Corporate Analytics

- Designate legitimate data sources
- Perform complex data integration and transformations
- Adhere to common, standard definitions
- Certify reports for user 'readiness'



Analysts will do whatever it takes...

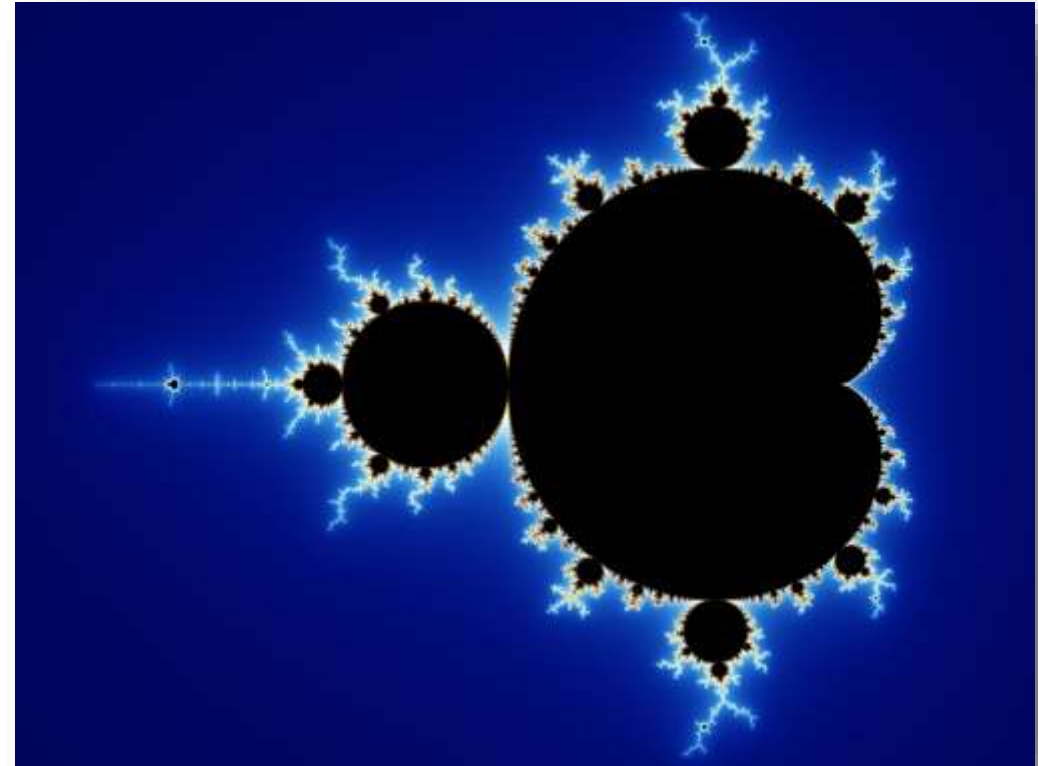
To push their reports out! *(warning: it may look a little messy)*

- VBA Macros
- VLOOKUPs / SUMIFs
- “Bribe” I.T. friends 😊
- ... MAYBE EVEN SOME DAX!



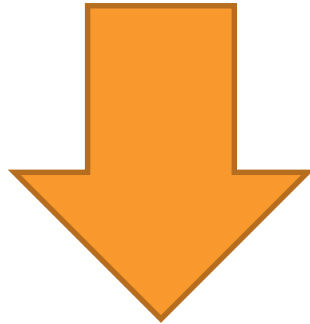
Part 2: Organic Model Growth

The case for "bottom / up" analytics



What is your approach to Business Analytics?

Top/Down



- Wide scope vision
- Complex and broad data models
- Well defined data governance

Bottom/Up



- Narrow scope on immediate needs
- Agile, small & targeted data models
- "Chaotic" report generation

...A successful Business Analytics vision should include both!

Imagine...

A world in which analysts can:

- Generate **business insight** in a free-form environment
- Do so with the **minimal infrastructure**

And yield to:

- Data discoveries that provide **business value** in the short term
- **Increasingly adopted analytical reports** that I.T. has discretion to extend in order to benefit others

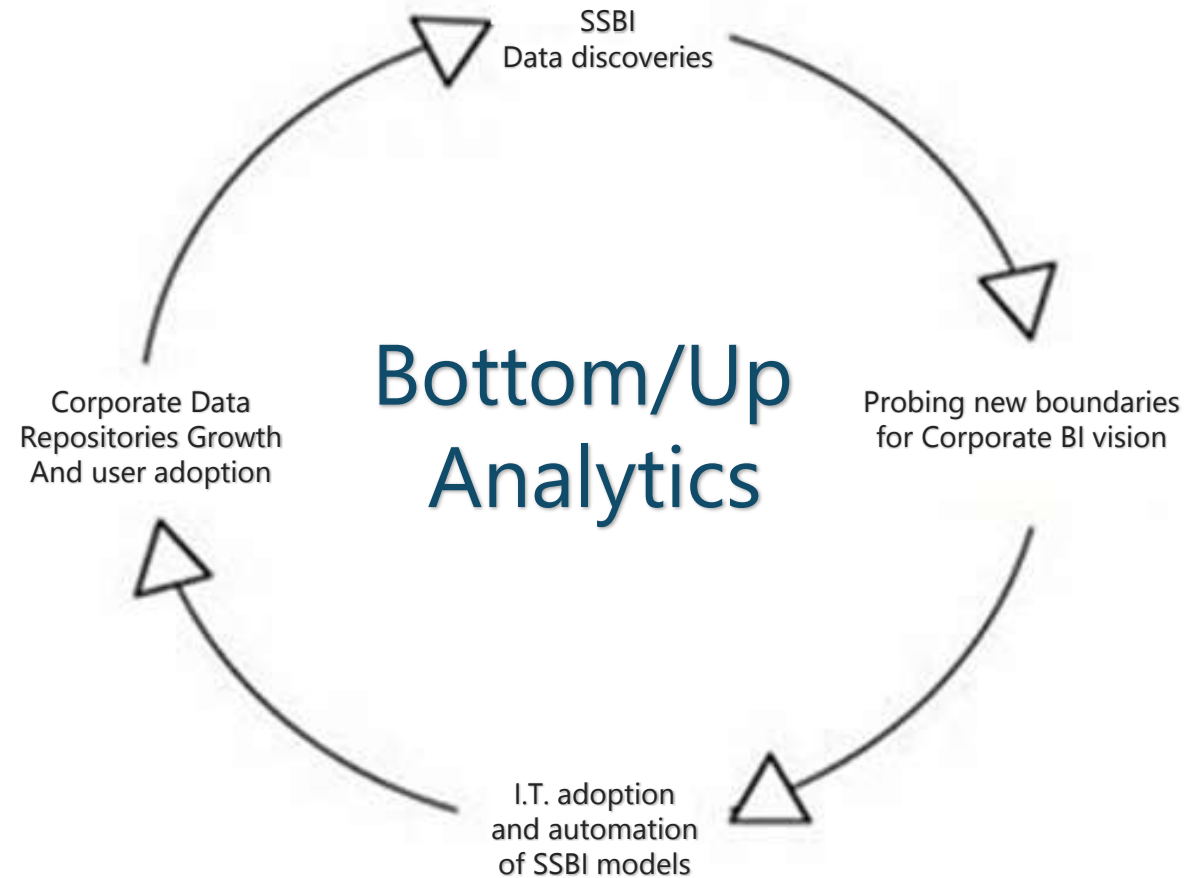


Imagine... (Yes, Part 2!)

... allowing individual data explorations under

- Low cost infrastructure
- Can stop paying for it if not used
- Low to no administration costs
- No need re-allocated resources to maintain and secure

A collaborative approach



Why focus on data models?

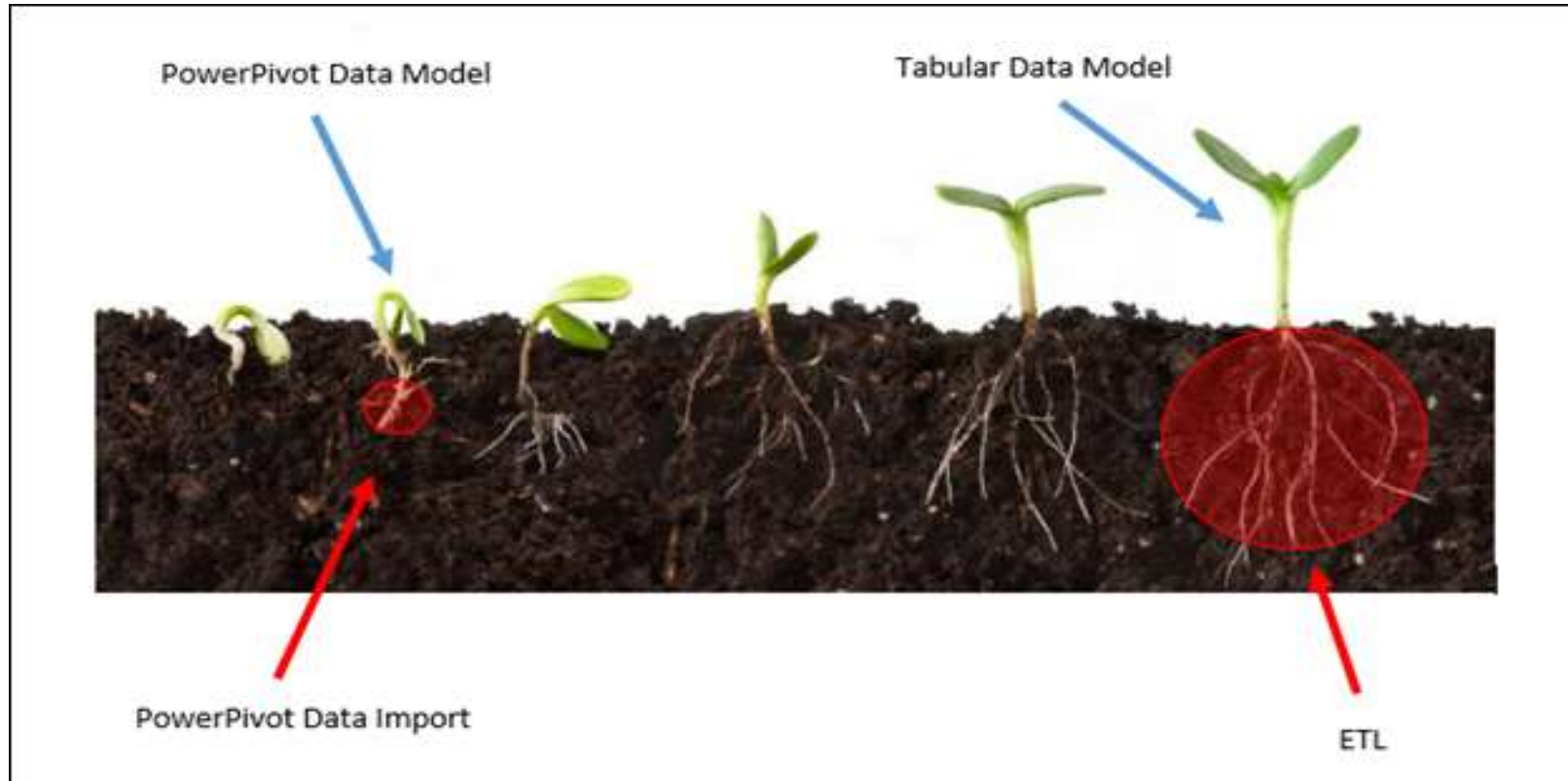
- The first point of contact for SSBI / power users
- Semantic layer across multiple sources
- Prototyping capabilities

Models built by analysts can potentially prove...

- ✓ One or more valid data sources
- ✓ A data modeling approach
- ✓ One or more valid calculations

Adopt a Model Nurturing strategy

Start small, grow on business value



You may call me a dreamer.... But I'm not the only one!!!

What is “Model Nurturing”?

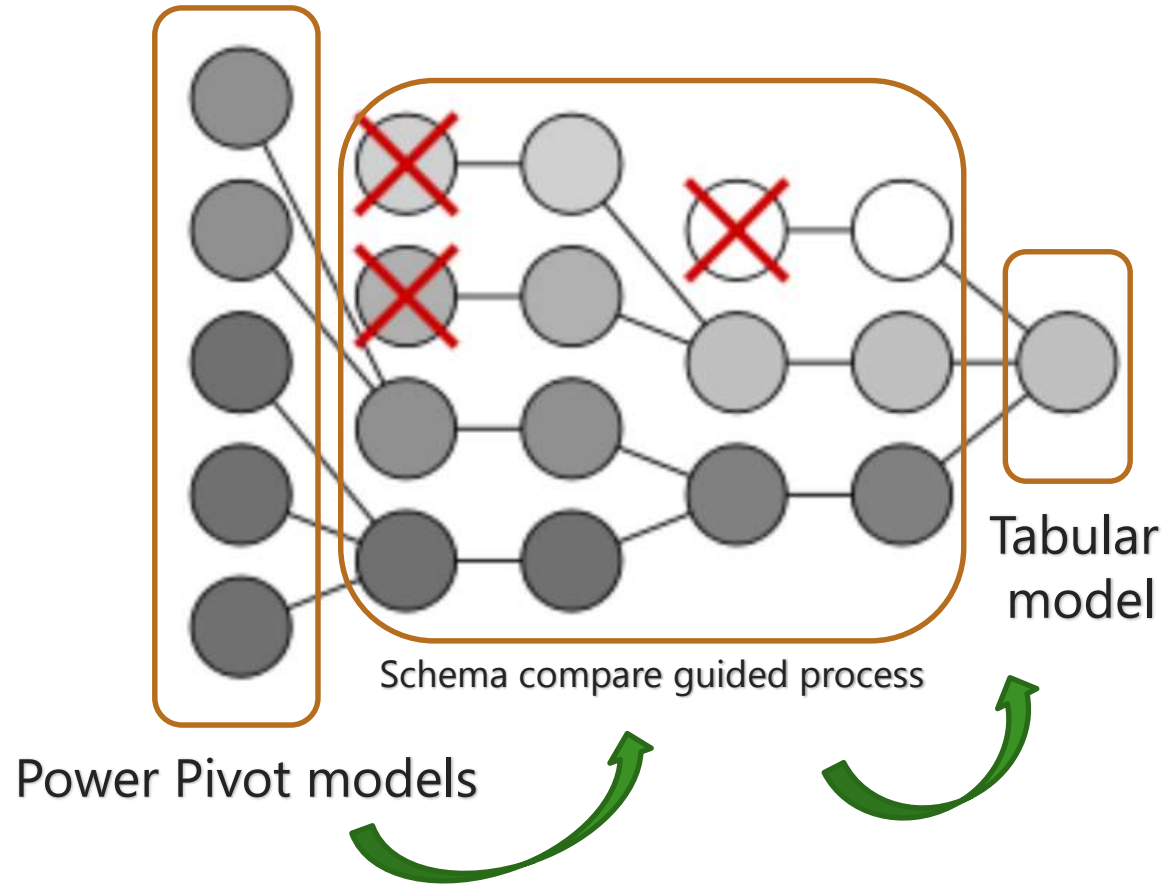
- Allow freedom for Self-Service BI exploration
- Add “love & attention” and see those “seed” models grow:
 - Track model usage and popularity in SharePoint
 - Implement SQL Server BI layers only when they provide short term business value:
 - ETL
 - MDS
 - DQS
 - Etc.

Model Natural Selection



- Non popular models die over time
 - or sometimes immediately!
- No innovation without a degree of throw-away work
- Unlike biological natural selection, a model nurturing strategy strives to integrate models over time
 - Instead of creating more diversity

I.T. adoption of user models



How would this play out in real life?

- Give data analysts freedom to generate insights
- Don't incur high expenses during exploration phases
- Don't reallocate I.T. resources to run / maintain / administer the environment
- Systematically expand infrastructure's capabilities as business value is generated

Part 3: Cloud infrastructure

Affordable and extensible data model habitats



Model Growth: Cloud vs. On Prem

- MSBI SSBI data model sharing requires SharePoint Enterprise
- SharePoint BI configuration requires expertise, particularly in the case of farm deployments
- Not typically the area of expertise of neither SharePoint admins nor BI staff
- Limited resources for exploratory models

Setting up SharePoint Online

- **Power BI** offers a PaaS infrastructure to quickly enable SharePoint Online
- **PivotStream** also offers a PaaS environment with same capabilities as SharePoint On-Prem
- **Azure IaaS VMs** require custom SharePoint installation, but offers full control over the environment

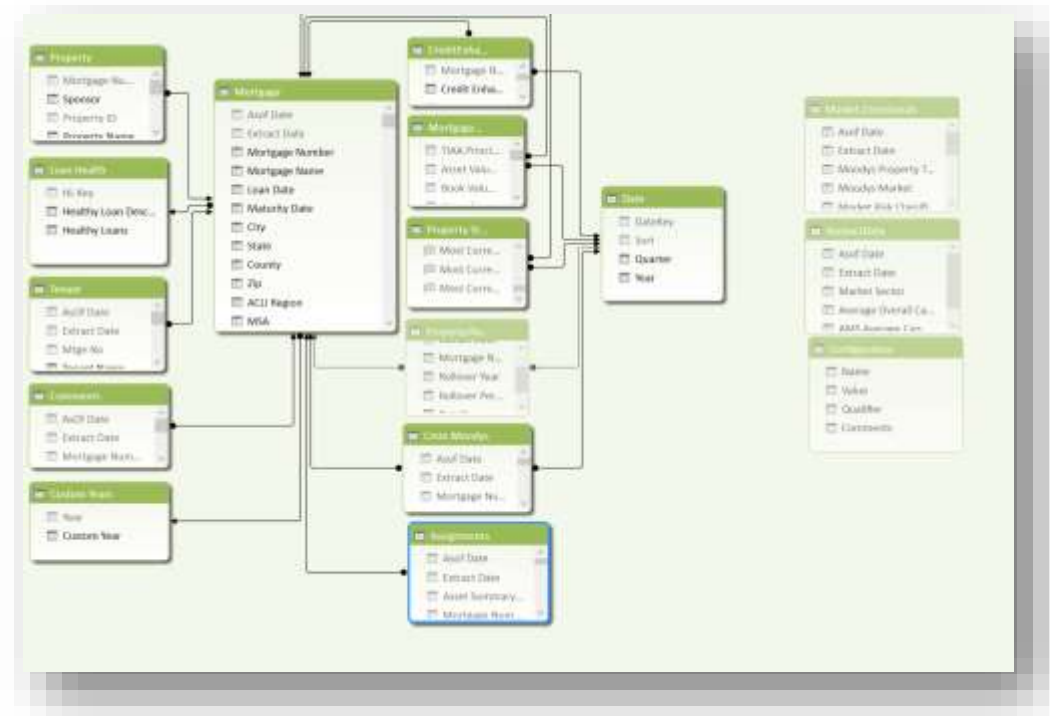
Power Pivot Model Hosting

	PivotStream	Azure IaaS	Power BI
SharePoint Online	Yes	No	Yes
Extranet Model Access	Yes	Yes	No
Automated Self-Service ETL	No	No	Yes
Growth into other SQL Server BI Services	Yes	Yes	No
Site Customization	Yes	Yes	No
Self-Service Administration	Yes	No	Yes

Data modeling versus reporting

- A breakthrough for many analysts
- Commonly followed by two new 'power' requests:

- Data Refresh
- Model reuse



Cloud based model refresh

- Odata feeds (Power BI)
- Database mirroring (PivotStream)
- VPN-based on prem domain join (PivotStream & Azure)

Part 4: Model Sharing

Its one big step for man....



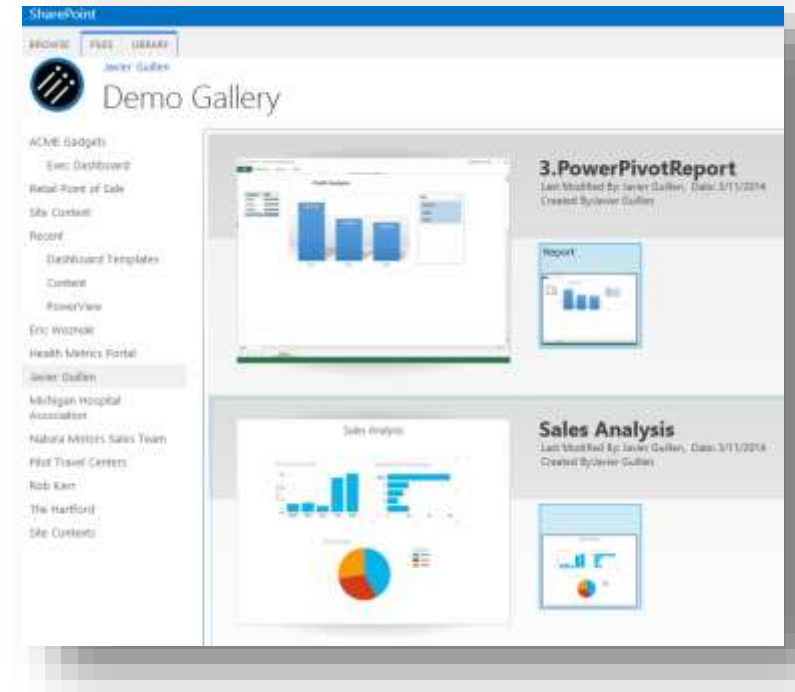
Why is model sharing an important step?

- First step towards Enterprise Business Analytics
 - Bottom / Up approach
- Transference of ownership from pure analyst based reporting to a hybrid format owned both by analysts & I.T.

Publishing a Model

What motivates analysts to share?

- Impressing the boss!
- Stretching current skills + learning new ones
- Hunting valuable data patterns is fun



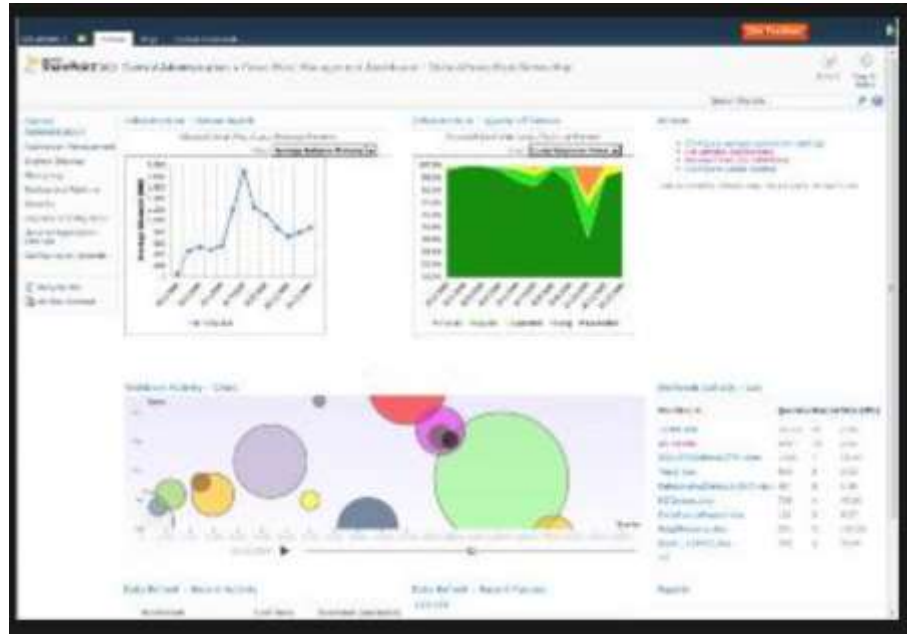
Individual behavior and system health

As in the stock market, data analysts seeking to achieve their own goals can, even without intention, generate gains for others



Monitoring Model Growth

- Popular models seem to take a life of their own
 - Become candidates for extension into other SQL Server BI components



A successful model can grow legs...



Can / should these legs grow in the cloud?

- Hybrid environments are possible
- On prem investments should be made only when business value is proven
- Some cloud platforms do not support growth in every SQL Server BI layer

Who owns the effort?

“Relay race” model to Cloud based model growth



- Starts with the business
- I.T. gets involved as business value is demonstrated
- Success can be a happen quickly, and be shared

Blurred I.T. / data analyst role descriptions

- Users can set up DEV, UAT, PROD sites
- I.T. could leverage user modeling patterns and DAX calculations

Recap: delivering on business value

- Modular approach
- Using low-cost, extensible cloud infrastructure
- Agile, iterative – based on short term needs
- Can be assimilated into wider scope Business Analytics strategy

Demo

Organic Model Growth in a Cloud VM environment



Thank you!

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