Data Mining

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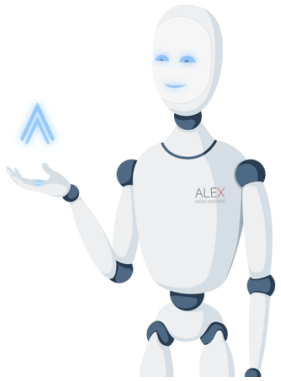
Points to Cover

- Data Warehouse Roles and Structures
- Position of the Data Warehouse
- Data Marts and the Data Warehouse
- The Data Mart is More Specialized
- The Data Mart is More Specialized
- Dependent Data Mart
- Independent Data Mart
- Hybrid Data Marts
- Data Mart Design

Enterprisewide Data Warehouse

1) Large scale implementation
2) Scope the entire business
3) Data from all subject areas
4) Developed incrementally
5) Single source of enterprisewide data
6) Single distribution point to dependent data marts



Data Warehouse Roles and Structures

The DW has the following primary functions:

1) It is a direct reflection of the business rules of the enterprise.
2) It is the collection point for strategic information.
3) It is the historical store of strategic information.
4) It is the source of information later delivered to data marts.
5) It is the source of stable data regardless of how the business processes may change.

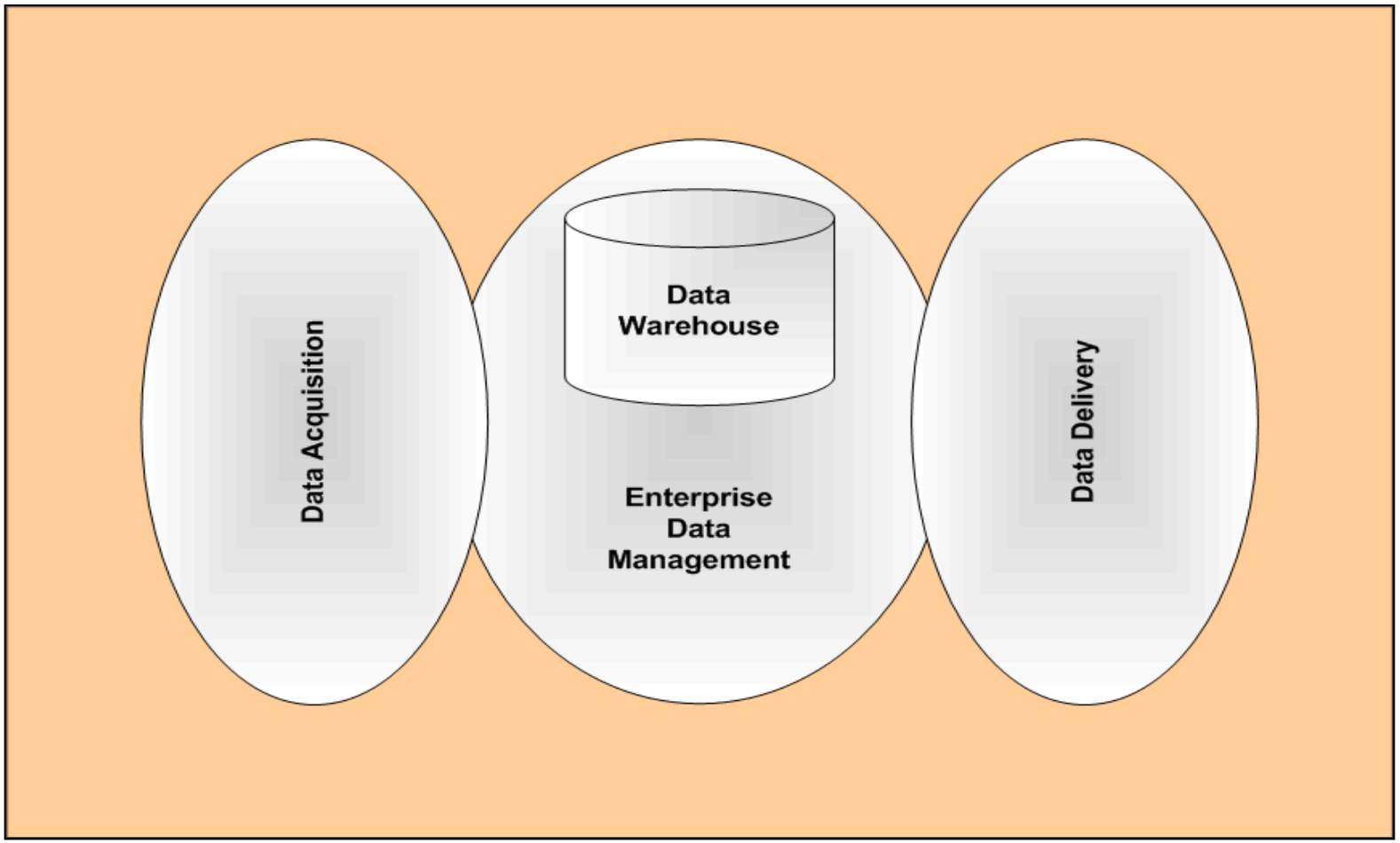
Data Marts

- Is quite common, you may want to customize your warehouse's architecture for different groups within your organization. You can do this by adding **data marts**, which are systems designed for a particular line of business.

An example of data marts like:

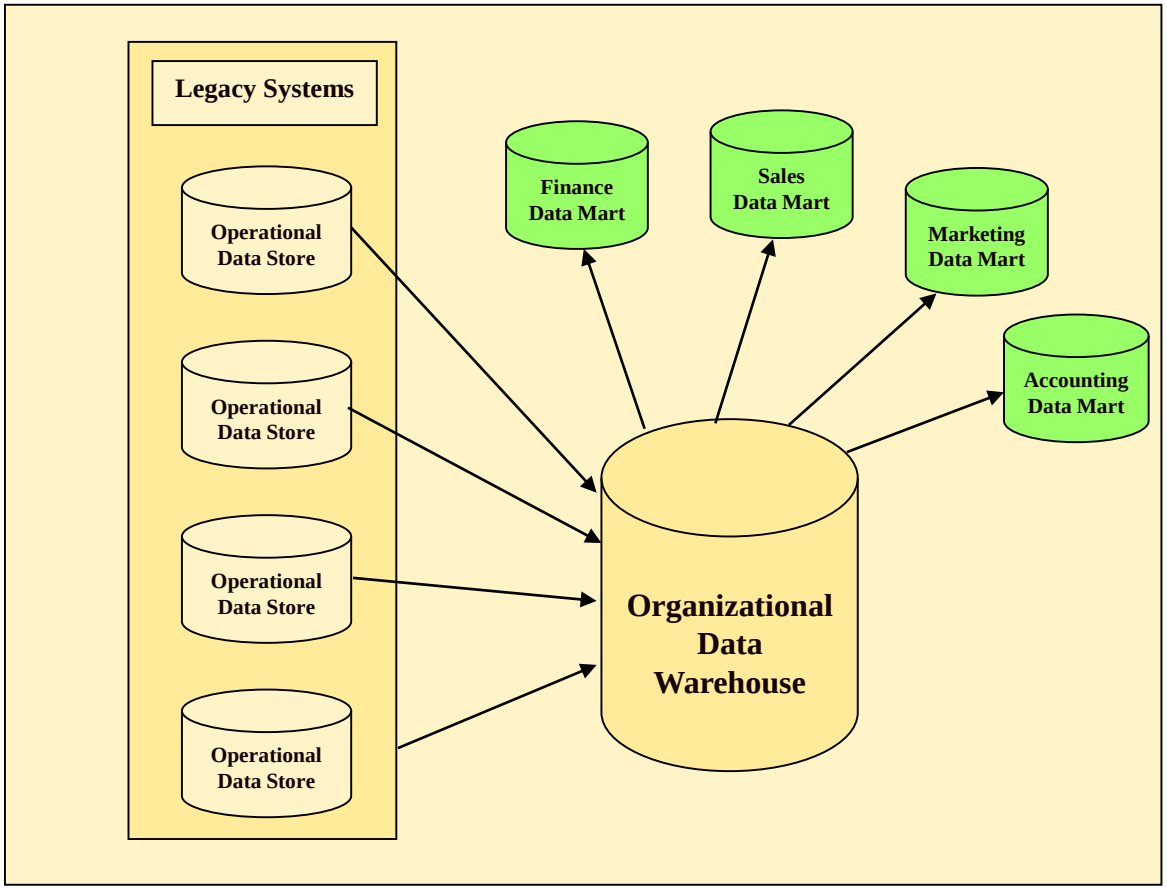
- **purchasing,**
- **sales,**
- **Inventories,**
- **Finance,**
- **Human Resources,**

Position of the Data Warehouse Within the Organization



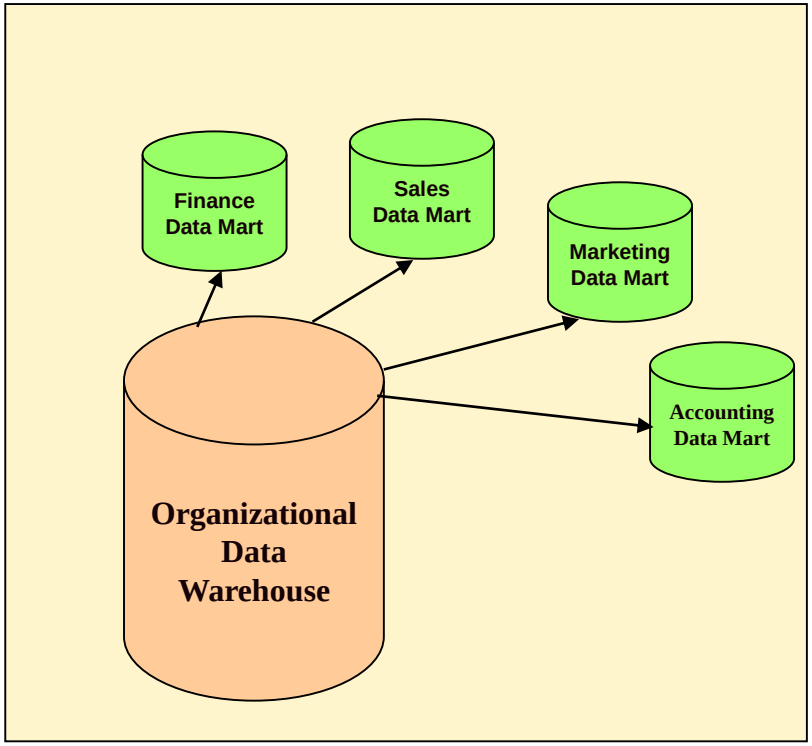
Data Marts and the Data Warehouse

- **Legacy systems** feed data to the warehouse.
- **The warehouse feeds** specialized information to departments.



The Data Mart is More Specialized

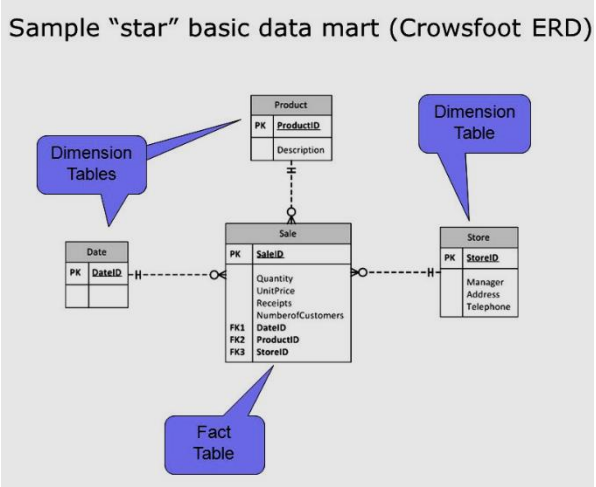
The data mart serves the needs of **one business unit**, not the organization.



The Data Mart is More Specialized

The data mart serves the needs of one business unit, not the organization **so data mart include the following pointes**:

1. Department
2. Summarized, aggregated data
3. Star join design
4. Limited historical data
5. Limited data volume
6. Requirements driven data
7. Focused on departmental need
8. Multi-dimensional DBMS technologies



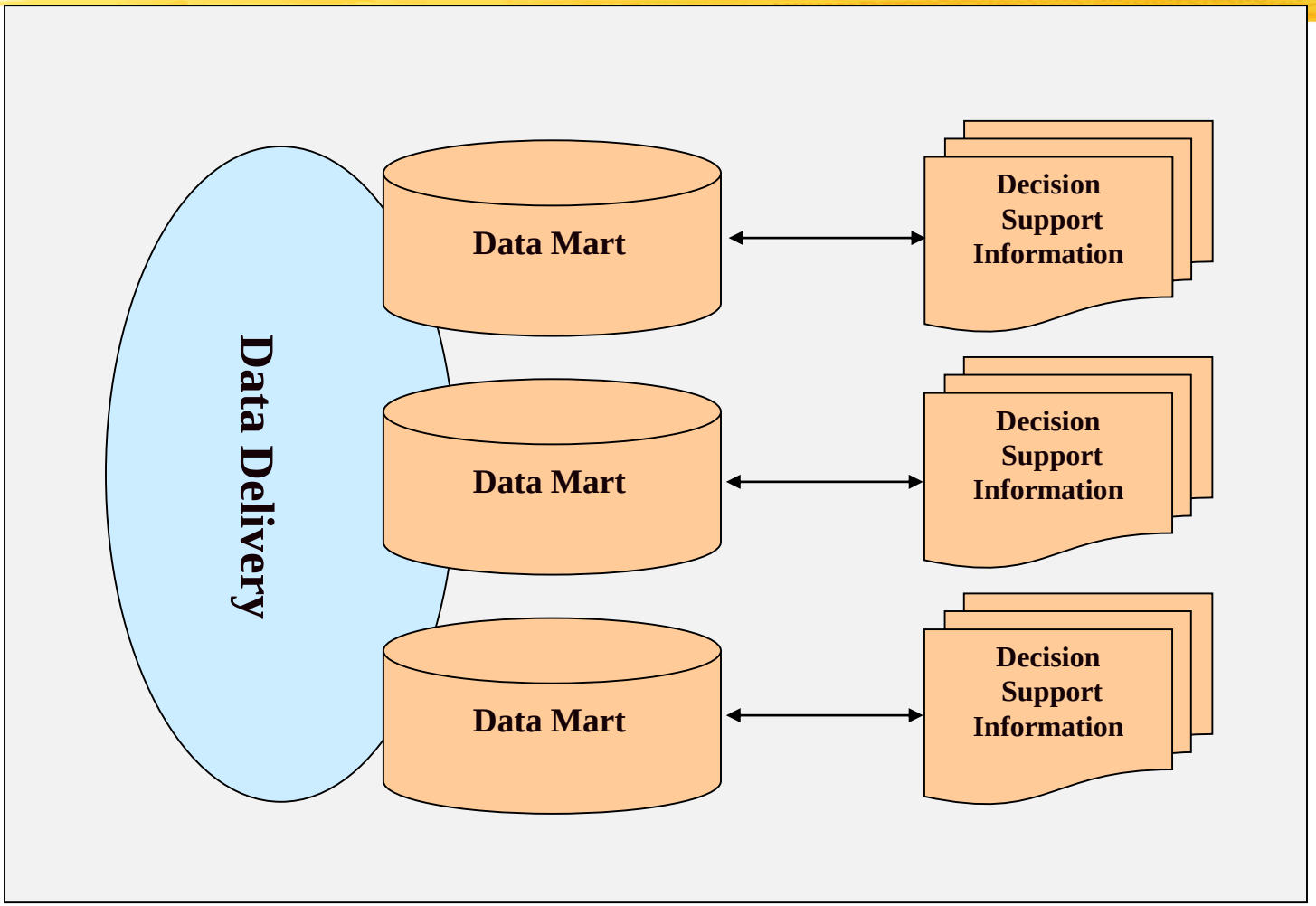
Data Marts Properties

1) A data mart is a smaller, more focused data warehouse. It reflects the business rules of a specific business unit.
2) The data mart does not need to cleanse its data because that was done when it went into the warehouse.
3) It is a set of tables for direct access by users.
4) It typically is not a source for traditional analysis.

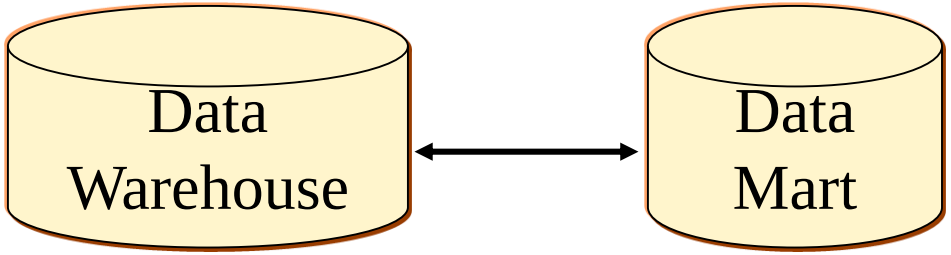
Reasons for Creating a Data Mart

1) To give users more flexible access to the data they need to analyse most often.
2) To provide data in a form that matches the collective view of a group of users
3) To improve end-user response time.
4) Building a data mart is simpler compared with establishing a corporate data warehouse.
5) The cost of implementing data marts is far less than that required to establish a data warehouse.

Position of the Data Mart Within the Organization



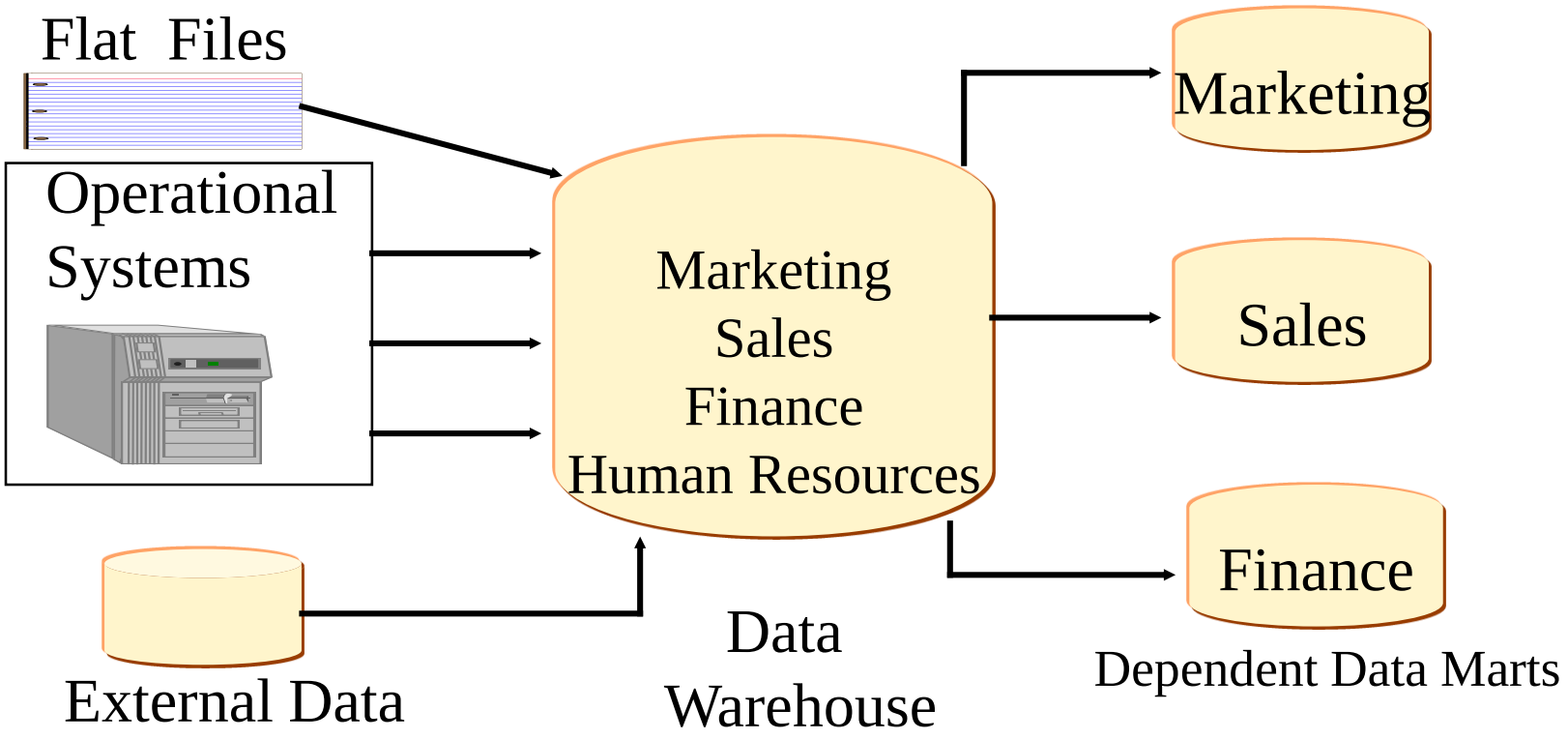
Data Warehouses Versus Data Marts



Property	Data Warehouse	Data Mart
Scope	Enterprise	Department
Subject	Multiple	Single-subject
Data Source	Many	Few
Size(typical)	100 GB to> n TB	<100 GB
Implementation time	Months to years	Months

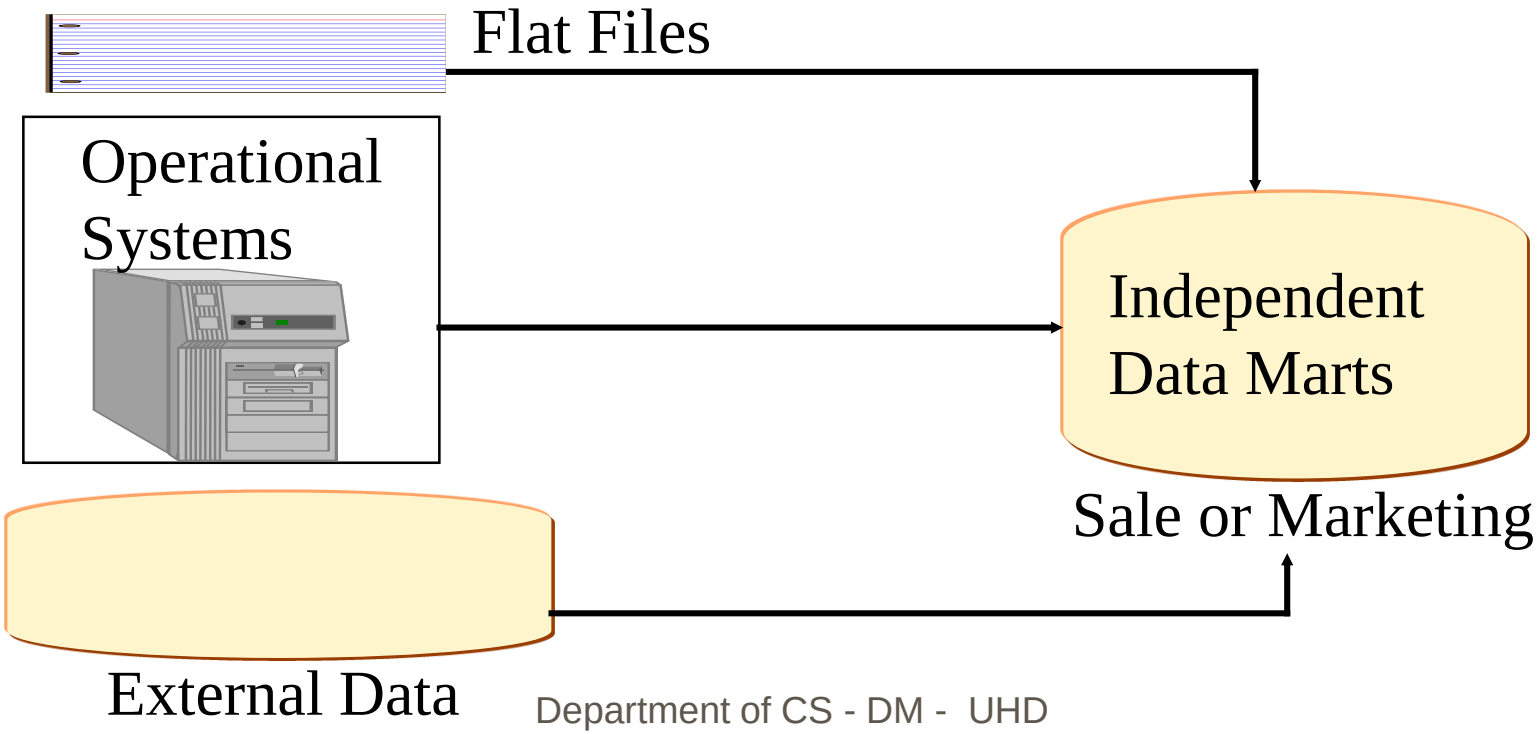
Dependent Data Mart

A **dependent data mart** is created with the use of a central data warehouse. This gives you the usual advantages of centralization. Figure below illustrates a dependent data mart.



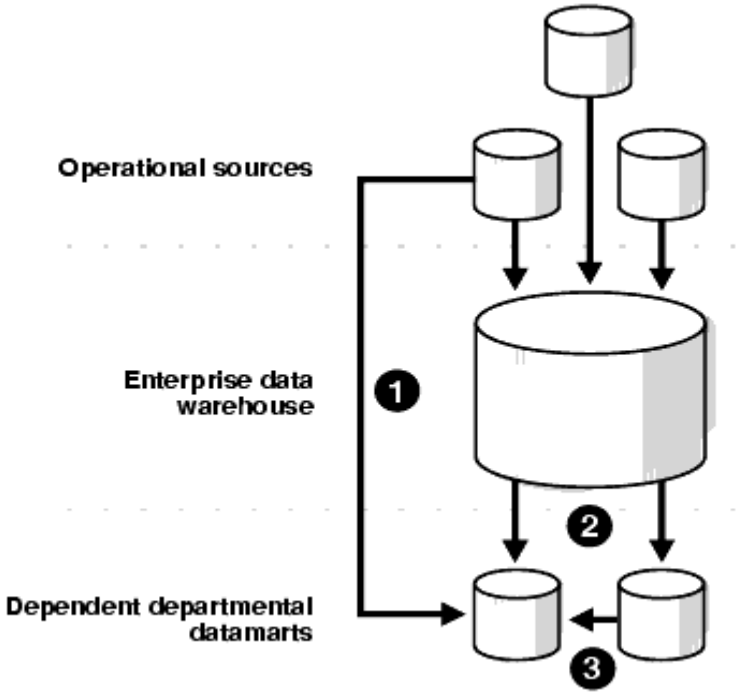
Independent Data Mart

An **independent data mart** is created without the use of a central data warehouse. This could be desirable for smaller groups within an organization. Figure below illustrates an independent data mart.



Hybrid Data Marts

Hybrid data marts can draw data from operational systems or data warehouses. This could be useful for many situations, especially when you need a new group or product is added to the organization. This figure illustrates a hybrid data mart.



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Thank you