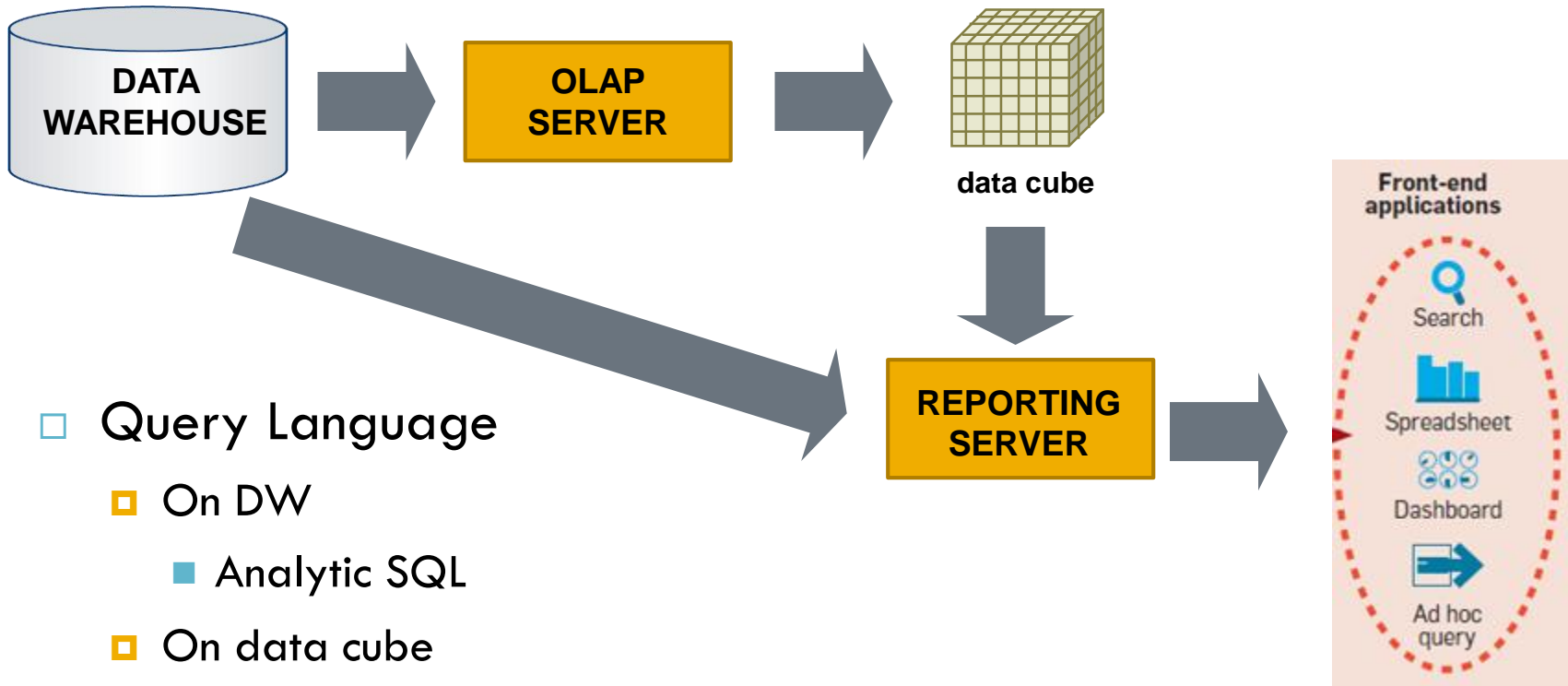


DATA SCIENCE LABORATORY

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

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)

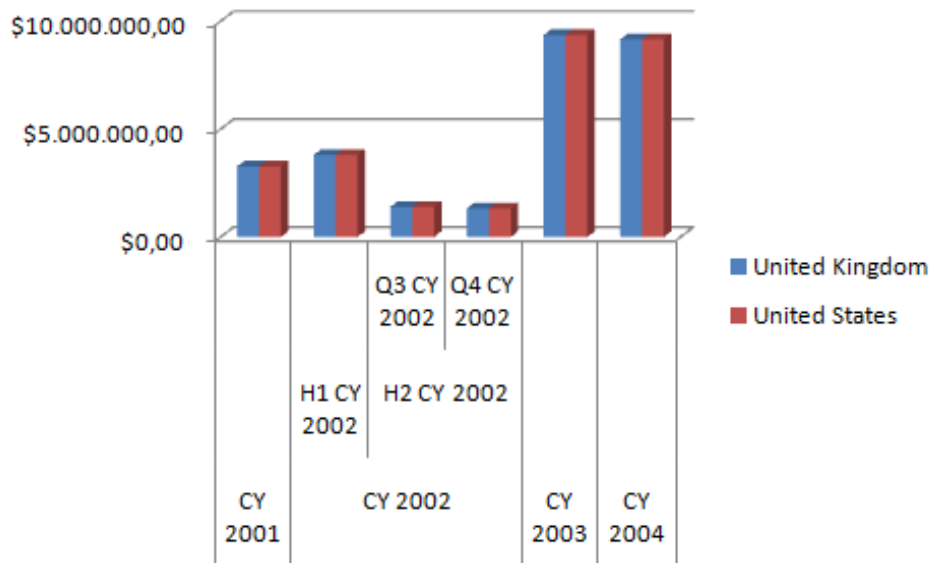
- Internet Sales Orders
- Altri campi
- Product**
 - Product Categories
 - Product Model Categories
 - Product Model Lines
 - Financial
 - History

Trascinare i campi nelle aree sottostanti:

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

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

Rinvia aggiornam...



Clients with browsers, 3D visual analytics

4

The image shows a web browser window displaying a pivot table and a 3D cube explorer application. 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 data is as follows:

| Country | 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 |

The 3D cube explorer application is titled "DBMiner Enterprise - [#1- 3D Cube Explorer]". It shows a tree view of "Data Cubes" with "FoodMart 2000" selected. The 3D cube is visualized with axes for "Gender", "Customers", and "Education Level". The cube is colored by "Sales Average" and sized by "Profit". The axes are labeled with "W/A", "OR", and "CA". The color scale ranges from 6.35117 to 6.48345. The size scale ranges from 13569.8 to 23884.9.

Clients: Dashboards

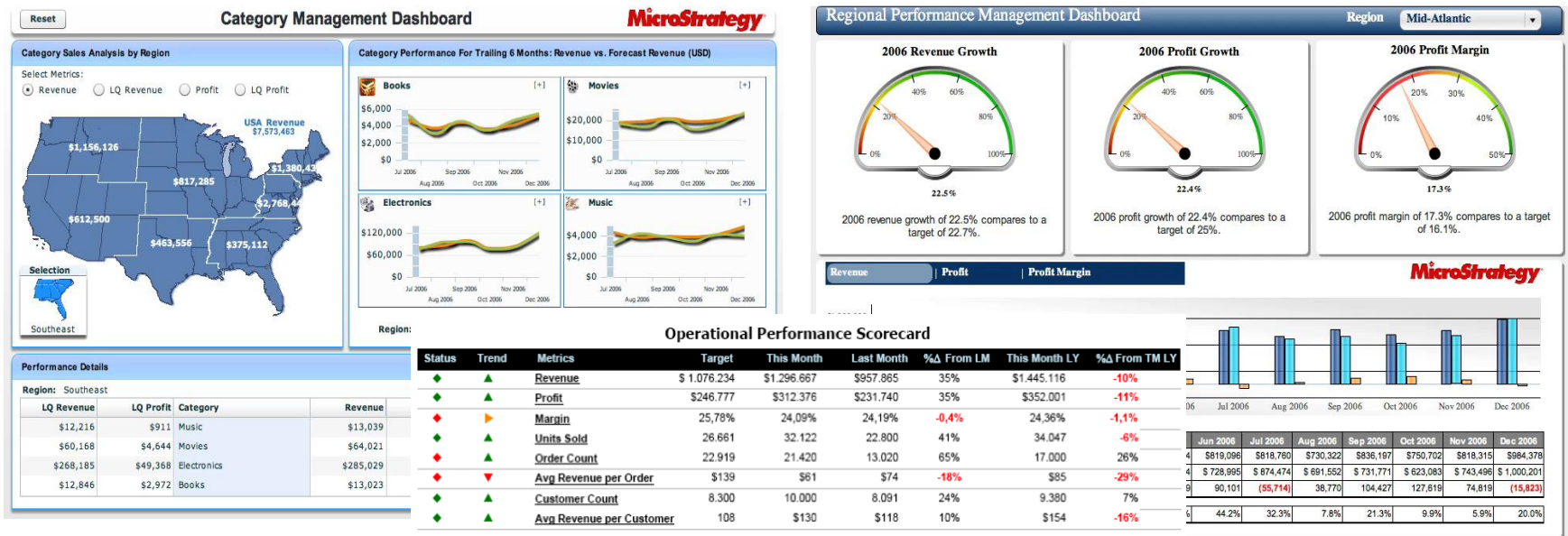
5

- 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>

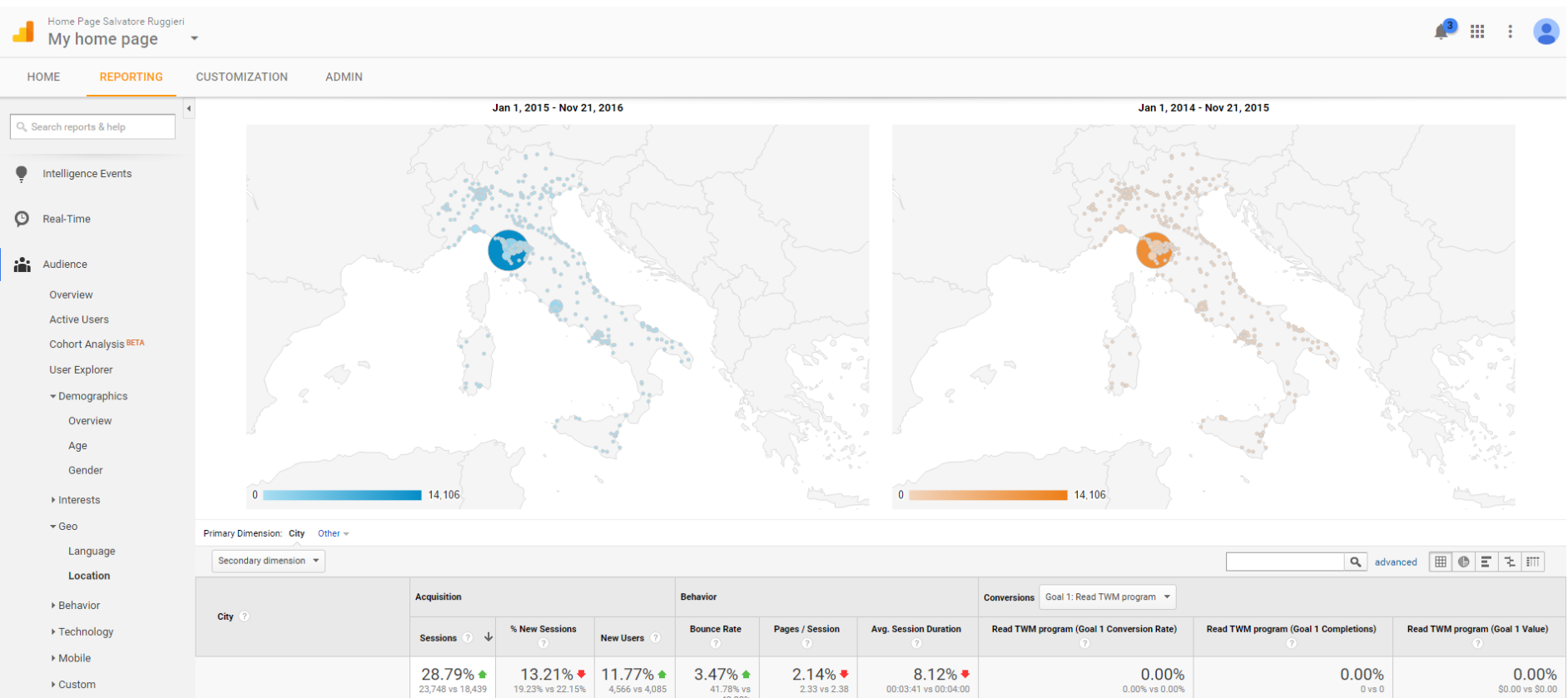


This Month: Dec 04 Trend ▲ From Prior Month: ▲ More than 10% ▶ Between -5% and 10% ▼ Less than -5% Abbreviations: LM = Last Month LY = Last Year

Clients: Dashboards

7

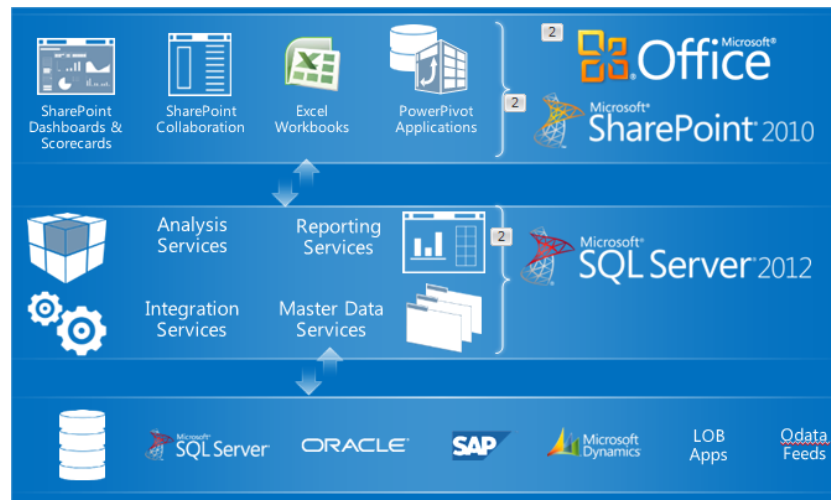
<https://www.google.com/intl/en/analytics/>



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 |



Lab of Data Science

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

