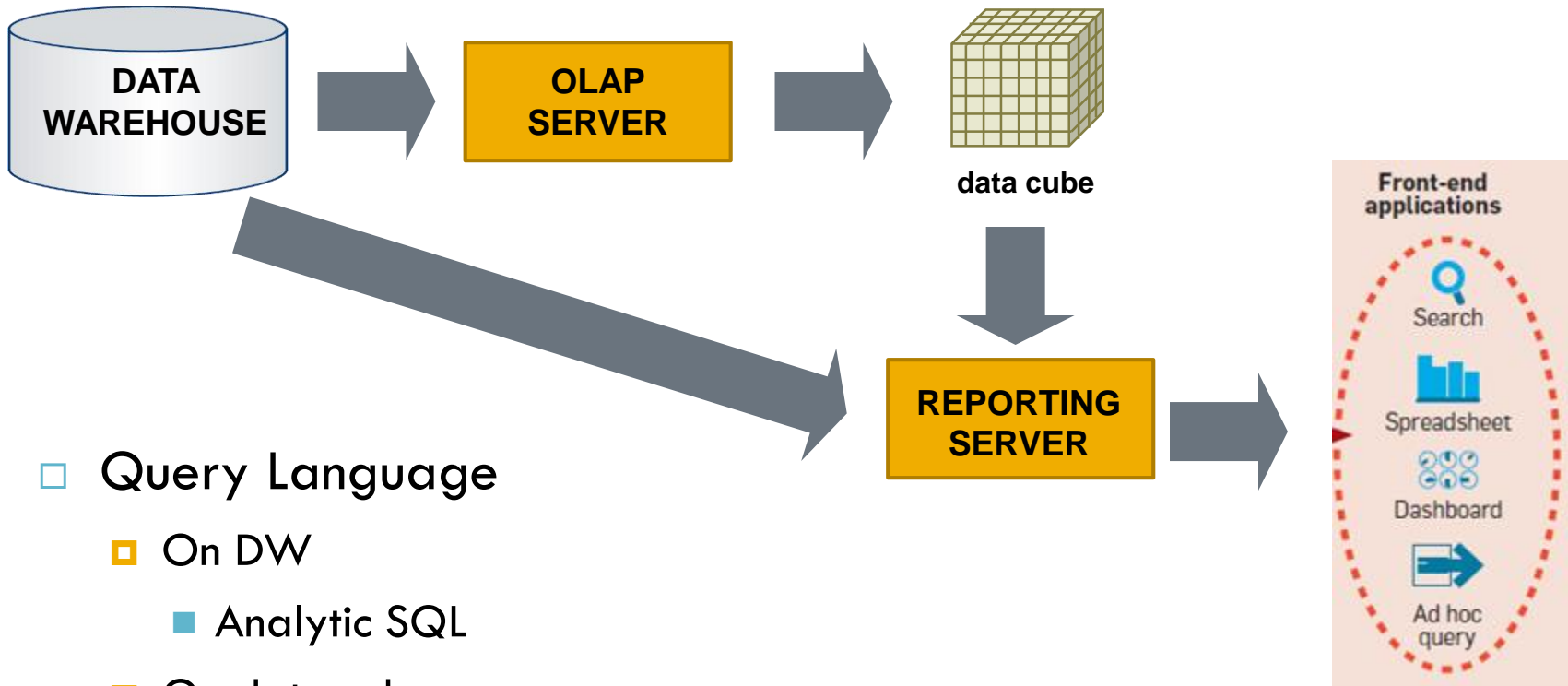


# DATA MANAGEMENT FOR BUSINESS INTELLIGENCE

## Reporting and PowerBI

# Reporting from DW/OLAP

2



## □ Query Language

### ▣ On DW

- Analytic SQL

### ▣ On data cube

- MDX query language (de facto standard)

## □ Reporting server/clients

- ▣ [http://en.wikipedia.org/wiki/List\\_of\\_reporting\\_software](http://en.wikipedia.org/wiki/List_of_reporting_software)

# Clients with Excel (Pivot tables)

3

Product Categories		Internet Sales Amount			
Calendar Year	Calendar Semester	Calendar Quarter	Country	Totale complessivo *	
CY 2001			United Kingdom	United States	\$3.266.373,66
CY 2002	H1 CY 2002	Q3 CY 2002	United Kingdom	United States	\$3.805.710,59
		Q4 CY 2002	United Kingdom	United States	\$1.396.833,62
	H2 CY 2002	Q3 CY 2002	United Kingdom	United States	\$1.327.799,32
		Q4 CY 2002	United Kingdom	United States	\$1.327.799,32
H2 CY 2002 Totale *			United Kingdom	United States	\$2.724.632,94
CY 2002 Totale *			United Kingdom	United States	\$6.530.343,53
CY 2003			United Kingdom	United States	\$9.359.102,62
CY 2004			United Kingdom	United States	\$9.162.324,85
Totale complessivo *			United Kingdom	United States	\$28.318.144,65

**Elenco campi tabella pivot**

Visualizza campi correlati a:

(Tutto)

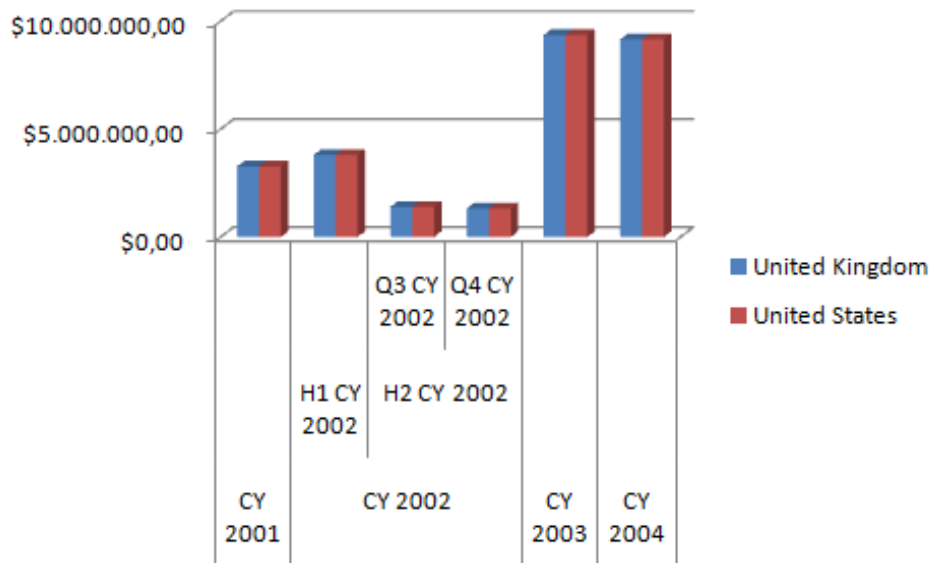
- Internet Sales Orders
- Altri campi
- Product**
  - Product Categories
  - Product Model Categories
  - Product Model Lines
  - Financial
  - History

Trascinare i campi nelle aree sottostanti:

Filtro rapporto: Product Cate...  
 Etichette di col...: Geography

Etichette di riga: Date.Calendar  
 Valori: Internet Sale...

Rinvia aggiornament...



# Clients with browsers, 3D visual analytics

4

The image shows a web browser window displaying a pivot table and a 3D cube explorer interface. The browser window is titled "D:\Institutional\Corso\_LSA\LAB2006\04 - OLAP\practice\sales.htm - Microsoft...". The pivot table is titled "Tabella pivot1" and shows data for "Promotions" and "Ship Date.Calendar" for "CY 2003". The table has columns for "Country", "Customer Count", and "Totale cor". The 3D cube explorer is titled "DBMiner Enterprise - [#1- 3D Cube Explorer]" and shows a 3D cube with axes labeled "Gender", "Customers", and "Education Level". The cube is colored by "Sales Average" and sized by "Profit". The axes are labeled with values: "Partial High School", "WA", "OR", "CA", and "M".

Country	Customer Count	Customer Count	Totale cor
Australia	24	2155	
Canada	5	799	
France	8	807	
Germany	7	844	
United Kingdom	10	989	
United States	9	3366	
Totale complessivo	63	8960	

# Clients: Dashboards

5

- Dashboards, scorecard («cruscotti») are intended for
  - ▣ a quick and easy delivery of the overall state of company business status
  - ▣ with a strong visual component
  - ▣ involving few dimension and measures
    - Space, time, branches
- They represent the end product of datawarehousing

# Clients: Dashboards

6

<https://www.microstrategy.com/us/get-started/demo>

### Category Management Dashboard

**Category Sales Analysis by Region**

Select Metrics:  Revenue  LQ Revenue  Profit  LQ Profit

**Category Performance For Trailing 6 Months: Revenue vs. Forecast Revenue (USD)**

**Books**

**Movies**

**Electronics**

**Music**

### Regional Performance Management Dashboard

Region: **Mid-Atlantic**

**2006 Revenue Growth**

22.5%

2006 revenue growth of 22.5% compares to a target of 22.7%.

**2006 Profit Growth**

22.4%

2006 profit growth of 22.4% compares to a target of 25%.

**2006 Profit Margin**

17.3%

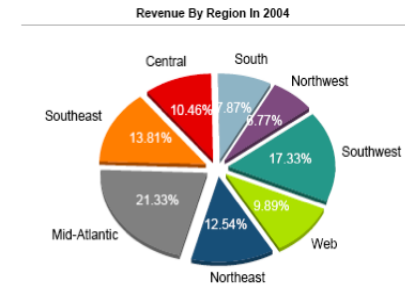
2006 profit margin of 17.3% compares to a target of 16.1%.

Revenue | Profit | Profit Margin

### Operational Performance Scorecard

Status	Trend	Metrics	Target	This Month	Last Month	%Δ From LM	This Month LY	%Δ From TM LY
▲	▲	Revenue	\$ 1,076,234	\$ 1,296,667	\$957,865	35%	\$ 1,445,116	-10%
▲	▲	Profit	\$246,777	\$312,376	\$231,740	35%	\$352,001	-11%
◆	▶	Margin	25,78%	24,09%	24,19%	-0,4%	24,36%	-1,1%
◆	▲	Units Sold	26,661	32,122	22,800	41%	34,047	-6%
◆	▲	Order Count	22,919	21,420	13,020	65%	17,000	26%
◆	▼	Avg Revenue per Order	\$139	\$61	\$74	-18%	\$85	-29%
◆	▲	Customer Count	8,300	10,000	6,091	24%	9,380	7%
◆	▲	Avg Revenue per Customer	108	\$130	\$118	10%	\$154	-16%

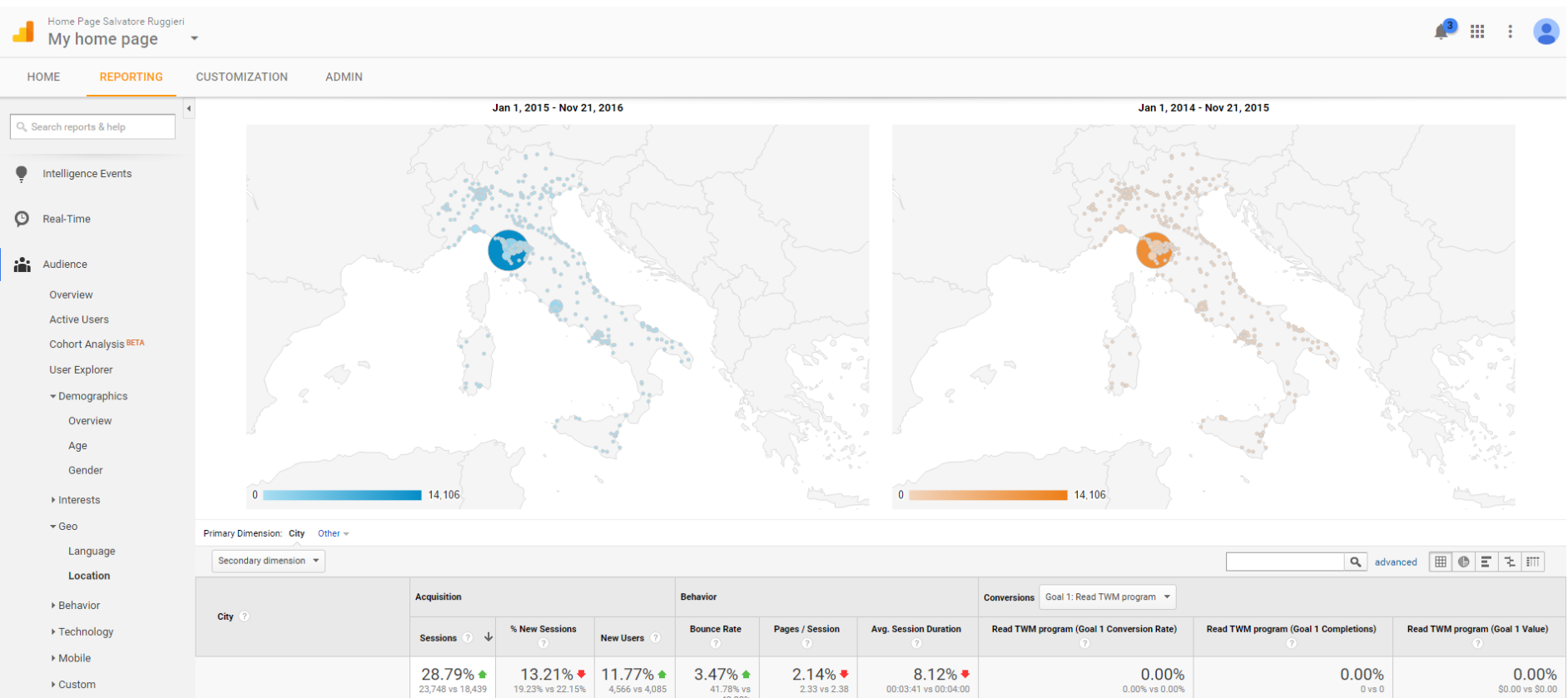
This Month: Dec 04 | Trend ▲ From Prior Month: ▲ More than 10% | ▶ Between -5% and 10% | ▼ Less than -5% | Abbreviations: LM = Last Month LY = Last Year



# Clients: Dashboards

7

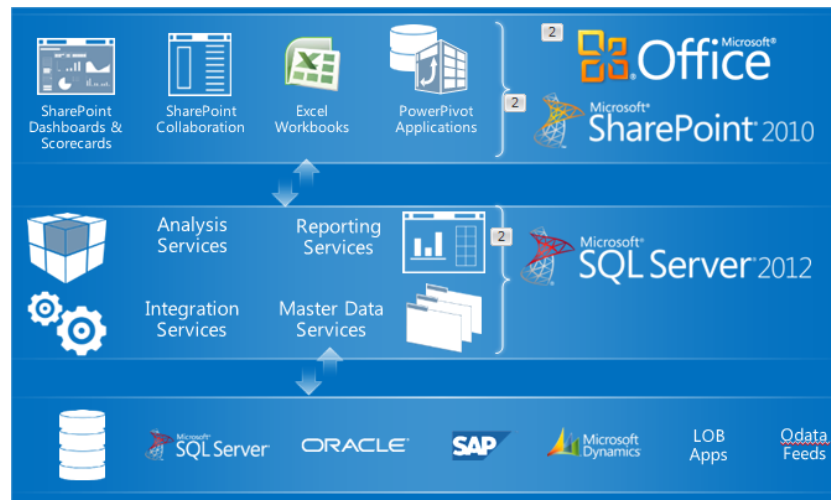
<https://www.google.com/intl/en/analytics/>



# SQL Server Suite

8

	On-premises	Cloud
DB/DW	SQL Server	Azure
Data integration	SQL Server Integration Services (SSIS)	Power Query for Excel
OLAP	SQL Server Analysis Services (SSAS)	Power Pivot for Excel
Reporting	SQL Server Reporting Services (SSRS) & Power BI Desktop	Power BI



Business Intelligence Lab



# Reporting server: SSRS

9

- **SSRS** is a tool for Reporting
  - It can be used independently from SQL Server as data source
  - Development with SSDT
  - Data sources
    - Relational, OLAP, Data mining
  - Type of reports
    - Table, Matrix, Chart, ...
  - Our Server:
    - Set in Project properties -> TargetServerURL
      - <http://apa.di.unipi.it/reportserver>
  - Access to reports
    - Web: <http://apa.di.unipi.it/reports>
    - Web service
    - Export to Excel, PDF, HTML, XML, ...

# Power BI Desktop

10

- PBI Desktop is a tool allowing the generation of reports
- The reports are local in your machine and may be moved to the cloud in the future (Power Bi Services)
- The report may be deployed in a specific server accessible by web by any user wants navigate them

# Web clients

11

