**Monitors and Monitoring Strategies**

Monitors are responsible for detecting changes in data sources before integrating them into a **Data Warehouse (DW)**. They ensure **data freshness** by identifying modifications in source systems.

**Types of Monitoring Strategies (Slide 2-17 & 2-18)**

1. **Trigger-Based Monitoring**
   * Uses **database triggers** to detect changes instantly.
   * Suitable for **real-time monitoring** but adds overhead to the source system.
2. **Replication-Based Monitoring**
   * Uses **replication mechanisms** to track and copy changes.
   * Efficient for **real-time or near-real-time synchronization**.
3. **Log-Based Monitoring**
   * Reads **database transaction logs** to detect changes without affecting performance.
   * Ideal for **high-volume transactional databases**.
4. **Timestamp-Based Monitoring**
   * Uses a **last modified timestamp** to extract only new or updated records.
   * Efficient for **batch updates** but depends on the availability of timestamps.
5. **Snapshot-Based Monitoring**
   * Takes **periodic snapshots** of data and compares them to detect changes.
   * Works well for **slow-changing datasets**.