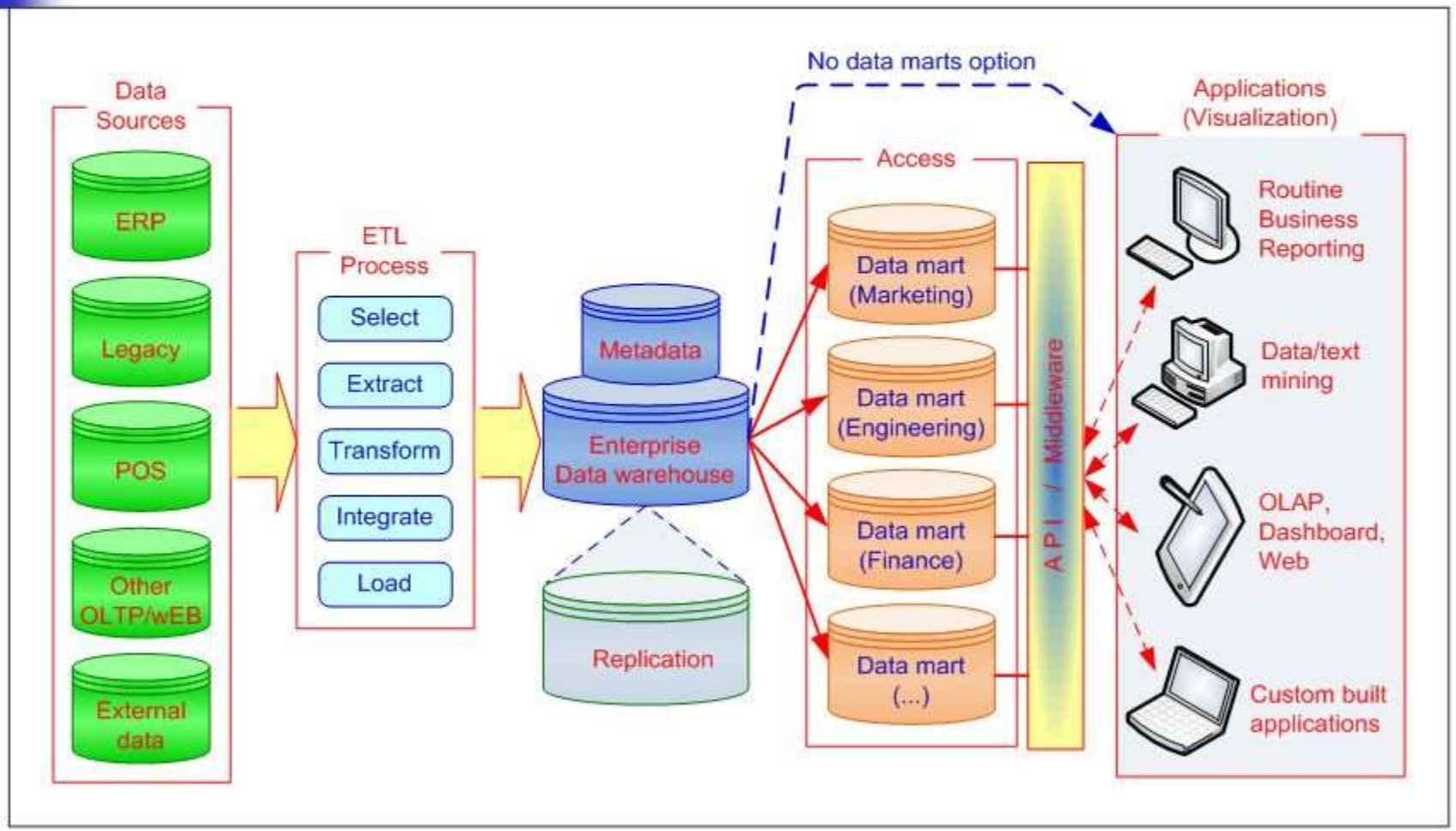
DW Framework



DW Architecture

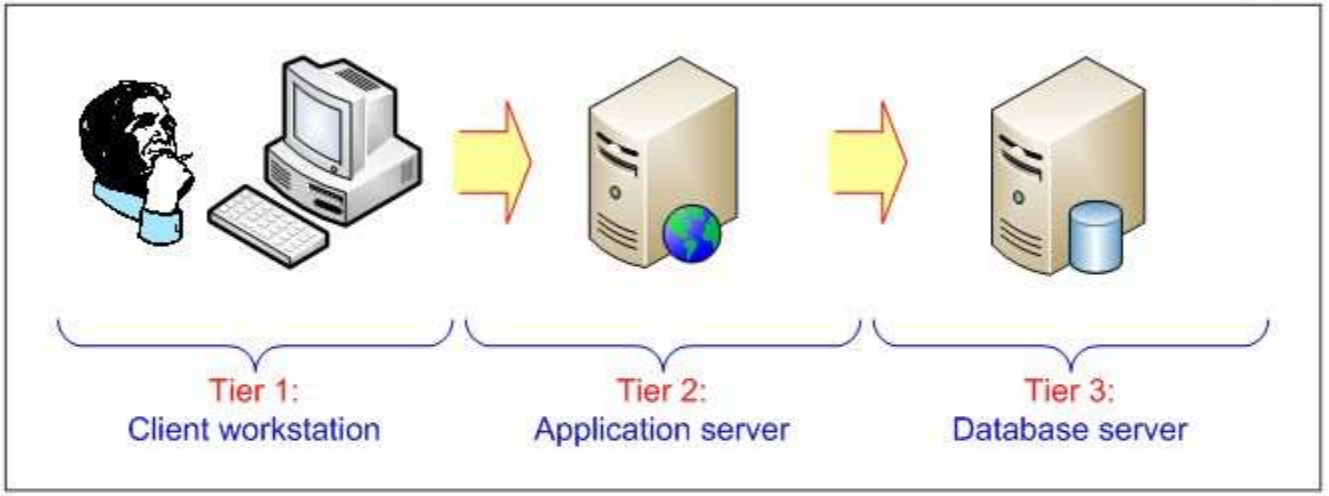
- Three-tier architecture
  1. Data acquisition software (back-end)
  2. The data warehouse that contains the data & software
  3. Client (front-end) software that allows users to access and analyze data from the warehouse
- Two-tier architecture

  First 2 tiers in three-tier architecture is combined into one

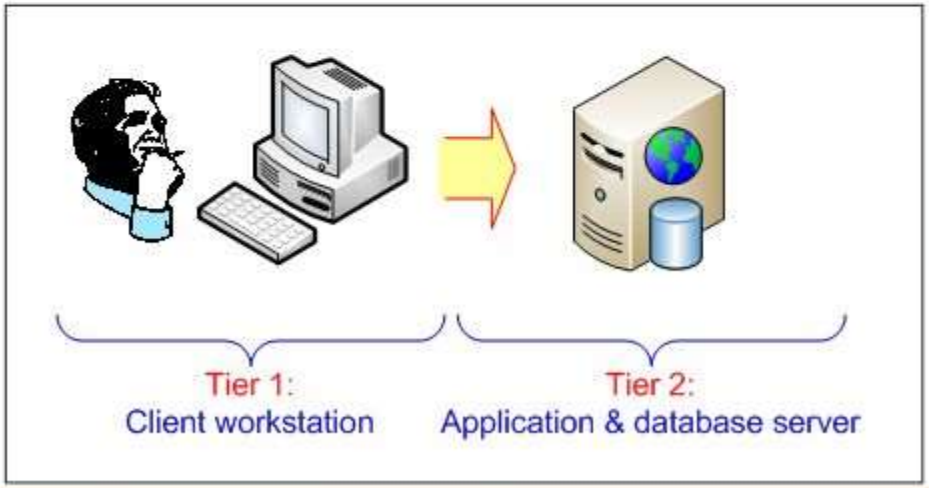
  Sometimes there is only one tier

DW Architectures

3-tier architecture

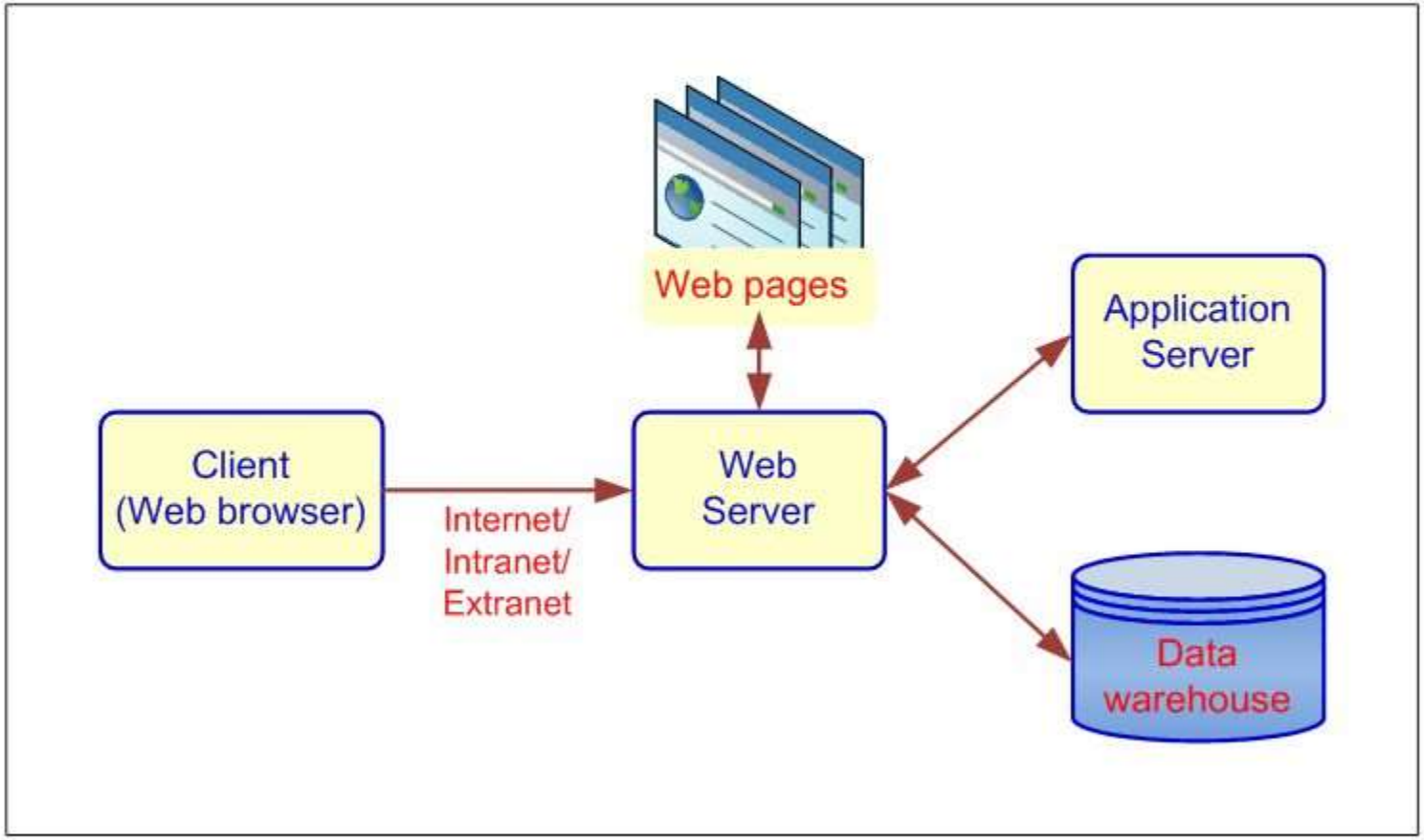


2-tier architecture



1-tier Architecture

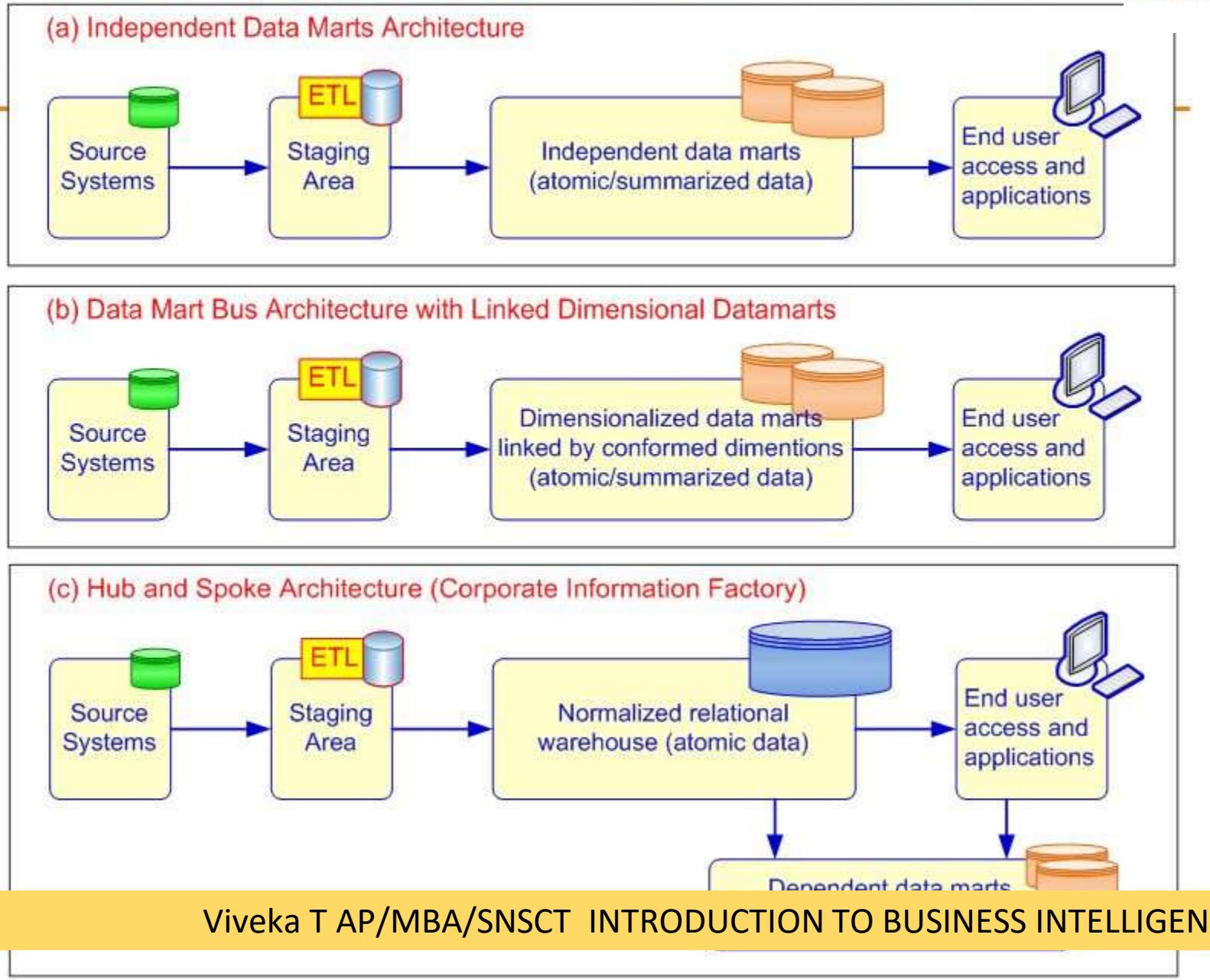
A Web-based DW Architecture



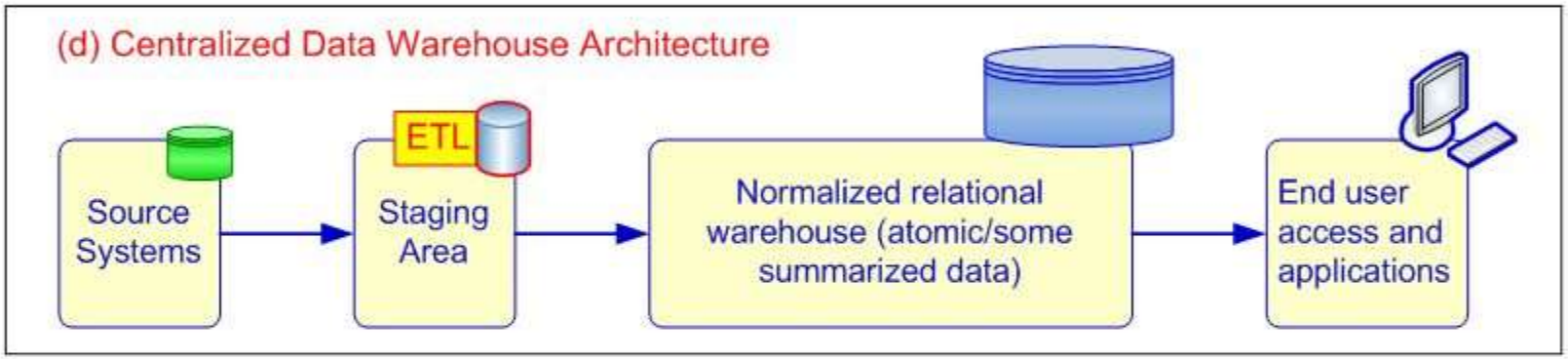
Data Warehousing Architectures

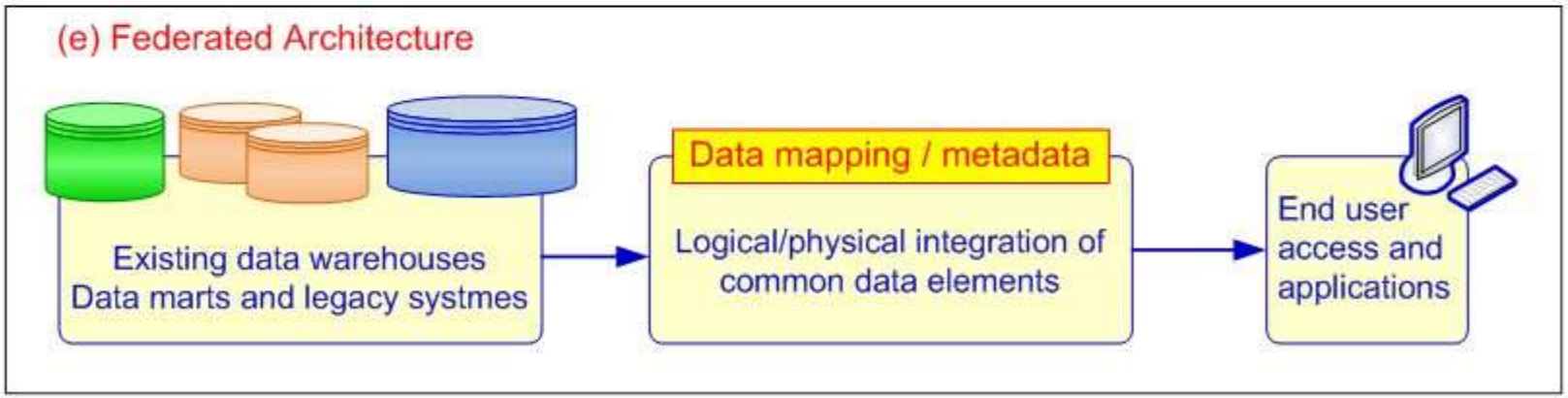
- Issues to consider when deciding which architecture to use:
  - Which database management system (DBMS) should be used?
  - Will parallel processing and/or partitioning be used?
  - Will data migration tools be used to load the data warehouse?
  - What tools will be used to support data retrieval and analysis?

Alternative DW Architectures



Alternative DW Architectures





Alternative DW Architectures

1. Independent Data Marts
2. Data Mart Bus Architecture
3. Hub-and-Spoke Architecture
4. Centralized Data Warehouse
5. Federated Data Warehouse

- Each has pros and cons!