**Title:** Comparative Analysis of Decision Support Systems (DSS), Business Intelligence (BI), and Business Intelligence Analytics (BIA)

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# **Decision Support System (DSS) Application: Clinical Decision Support Systems (CDSS)**

**Overview:**

Clinical Decision Support Systems (CDSS) are specialized DSS tools used in the healthcare industry. They enhance clinical practice through the integration of patient data with a knowledge base to improve decision-making, support diagnosis and treatment plans, and enhance overall patient care.

**Functionality:**

CDSS provides real-time diagnostic and treatment recommendations by analysing comprehensive patient data and comparing it with a clinical knowledge base. The system alerts healthcare providers about potential issues, such as interactions between prescribed drugs or deviations from clinical guidelines.

**Integration with DSS Characteristics:**

CDSS aligns well with the characteristics of DSS as described by Sharda, Delen, & Turban (2014), which include improving efficiency, effectiveness, and agility in decision-making processes. CDSS specifically supports complex clinical decisions, integrates seamlessly with electronic health records (EHRs), and provides targeted information at the point of care.

**Comparison with Textbook Definition:**

CDSS fits into the broader category of DSS by providing actionable insights based on data analytics, which is crucial for making informed decisions in dynamic environments like healthcare.

# **Business Intelligence (BI) Application: Power BI**

**Overview:**

Microsoft Power BI is a robust BI tool that enables organizations to aggregate, analyse, visualize, and share data through an interactive, user-friendly interface. It supports a wide range of data sources and integrates seamlessly with Microsoft products.

**Functionality:**

Power BI facilitates the creation of detailed reports and dashboards that update in real-time. Users can explore data through natural language queries and access AI-enhanced insights to forecast trends and make data-driven decisions.

**Integration with BI Characteristics:**

Power BI exemplifies key BI functionalities including data visualization, real-time analytics, and comprehensive data connectivity. These features align with the BI attributes mentioned by Sharda, Delen, & Turban (2014), enhancing the decision-making process through intuitive and accessible data insights.

**Comparison with Textbook Definition:**

This tool perfectly embodies the BI system's characteristics, offering flexibility in data handling and supporting decision-making with actionable insights, which is fundamental to BI systems.

# **Business Intelligence Analytics (BI Analytics) Application: Looker**

**Overview:**

Looker is a modern BI analytics platform that extends the capabilities of traditional BI by integrating data into daily workflows, enabling companies to extract actionable insights and make data-driven decisions.

**Functionality:**

Looker facilitates the exploration of data through a powerful analytics-oriented server and a flexible modeling language, LookML. It allows users to create complex data models, perform detailed analyses, and build interactive dashboards and reports.

**Integration with BI Analytics Characteristics:**

Looker supports deep data exploration and custom analytics, which are crucial aspects of BI Analytics. The platform's ability to integrate and automate analytics into business processes aligns with the BI Analytics characteristics outlined by Sharda, Delen, & Turban (2014).

**Comparison with Textbook Definition:**

Looker matches the definition of BI Analytics by providing advanced data exploration tools and the capability to embed insights directly into business applications, enhancing operational efficiency and strategic decision-making.

# **References**

- Sharda, R., Delen, D., & Turban, E. (2014). Decision Support and Business Intelligence Systems (10th ed.). Pearson Education.

- Power BI and Looker platform details were gathered from their respective descriptions in BI tool reviews and their integration capabilities as discussed across various sources.  
<https://www.datacamp.com/blog/top-business-intelligence-tools>  
https://sproutsocial.com/insights/business-intelligence-tools/  
<https://www.thoughtspot.com/data-trends/business-intelligence/business-intelligence-tools>  
https://blog.tooljet.com/the-ultimate-guide-to-business-intelligence-tools/