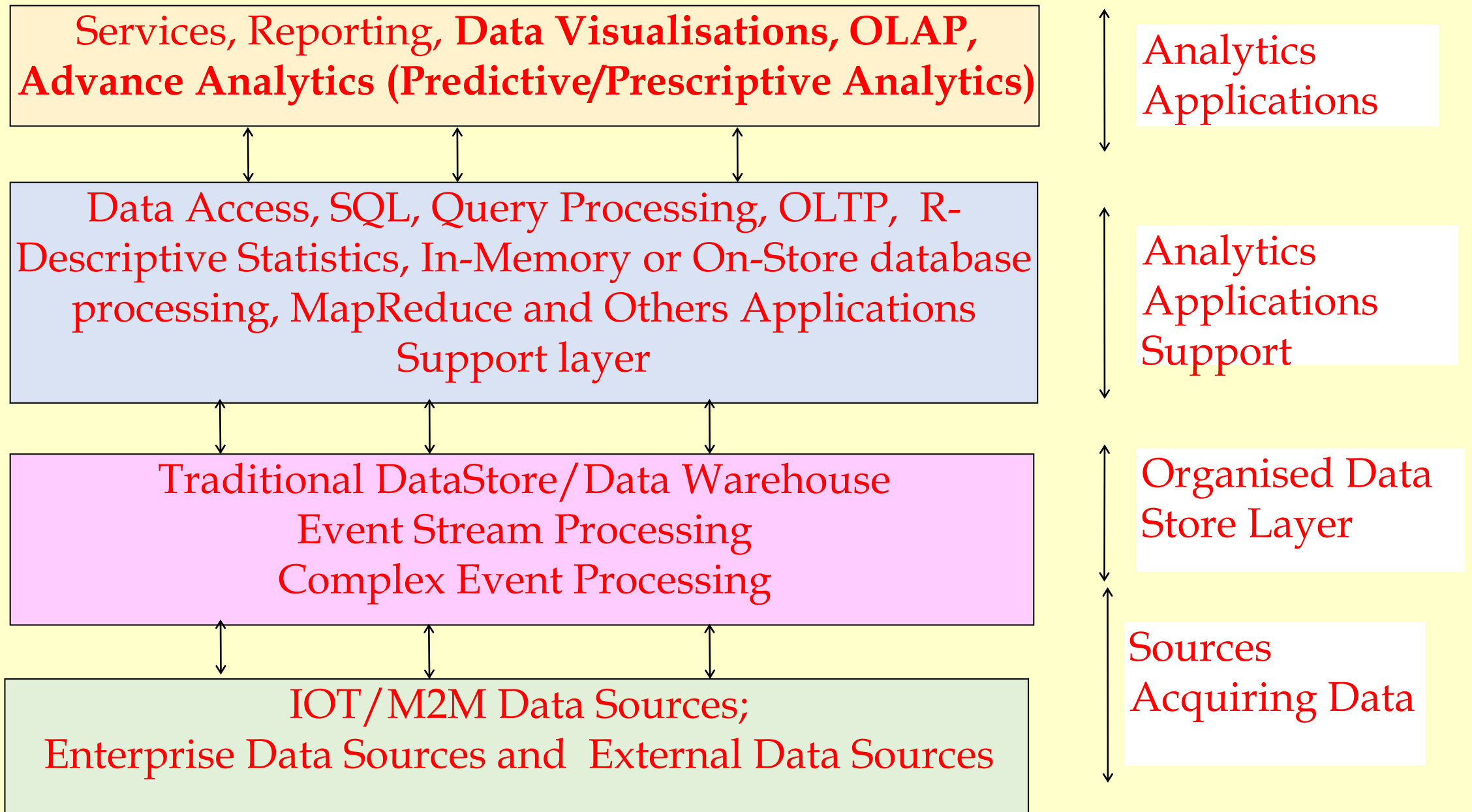


# Lesson 10

## Advanced Analytics, OLAP and Data Visualisation

# Predictive analytics

- Advanced phase of analytics
- User interpreting the outputs of descriptive analytics



**Fig. 5.5 Data Visualisations, OLAP, Advance Analytics (Predictive/Prescriptive Analytics)**

# OLAP

- Enables viewing of analysed data up to desired granularity
- Enables view of rollup (finer granules data to coarse granules data) or drill down (coarser granules data to finer granules data)

# OLAP

- Enables obtaining summarized information and automated reports from large volume database

# OLAP

- A significant improvement over query systems
- An interactive system to show different summaries of multidimensional data by interactively selecting the attributes in a multidimensional data cube

# OLAP

- Enables analysing data in multiple dimensions in a structure called data cube
- Each dimension represents a hierarchy
- Each dimension has a dimension attribute which defines the dimension and summary of measure attribute

# A Slice of Data-Cube

- Can be viewed when values of multiple dimensions are fixed.
- A slice of data relationship between two attributes can be individually visualized



## Slice of n-dimensional structure

- Will have  $2^n$  faces (tables)
- Each table and corresponding visual gives a relationship between two attributes
- The tables are cross referenced.

# A Slice of Data-Cube

- Six different cross referenced tables can be created during OLAP for three-dimensional structure for analysing data.

## A **Slice** of An $n$ -dimensional structure

- will have  $2-n$  faces (tables). Each table and corresponding visual gives a relationship between two attributes. The tables are cross referenced.

# A Dice of Data-Cube

- Can be viewed with variable values in multiple dimensions
- A cubical dice has six faces, each face marked distinctly. Face 1 has one dot, face 2 two, and so on. Sixth face has six dots.

# A Dice of Data-Cube

- Six different cross referenced tables can be created during OLAP for three-dimensional structure for analysing data.

# A **Dice** of $n$ -dimensional structure

- Will have  $2^n$  faces (tables)
- Each table and corresponding visual gives a relationship between two attributes
- The cross referenced tables

# Slicing/dicing functionalities

- Mean selecting specific values for these attributes, which are then displayed on top of the cross-tables

# OLAP Three Types:

- Multidimensional OLAP (MOLAP)
- Relational OLAP (ROLAP)
- Hybrid OLAP (HOLAP)



# Summary

- Actions, for example, Online Analytical Processing (OLAP) for the analytics,
- Reporting
- Generating spreadsheets

# Summary

We learnt

- Visualizations or dashboard displays of the analysed results,
- Slicing
- Dicing

# End of Lesson 10 on Advanced Analytic, OLAP and Data Visualisation