Unit 14
Business Intelligence

BI FUNCTIONALITIES

Key Features of Implementing Business Intelligence Functionality

1. **Data Integration**: Integrating data from disparate sources allows organizations to gain a comprehensive view of their operations and performance.

2. **Advanced Analytics**: Employing advanced analytics techniques such as predictive modeling and machine learning enables organizations to uncover hidden patterns and trends in their data.

3. **Interactive Visualization**: Interactive visualization tools empower users to explore and understand data through intuitive charts, graphs, and dashboards.

4. **Real-Time Reporting**: Real-time reporting capabilities provide timely insights into business performance and enable rapid decision-making.

5. **Mobile BI**: Mobile BI allows users to access critical business insights on-the-go, enabling faster decision-making and improving productivity.

6. **Collaboration and Sharing**: BI platforms facilitate collaboration and knowledge sharing among stakeholders, fostering a culture of data-driven decision-making.

Systems and Technologies

Information systems and technologies play different roles in supporting businesses at operational, tactical, and strategic levels. Here are a range of these systems across the three levels:

➢ **Transaction Processing Systems (TPS)**: TPSs capture, process, and store transactional data generated by **day-to-day** business operations. Example: Point of Sale (POS) systems in retail stores record sales transactions in real-time.

➢ **Enterprise Resource Planning (ERP) Systems**: ERP systems integrate **various functional areas (e.g., finance, HR, manufacturing) into a unified system, streamlining operational processes.** Example: SAP, Oracle, and Microsoft Dynamics are popular ERP solutions used to manage business operations.

Systems and Technologies

➢ **Management Information Systems (MIS**): MIS provide **middle managers** with summarized, structured information to support decision-making at the <mark>tactical level</mark>. Example: Monthly sales reports, budget variance analysis, and inventory turnover reports.

➢ **Executive Information Systems (EIS)**: EIS provide **top executives with strategic information** from <mark>internal and external</mark> sources to support <mark>long-term planning</mark> and decision-making. Example: Executive dashboards that visualize key performance indicators (KPIs) such as market share, profitability, and customer satisfaction.

➢ <mark>**Expert Systems:**</mark> are AI-based systems that emulate the decision-making capabilities of **human experts in specific domains**. These systems use knowledge representation and inference engines to interpret data, apply domain-specific rules, and provide expert advice or recommendations. **Expert Systems organize expert knowledge** into a set of rules, heuristics, or algorithms that can be applied to solve problems or make decisions.

Operational system vs tactical & strategic systems

- Operational systems focus on automating routine tasks and capturing transactional data in real-time, while tactical and strategic systems emphasize analysis and decision-making.

- Operational systems tend to be more structured and transactional, whereas tactical and strategic systems deal with more summarized, aggregated data for analysis.

- At the operational level, systems are primarily internally focused, supporting day-to-day business operations. At the tactical and strategic levels, systems often integrate external data sources for broader insights.

- While operational systems are essential for daily operations, tactical and strategic systems provide the intelligence needed for planning, forecasting, and long-term growth.

- Operational systems have a short-term focus on immediate operational needs, while tactical and strategic systems have a longer-term perspective, supporting strategic planning and goal setting.

Advantages of Using Application Software for Business Processing

✓**Automation and Efficiency:** Streamlines tasks, reduces manual effort.

✓**Improved Accuracy:** Minimizes errors in calculations and data processing.

✓**Standardization and Consistency:** Enforces standardized processes, ensures compliance.

✓**Enhanced Decision-Making:** Provides access to real-time data and analytics.

✓**Scalability and Flexibility:** Adapts to changing business needs, offers scalability.

Disadvantages of Using Application Software for Business Processing

× **Cost:** Involves significant upfront and ongoing expenses.

× **Complexity**: Requires specialized knowledge and training.

× **Vendor Dependence:** Relies on vendors for updates and support.

× **Integration Challenges:** May encounter issues integrating with existing systems.

× **Security Risks:** Introduces potential vulnerabilities and compliance risks.