

## Unit VI BI Applications, Emerging Trends and Future Impacts

### 6.1 BI Applications: Applications of Business Intelligence in Higher Education, Healthcare Monitoring, Logistics and Supply Chain Management, Customer Relationship Management, Banking Industry, Telecommunication Industry, Manufacturing Industry.



#### Business Intelligence (BI) Applications – Simplified

**Business Intelligence (BI)** helps organizations **make better decisions** using data. It involves collecting, analyzing, and visualizing data to improve performance, cut costs, and enhance customer satisfaction.

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#### 1. 🎓 Higher Education

- Track student performance, dropout rates, and attendance
- Improve course planning and resource allocation
- Analyze admission trends and predict enrollment numbers



*Example:* A university uses BI dashboards to identify which subjects have the highest failure rates and allocate tutors accordingly.

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#### 2. 🏥 Healthcare Monitoring

- Monitor patient health and hospital performance
- Detect diseases early using patient data patterns
- Manage inventory and reduce treatment costs



*Example:* Hospitals use BI to track readmission rates and patient recovery times.

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### 3. 🚚 Logistics and Supply Chain Management

- Track shipments, deliveries, and inventory
- Optimize routes and reduce delivery time
- Forecast demand and manage suppliers

💡 *Example:* A company uses BI tools to reduce delays by analyzing traffic data and delivery times.

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### 4. 👤 Customer Relationship Management (CRM)

- Understand customer behavior and buying patterns
- Personalize marketing and improve customer service
- Identify high-value customers

💡 *Example:* A retail store uses BI to send special offers to loyal customers based on their purchase history.

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### 5. 🏦 Banking Industry

- Detect fraud and unusual transaction patterns
- Analyze customer credit risk
- Improve loan approval and investment decisions


💡 *Example:* Banks use BI to track suspicious transactions and prevent fraud.

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### 6. 📠 Telecommunication Industry

- Analyze call data, user behavior, and network usage


- Improve service quality and customer support
- Launch targeted marketing campaigns

 *Example:* A telecom company identifies customers likely to leave and offers them discounts to retain them.

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## 7. Manufacturing Industry

- Monitor machine performance and product quality
- Predict equipment failure (predictive maintenance)
- Reduce waste and improve production efficiency

 *Example:* A factory uses BI to identify which machines need maintenance before they break down.

6.2 Emerging Trends and Future Impacts: Location based analytics for organisations, Mobile BI, Web 2.0 and Online Social Networking, Cloud Computing and BI. Issues related to analytics.

## Emerging Trends & Future Impacts in BI

Business Intelligence is evolving fast! Let's look at the **new trends**, their **impact**, and **issues** to watch out for.

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### 1. Location-Based Analytics for Organizations

- Combines **location (GPS, maps)** with data analysis.
- Helps businesses understand **where** things are happening.

#### ◆ Uses:

- Retail stores find **best store locations**.

- Delivery services **optimize routes**.
- Marketers **target offers** based on customer location.

 *Example:* A food delivery app uses heatmaps to see where most orders come from and sets up new kitchens there.

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## 2. Mobile BI

- Access **BI dashboards and reports** on smartphones and tablets.
- Real-time alerts and decision-making on the go.

### ◆ Impact:

- Faster decision-making
- Increased productivity
- Access from anywhere, anytime

 *Example:* A sales manager views live sales reports during a client visit using a BI app.

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## 3. Web 2.0 and Online Social Networking

- Web 2.0 = More user interaction (social media, blogs, forums)
- Social media data (likes, shares, comments) is used in analytics.

### ◆ Uses:

- Track **brand sentiment**
- Understand **customer preferences**
- Improve **marketing strategies**

 *Example:* A brand uses Twitter data to see how people feel about their new product.


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#### **4. Cloud Computing and BI**

- BI tools are now hosted on the **cloud** (like Google Cloud, AWS, Azure).
- No need for heavy hardware or software installations.

##### ◆ **Benefits:**




- Cost-effective
- Scalable
- Access from anywhere



 *Example:* A startup uses Power BI in the cloud to generate reports without buying servers.

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#### **5. Issues Related to Analytics**

Even with advanced tools, there are challenges:

Issue	Description
 <b>Data Privacy &amp; Security</b>	Protecting sensitive data from breaches
 <b>Data Ethics</b>	Using data fairly and responsibly
 <b>Data Quality</b>	Inaccurate or incomplete data affects decisions

Issue	Description
 <b>Lack of Skilled People</b>	Need for analysts and data scientists
 <b>Real-time Processing</b>	Handling large data in real-time can be difficult

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### Summary Table

Trend	What It Does
Location-Based Analytics	Uses GPS/location data to make smarter decisions
Mobile BI	BI on phones/tablets for anytime access
Web 2.0 & Social Networks	Analyzes social media data for trends and opinions
Cloud Computing & BI	BI tools on the cloud for flexibility and low cost
Issues in Analytics	Data privacy, quality, ethics, and skills shortage