

La explosión de datos!!

La estrategia de SQL Server 2011
Juan Eduardo Arrarte (Pronto)
Pablo García (Microsoft)

Analysis Services: Hoy

Broad adoption

"Customers in the Magic Quadrant survey report that their Microsoft average deployment sizes are now **larger than any other vendor in the survey in terms of users.**"

"Use of OLAP functionality by Microsoft customers is **more than double** that for the rest of the survey respondents."

Source: Gartner Magic Quadrant for BI Platforms, 2011

Large ecosystem

"**Wide availability of skills** is among the top reasons customers select Microsoft over competing vendors."

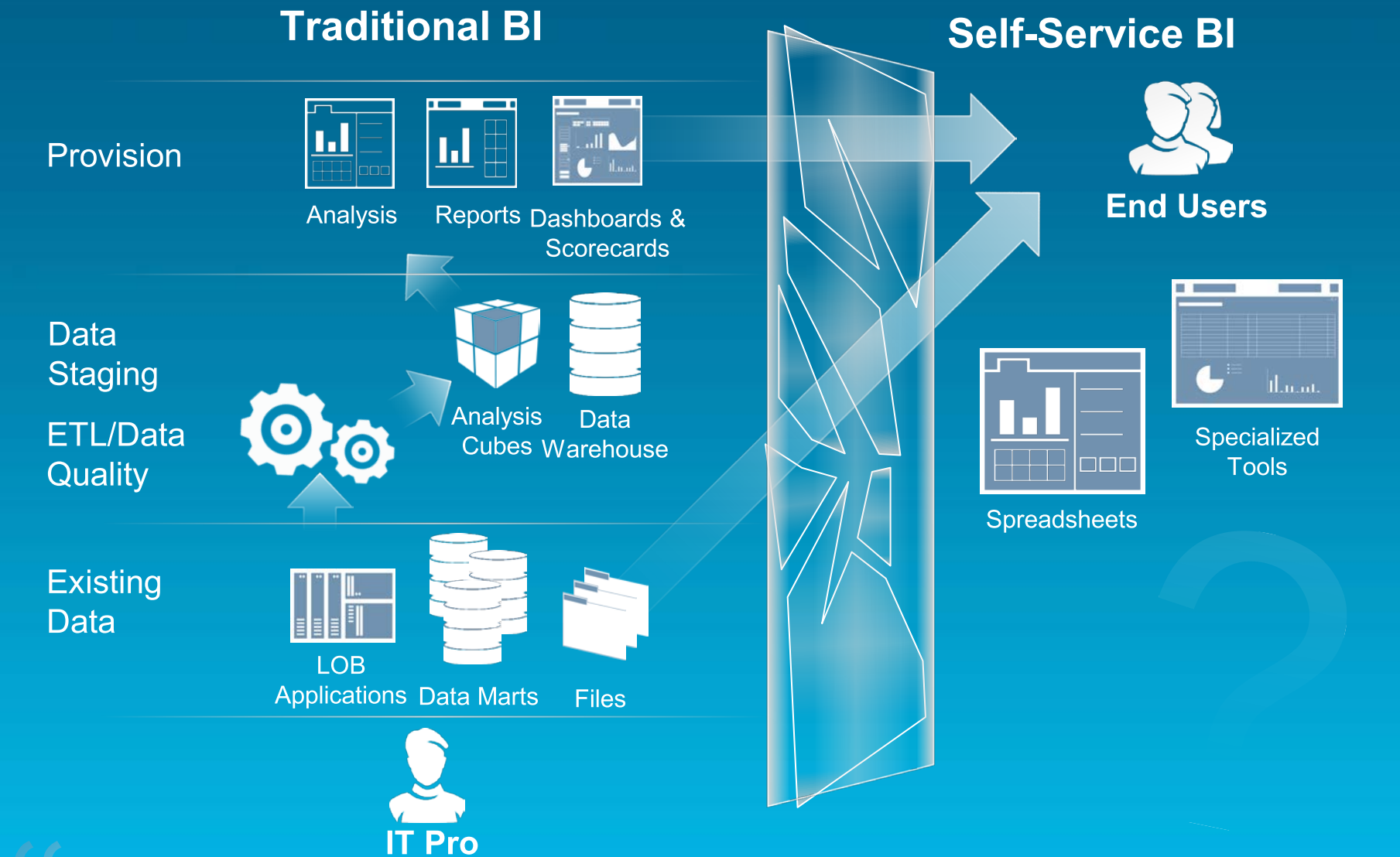
Source: Gartner Magic Quadrant for BI Platforms, 2011

Highest rated infrastructure and development tools

"Microsoft customers **rate its BI platform infrastructure and development tools among the highest** compared to other vendors, and a higher percentage of customers use them extensively."

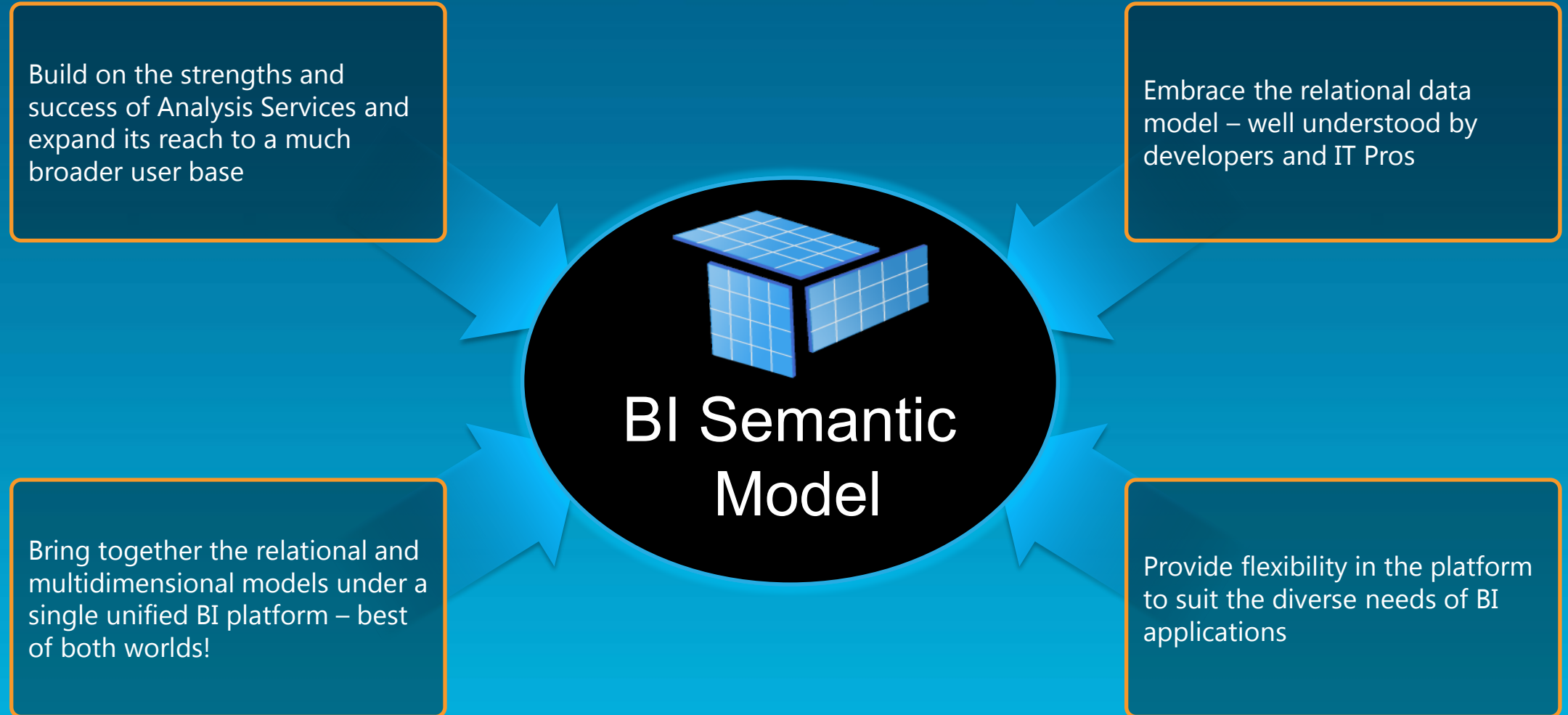
Source: Gartner Magic Quadrant for BI Platforms, 2011

Evolución de BI

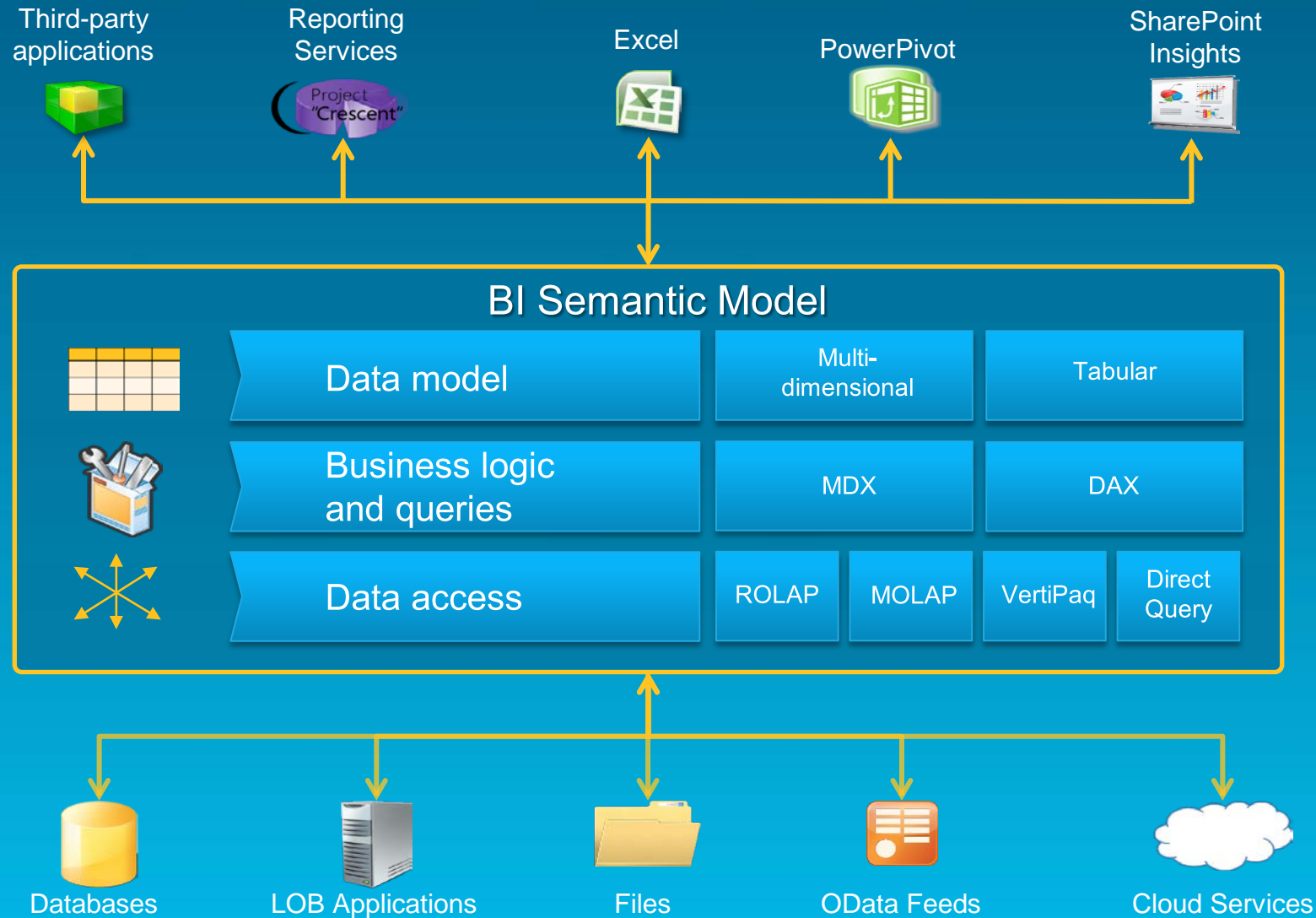


“To properly implement self-service BI, you need to get the data right at the source and make it available to the right people at the right time.”

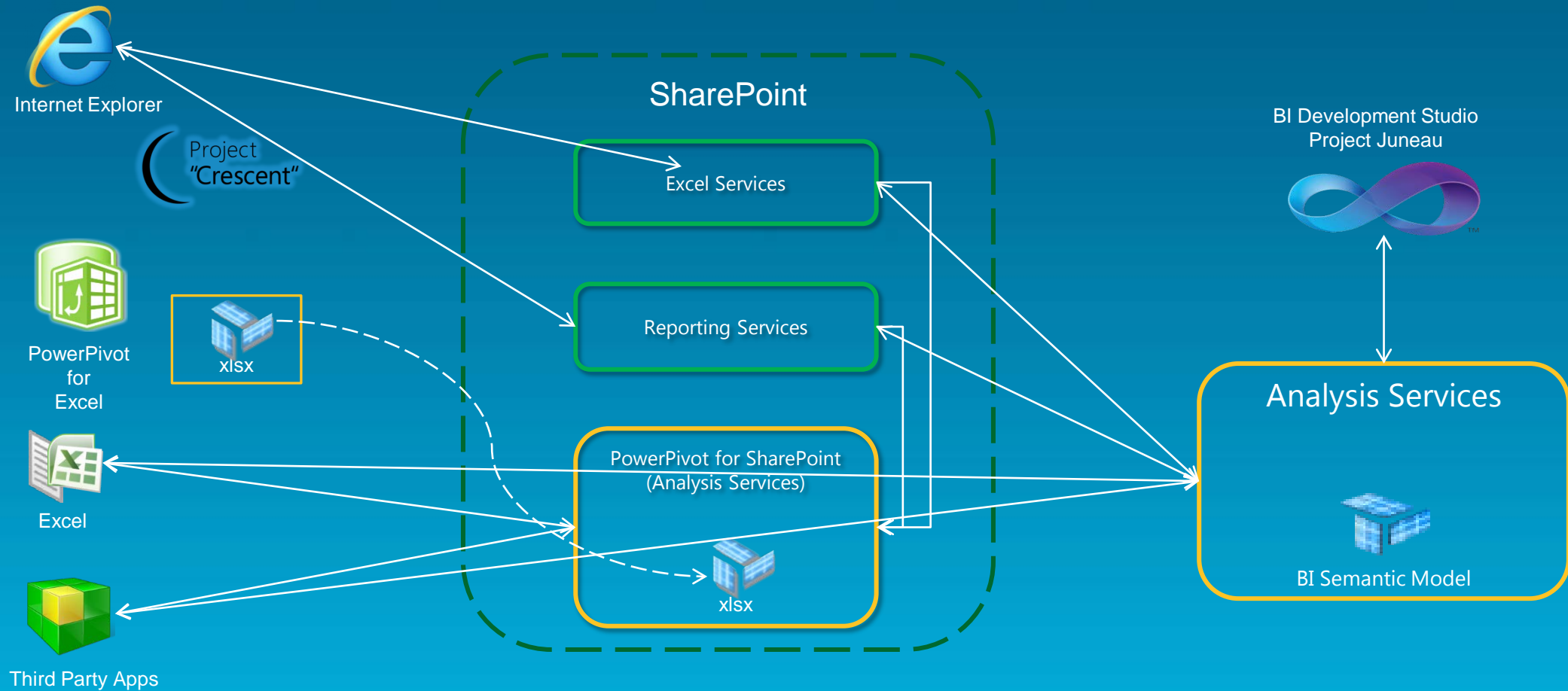
Analysis Services 2011



Arquitectura del modelo semántico de BI



Analysis Services



Personal BI

Team BI

Organizational BI

FileHomeInsertPage LayoutFormulasDataReviewViewPowerPivotTeamOptionsDesign

PowerPivot Window

New MeasureDelete MeasureMeasure Settings

Create KPIEdit KPI SettingsDelete KPI

Create Linked TableUpdate AllSettings

Field ListRelationship Detection

E6

fx28296005.0607

A

B

C

D

E

F

G

H

I

J

Product Sales Compared to Industry Trends

MarketShare Analysis

FiscalYear

20022003

20042005

Month

January

February

March

April

May

June


July

August

September

Row Labels	Sum of SalesAmount	CompetitionSales
Carbonated Drinks	\$28,296,005	\$31,814,310
Soft Drinks	\$25,101,392	\$26,816,974
Sparkling Water	\$2,459,975	\$4,069,934
Tonics	\$734,639	\$929,403
Non-Carbonated Drinks	\$687,636	\$847,194
Energy Drinks	\$625,906	\$770,078
Sports Drinks	\$61,731	\$77,115
Snacks	\$81,615	\$988,520
Chocolates	\$29,314	\$442,157
Fruit Snacks	\$47,733	\$358,425
Nut Snacks	\$4,568	\$187,938
Tea & Juice Drinks	\$274,116	\$338,139
Apple Juice	\$35,687	\$38,083
Ice Tea	\$37,700	\$52,422
Orange Juice	\$200,729	\$247,635
Grand Total	\$29,339,372	\$33,990,163

Sum of SalesAmountCompetitionSales



Values

PowerPivot Field List

Search

☐ CurrencyAlternateKey

☐ CurrencyKey

☐ CurrencyName

☒ Customer

☒ FactWholeSale

☒ Industry Trends - US Market

☐ Category

☐ ID

☐ Industry Sales

☐ SubCategory

☐ Territory

☒ CompetitionSales

☒ Product

Slicers VerticalSlicers Horizontal

FiscalYearMonth

Report FilterColumn Labels

ΣValues

Row LabelsΣ Values

ProductCategoryProductSubcatProductNam

Sum of SalesACompetitionSal

Sheet4Sheet1Sheet2Sheet3

Ready

10:25 AM5/18/2011



Model.bim*

Produc...	OrderDat...	DueDat...	ShipDat...	Custome...	Promotio...	Currenc...	SalesTerritor...
528	762	774	769	14870	1	100	4
528	763	775	770	15319	1	100	4
528	765	777	772	15476	1	100	4
528	765	777	772	16384	1	100	4
528	766	778	773	15861	1	100	4
528	768	780	775	14761	1	100	4
528	768	780	775	26017	1	100	4
528	769	781	776	16018	1	100	4
528	769	781	776	22038	1	100	4
528	769	781	776	22163	1	100	4
528	770	782	777	11260	1	100	4
528	770	782	777	25839	1	100	4
528	771	783	778	23695	1	100	4
528	772	784	779	15198	1	100	4
528	774	786	781	15414	1	100	4
528	774	786	781	15469	1	100	4
528	775	787	782	14901	1	100	4
528	776	788	783	17369	1	100	4
528	777	789	784	14507	1	100	4
528	777	789	784	24930	1	100	4
528	778	790	785	15158	1	100	4

Record: 1 of 60,398

Solution Explorer

ProSoftDrinkModel

- References
- Model.bim

Solution Explorer Team Explorer Class View

Properties

FactWholeSale Table

Basic

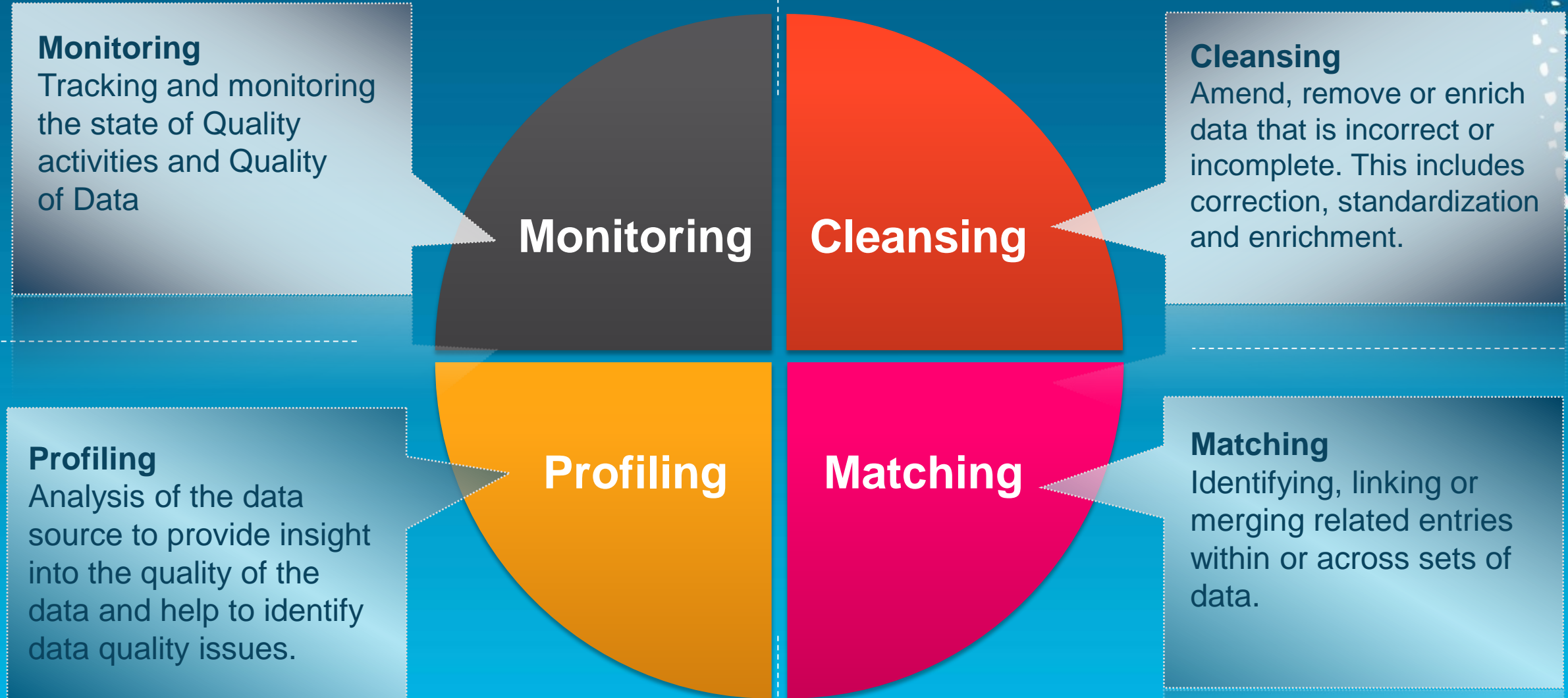
Connection Name	SqlServer localhost AtlantaSoft
Hidden	False
Partitions	(Click to edit)
Source Data	(Click to edit)
Table Description	
Table Name	FactWholeSale

Table Name

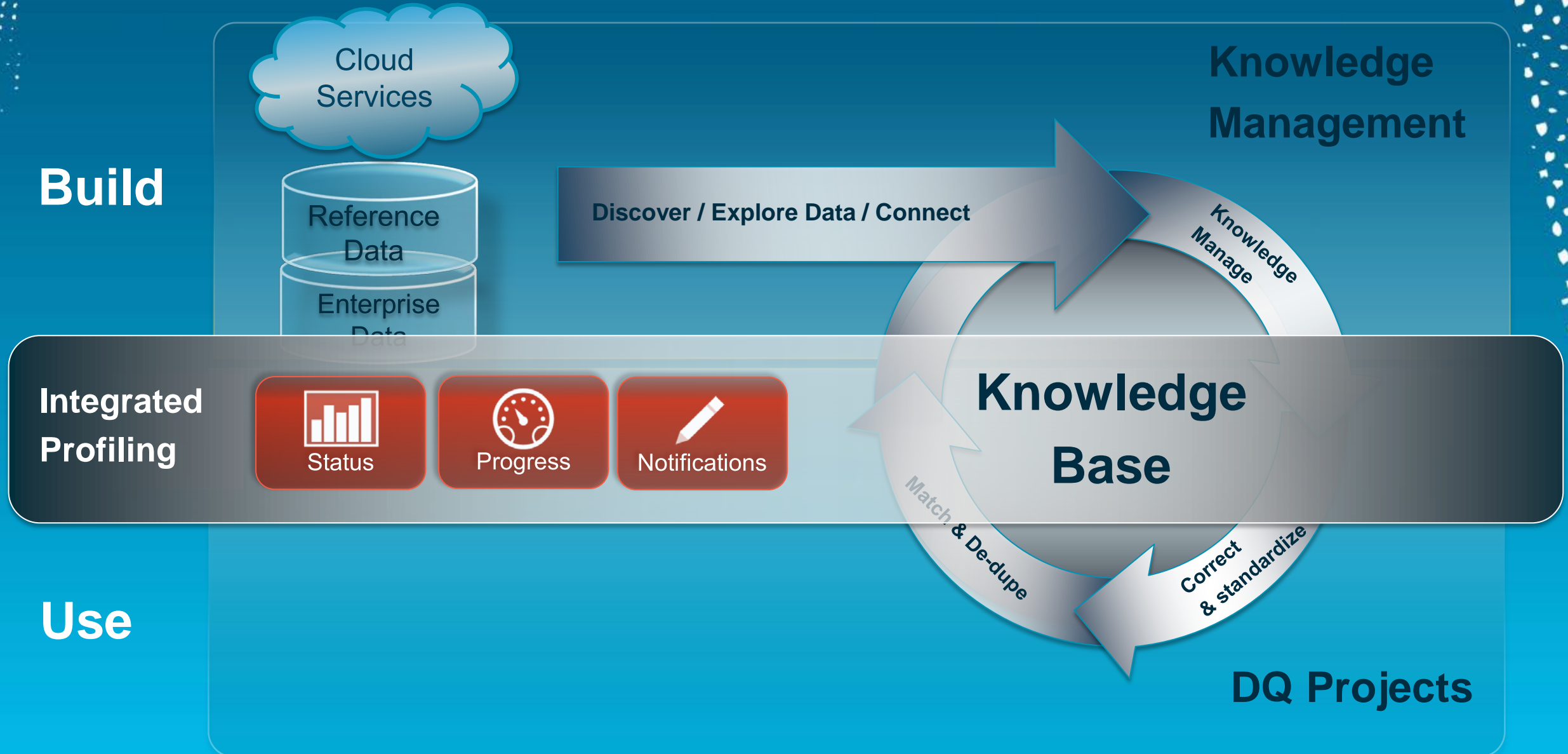
The name of the table, as it is stored in the model



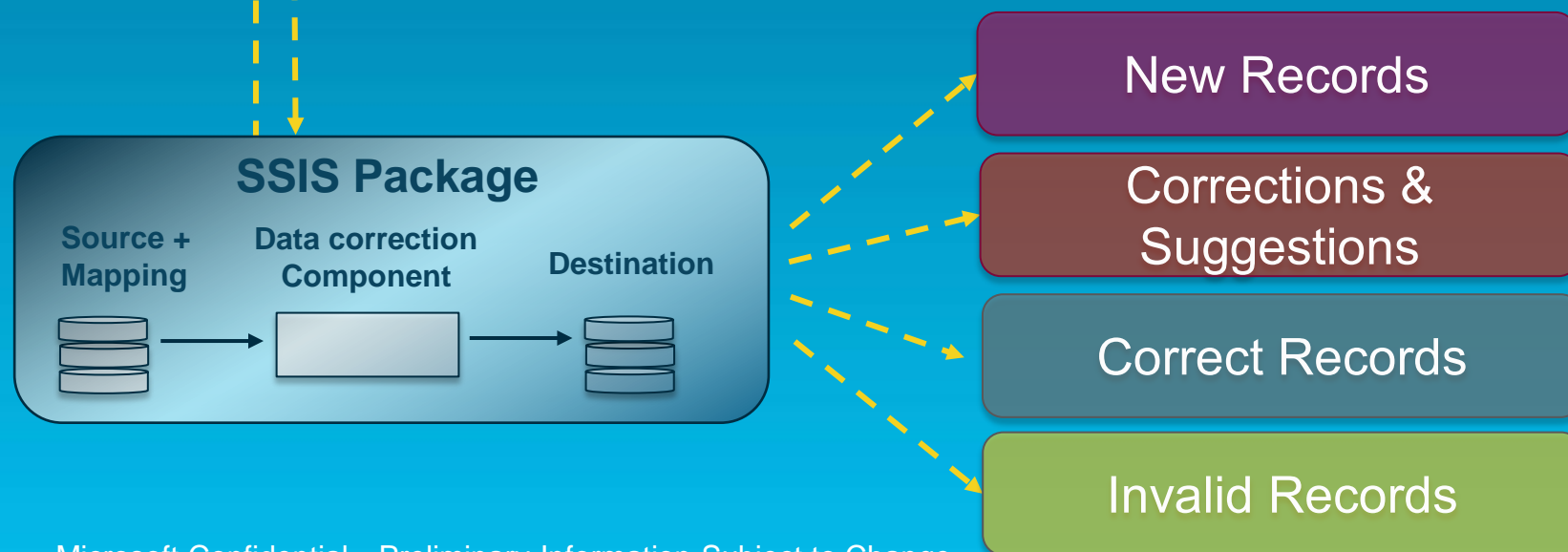
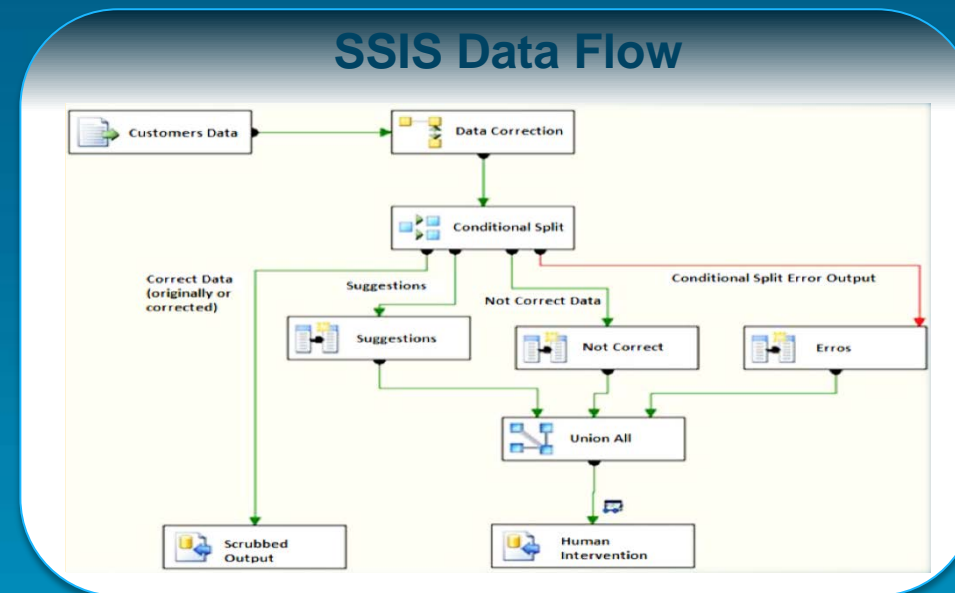
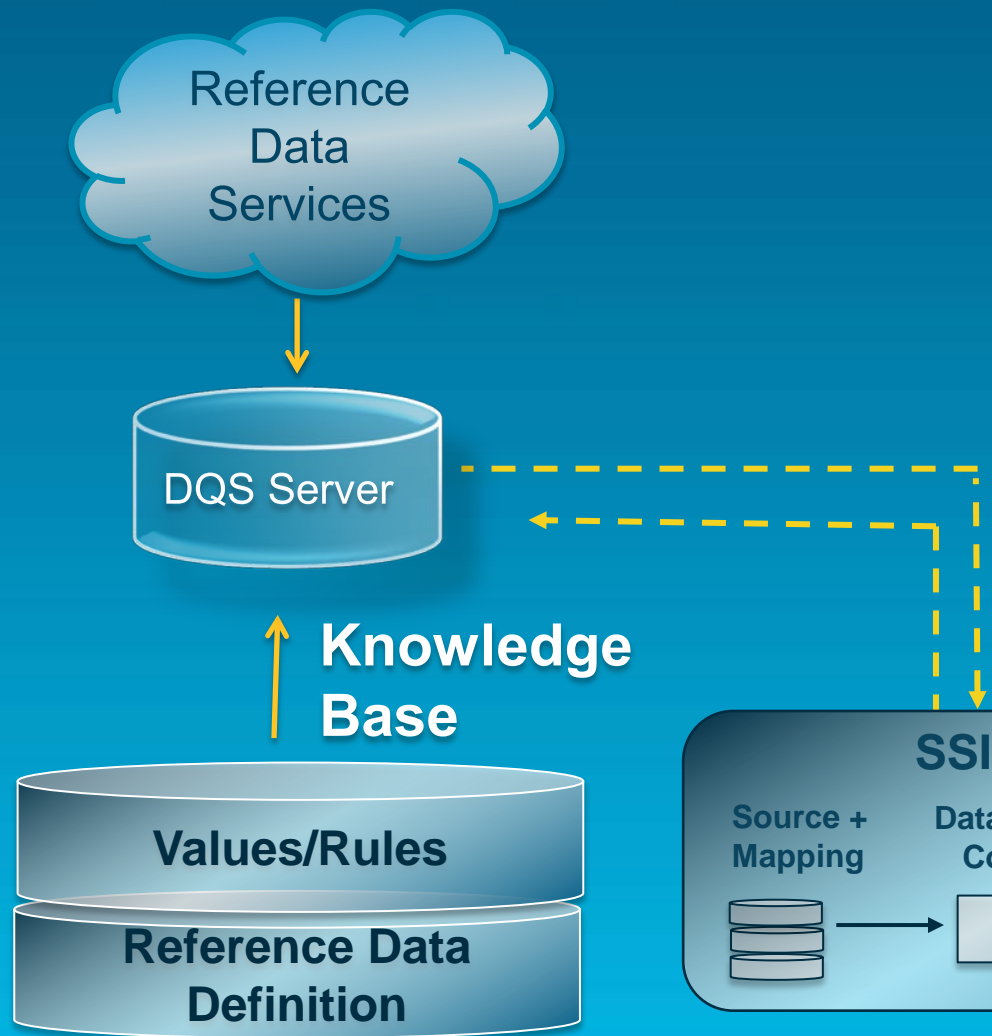
Data Quality



Proceso de Data Quality



Usando SSIS



Data Quality Services

DEMO

Project “Crescent”

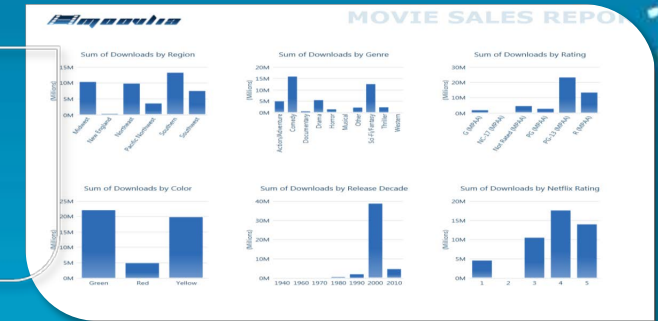
Highly Visual Design Experience



- Interactive, web-based authoring and sharing of information
- Familiar Microsoft Office design patterns
- Powerful data layout with banding, callout and small multiples visualizations

Rich metadata-driven interactivity

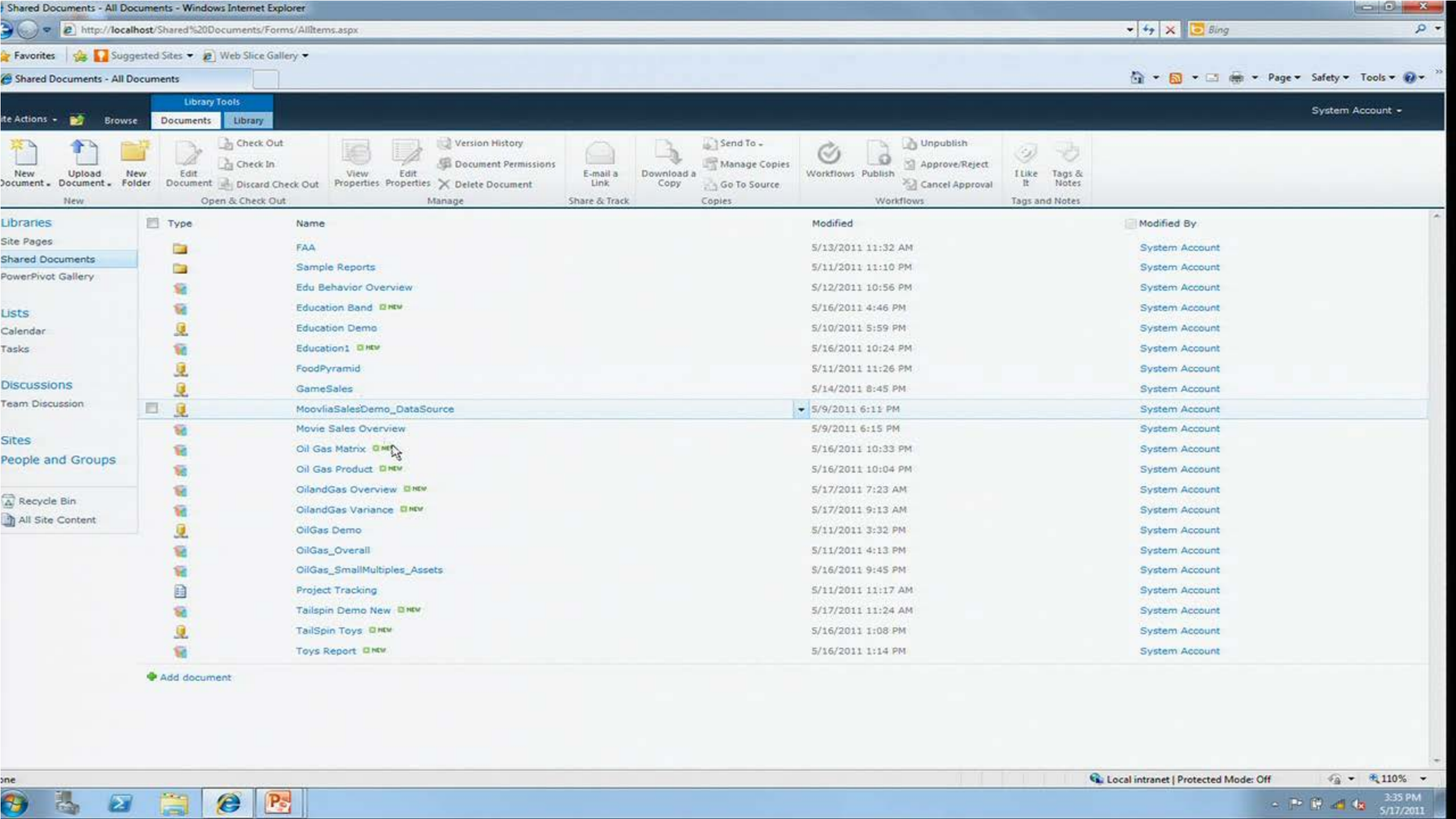
- Fully integrated with PowerPivot
- Drive greater insight through smart and powerful querying
- Zero configuration highlighting and filtering
- Animated trending and comparisons



Presentation-ready at all times



- Interactive Presentation turns pervasive information into persuasive information
- Deliver and collaborate through SharePoint
- Full screen presentation mode for interactive boardroom session



AlwaysOn Availability Groups

AlwaysOn Availability Groups is a new feature that enhances and combines database mirroring and log shipping capabilities

Flexible

- ▶ Multi-database failover
- ▶ Multiple secondaries
 - ▶ Total of 4 secondaries
 - ▶ 2 synchronous secondaries
 - ▶ 1 automatic failover pair
- ▶ Synchronous and asynchronous data movement
- ▶ Built in compression and encryption
- ▶ Automatic and manual failover
- ▶ Flexible failover policy
- ▶ Automatic Page Repair

Integrated

- ▶ Application failover using virtual name
- ▶ Configuration Wizard
- ▶ Dashboard
- ▶ System Center Integration
- ▶ Rich diagnostic infrastructure
- ▶ File-stream replication
- ▶ Replication publisher failover

Efficient

- ▶ Active Secondary
- ▶ Readable Secondary
- ▶ Backup from Secondary
- ▶ Automation using power-shell

A Flexible Solution

- ▶ AlwaysOn provides the flexibility of different HA configurations



Direct attached storage local, regional and geo target



Shared Storage, regional and geo secondaries



Synchronous
Data Movement



Asynchronous Data
Movement

AlwaysOn Active Secondary

- ▶ IT efficiency and cost-effectiveness is critical for businesses
 - ▶ Idle hardware is not an option anymore

AlwaysOn **Active Secondary** enables efficient utilization of high availability hardware resources thereby improving overall IT efficiency

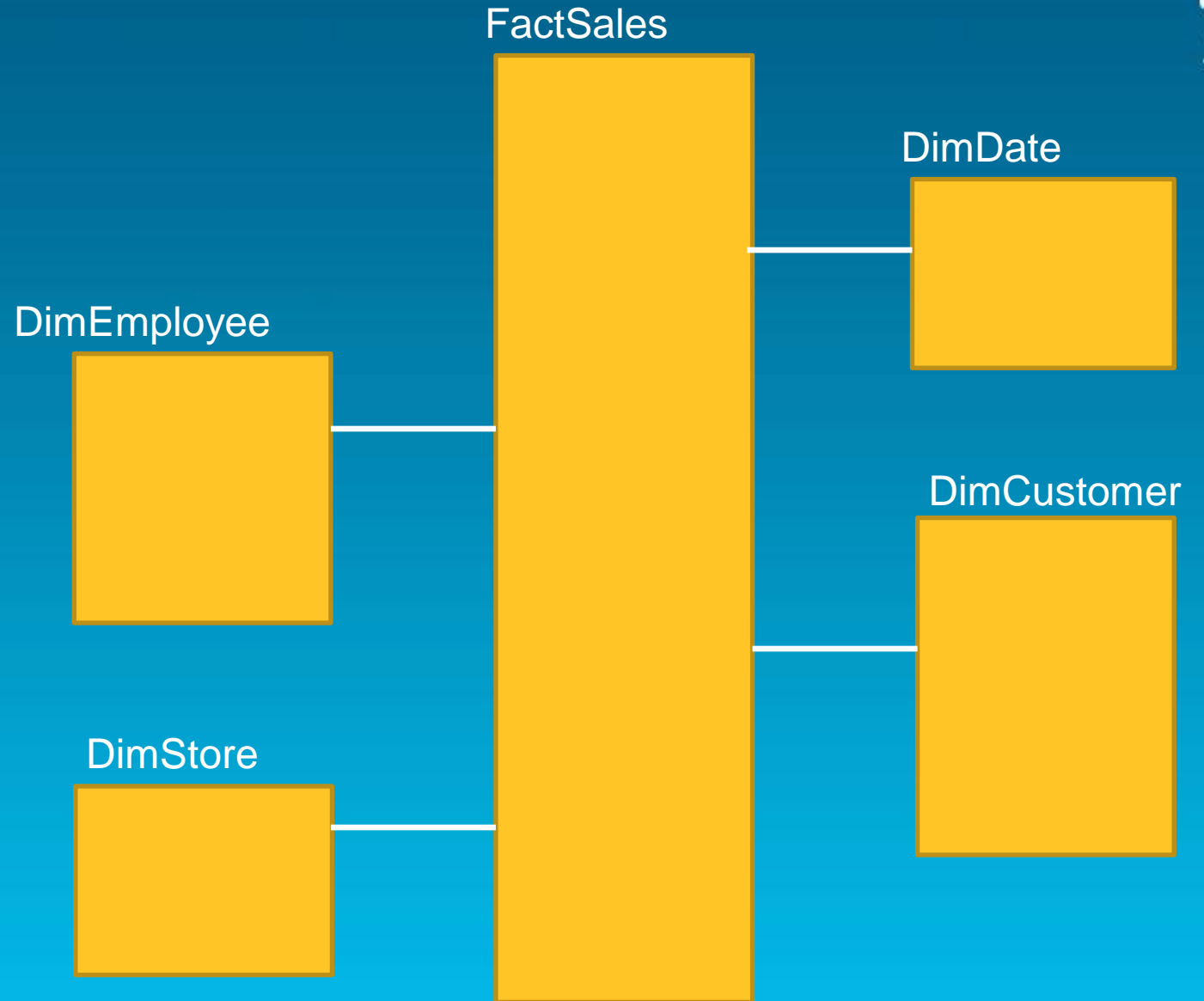
- ▶ Active Secondary can be utilized for
 - ▶ Balancing read-only workloads
 - ▶ Offloading Backup Operations

Star schema

FactSales(CustomerKey int,
ProductKey int,
EmployeeKey int,
StoreKey int,
OrderDateKey int,
SalesAmount money)

DimCustomer(CustomerKey int,
FirstName nvarchar(50),
LastName nvarchar(50),
Birthdate date,
EmailAddress nvarchar(50))

DimProduct ...



Star join query

```
SELECT TOP 10 p.ModelName, p.EnglishDescription,  
             SUM(f.SalesAmount) as SalesAmount  
FROM FactResellerSalesPart f, DimProduct p, DimEmployee e  
WHERE f.ProductKey=p.ProductKey  
      AND e.EmployeeKey=f.EmployeeKey  
      AND f.OrderDateKey >= 20030601  
      AND p.ProductLine = 'M' -- Mountain  
      AND p.ModelName LIKE '%Frame%'  
      AND e.SalesTerritoryKey = 1  
GROUP BY p.ModelName, p.EnglishDescription  
ORDER BY SUM(f.SalesAmount) desc;
```

“Typical” data warehouse queries

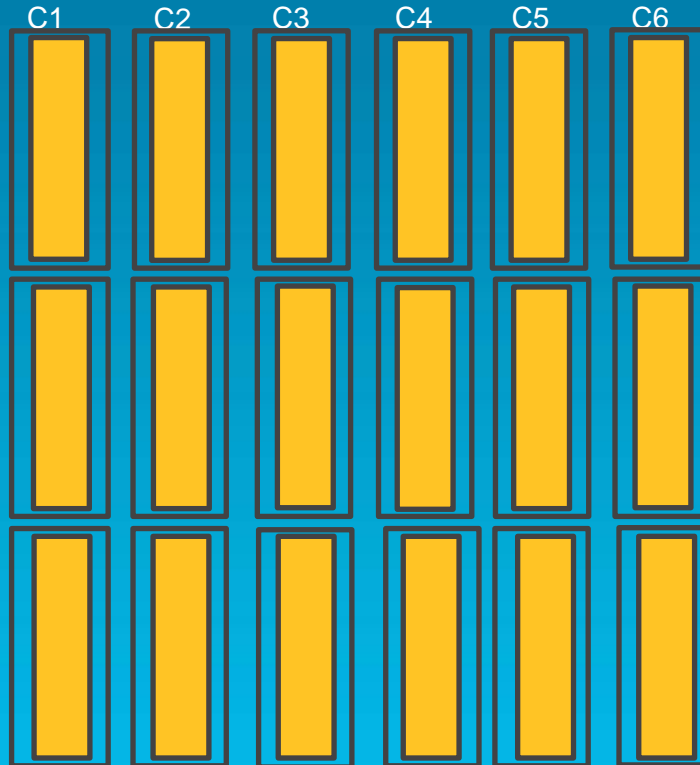
- ▶ Process large amounts of data
- ▶ Reporting queries
- ▶ Often slow (minutes to hours)
- ▶ DBAs spend considerable effort
 - ▶ Designing indexes, tuning queries
 - ▶ Building summary tables, indexed views, OLAP cubes

Columnar storage structure

Row store:



Column store:

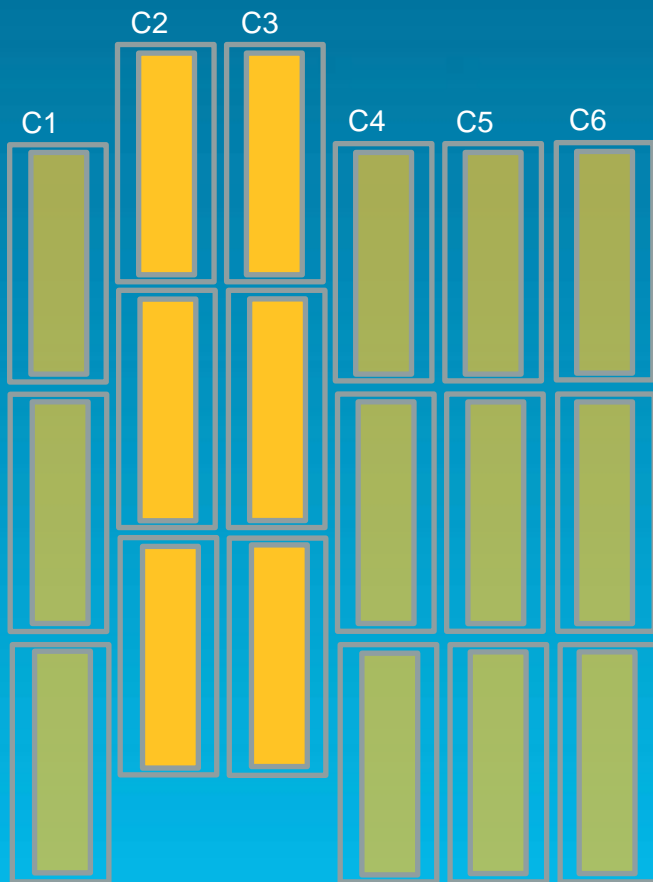


Uses VertiPaq
compression

Pages

Reduced I/O using columnstore indexes

SELECT region, sum (sales) ...



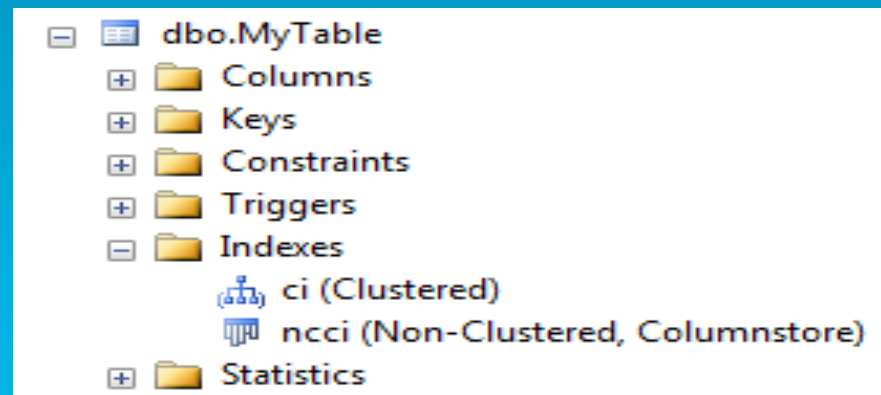
- ▶ Fetches only needed columns from disk
- ▶ Columns are compressed
- ▶ Less IO
- ▶ Better buffer hit rates

Creating the columnstore index

- ▶ Create the table
- ▶ Load data into the table
- ▶ Create a non-clustered columnstore index on all, or some, columns

```
CREATE NONCLUSTERED COLUMNSTORE INDEX ncci ON myTable(OrderDate, ProductID,  
SaleAmount)
```

Object Explorer



The Microsoft logo is centered on a blue background. The background features a white, pixelated, abstract shape on the left side and a geometric pattern of blue triangles on the bottom right. The logo itself is the word "Microsoft" in a white, bold, sans-serif font, with a registered trademark symbol (®) at the end.

© 2011 Microsoft Corporation. All rights reserved. Microsoft, Windows, Windows Vista and other product names are or may be registered trademarks and/or trademarks in the U.S. and/or other countries.
The information herein is for informational purposes only and represents the current view of Microsoft Corporation as of the date of this presentation. Because Microsoft must respond to changing market conditions, it should not be interpreted to be a commitment on the part of Microsoft, and Microsoft cannot guarantee the accuracy of any information provided after the date of this presentation. MICROSOFT MAKES NO WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, AS TO THE INFORMATION IN THIS PRESENTATION.