A white rectangular sign with blue text

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A list of information on a computer

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Introduction

Business intelligence (BI) tools and technologies play a critical role in empowering data-driven decision making across organizations. This report provides a comprehensive overview of how BI capabilities can support core business processes, enable insightful analytics, and guide better decisions in line with legal and ethical regulations.

The first section examines key business processes, associated supporting activities, data inputs, and BI software applications that can optimize workflows. A comparison of popular BI tools and platforms follows, contrasting their functionalities for aggregating, analysing and visualizing data to aid business users and senior management.

Practical demonstration of identifying target markets using BI technologies is presented next. This applies carbon emissions and macroeconomic datasets to rank suitable countries for a fictional electric vehicle manufacturer’s expansion plan.

Finally, the relationship between data-supported decision automation through BI systems versus human-centered management discretion is discussed. Evaluation criteria are provided to assess BI tools on the effectiveness of their embedded controls, transparency, and organizational learning - important for ethical governance and legal compliance.

In summary, this report takes a 360-degree view around how modern BI capabilities can bolster process excellence, analytics-based decision making as well as responsible and trustworthy organizational oversight through responsible data policies. The goal is to provide balanced pragmatic guidance on BI adoption strategies factoring in technical statistical parameters alongside social, legal and cultural dimensions.

# BI Processes and Mechanisms

Business processes refers to the workflows, procedures, and activities that a company uses to produce goods or services, deliver value to customers, and achieve organizational goals (Power, 2002). Some key business processes include order processing, supply chain management, production/manufacturing, sales and marketing, and customer service.

Companies use various mechanisms to support data-driven decision-making across these business processes, enabled by business intelligence (BI) tools and technologies. Key mechanisms include:

* Reporting and visualization - BI tools generate reports, dashboards, charts that provide snapshots of business performance to analyse trends, compare metrics, spot issues and opportunities to inform decisions (Negash, 2004).
* Online analytical processing (OLAP) - Enables complex analyses and calculations of multidimensional data from across the organization. Helps identify correlations, patterns, predictions to aid planning and forecasting (Power, 2002).
* Alerts and notifications - Automated alerts on KPIs and metrics allow for real-time monitoring so decision makers can respond quickly to changing business conditions (Olszak & Ziemba, 2012).
* Data mining - Discovers patterns and relationships in large data sets to identify associations, segments, forecasts, and predictive models to enhance decisions (Negash, 2004).

The core purpose of BI is to turn raw business data into meaningful insights that enhance planning, productivity, efficiency and competitiveness through better decision making aligned to business objectives across an organization (Olszak & Ziemba, 2012).

## 1.1 Business Process and Supporting Processes

Analysing the terms "business process" and "supporting processes" is illustrated by the following examples:

**Business Process:**

A group of organised, connected processes or activities that result in a particular service or product being produced for a specific customer or customers is known as a business process. It stands for the essential range of tasks that an organisation needs to complete in order to accomplish its main aims and objectives.

A diagram of a process

Description automatically generated

**Supporting Processes:**

On the other hand, a supporting process is a group of actions that support, facilitate, or enable the main business processes to be carried out. The infrastructure, resources, or additional work needed for the primary business processes to run smoothly is provided by supporting processes.

A diagram of a support process

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## 1.2 Data Categories

The following table presents a comparison between unstructured, semi-structured, and structured data:

| Characteristic | Unstructured Data | Semi-Structured Data | Structured Data |
| --- | --- | --- | --- |
| Data Format | Text, images, audio, video | XML, JSON, YAML, CSV | Relational databases (SQL) |
| Data Organization | No predefined structure | Has some organizational properties | Highly organized with predefined schema |
| Data Schema | No schema | Partially defined schema | Strictly defined schema |
| Data Consistency | Low consistency | Moderate consistency | High consistency |
| Data Relationships | No defined relationships | Some relationships defined | Well-defined relationships |
| Query Language | Full-text search, natural language processing | XPath, XQuery, JSONPath | SQL |
| Data Sources | Social media, emails, documents, multimedia | Logs, sensor data, NoSQL databases | Relational databases, spreadsheets |
| Data Structure | Unorganized and free-form | Hierarchical or self-describing structure | Tabular structure with rows and columns |
| Data Integration | Difficult to integrate | Moderate difficulty in integration | Easy to integrate |
| Data Analysis | Requires advanced techniques (e.g., machine learning, natural language processing) | Requires some preprocessing and data transformation | Well-suited for traditional analytical tools |
| Examples | Text documents, images, videos, audio files | XML files, JSON data, CSV files, NoSQL databases | SQL databases, spreadsheets, data warehouses |

## 1.3 BI Application Software

The term "business intelligence" (BI) application software describes a kind of software intended to gather, handle, examine, and display data in order to facilitate well-informed decision-making inside an enterprise. These programmes are used to convert unprocessed data into insightful and useful information.

The following is an assessment of the advantages and disadvantages of utilising application software to facilitate business process management:

**Benefits:**

* Increased efficiency - Software automates tedious manual tasks allowing employees to focus on higher value work. Results in faster process cycle times (Haddara & Zach, 2011).
* Standardization & consistency - Software applies uniform rules and logic to ensure processes adherence to standards and specifications. Promotes consistency (Otuya, 2013).
* Insights from analytics - Embedded analytics provides data-driven insights into process bottlenecks, pain points and performance metrics. Enables data-based process optimization (Singh & Hess, 2017).

**Drawbacks:**

* Customization challenges - Off the shelf software may require considerable customization to address unique process requirements resulting in greater costs (Maas et al, 2014).
* Integration difficulties - Integrating complex business software across various systems can be technically challenging requiring custom coding and interfaces (Lambert & Davidson, 2013).
* Changing requirements - Business needs can outpace capabilities of installed software requiring expensive software upgrades or replacement (Xu, 2011).

The following are some specific examples of application software and what they offer businesses:

**Business Intelligence (BI) Tools:**

* Examples: Tableau, Power BI, QlikView, Looker
* BI tools offer businesses the ability to analyze and visualize data from various sources, enabling data-driven decision making. They provide features like interactive dashboards, ad-hoc reporting, data exploration, and advanced analytics.

**Customer Relationship Management (CRM) Applications:**

* Examples: Salesforce, Microsoft Dynamics 365, HubSpot, Zoho CRM
* CRM applications help businesses manage customer interactions, sales processes, and customer data. They offer features like contact management, lead tracking, opportunity management, sales forecasting, and customer service and support.

**Enterprise Resource Planning (ERP) Applications:**

* Examples: SAP, Oracle ERP, Microsoft Dynamics, Infor
* ERP applications integrate various business processes and functions, such as accounting, finance, procurement, supply chain management, human resources, and manufacturing. They offer a centralized platform for managing organizational resources and operations.

**Collaboration and Productivity Tools:**

* Examples: Microsoft Office 365, Google Workspace, Slack, Zoom
* These tools facilitate communication, collaboration, and productivity within organizations. They offer features like email, instant messaging, video conferencing, document sharing, and online storage.

# Tools and Technologies Comparison

The following table compares Microsoft Excel, Tableau, and Power BI for business intelligence:

| **Category** | **Power BI** | **Tableau** | **Excel** |
| --- | --- | --- | --- |
| Ease of Use | User-friendly drag and drop interface to build reports and dashboards. Simpler data modelling. | Steep learning curve especially for complex data preparation and analytics | Simple interface and broadly used. Minimal data modelling capabilities. |
| Data Visualization | Decent built-in visualization library with basic charts, graphs, and ability to customize the look and feel. | Industry leading interactive data visualization capabilities like heat maps, tree maps and ability to build customized visuals. | Basic charts and graphs get static over large datasets. Limited customization options. |
| Data Capacity | Can handle large data volumes required for enterprise-level analytics and reporting. Leverages data mashup & modelling capabilities. | Can connect to a wide variety of data sources including big data required for large scale analytics. | Limited to small datasets up to 1 million rows and performs slower on bigger local file sources. |
| Analytics Features | Basic filtering, grouping, summing & sorting. Simple forecasting capabilities recently added. | Sophisticated analytics functions including regression analysis, clustering algorithms, statistical modelling, and predictive analytics. | Basic pivot tables, formulas, filtering. Requires third party add-ins for advanced analytics. |
| Scalability | Built for large enterprise-level reporting via Power BI Report Server for on-premises and Power BI Premium capacity licensing | Requires additional server, capacity planning. Recently added features to handle larger user bases. | Not built for enterprise-wide reporting and dashboarding for a large user base. |
| Cost | Power BI Desktop free. $9.99 per user/month cloud subscription. Additional capacity pricing. | Tableau Desktop $70 per user/month. Tableau Online (Cloud) $42 per user/month. Additional premium pricing. | Low cost. Excel and Office license pricing applicable. |

In summary, Power BI and Tableau have greater business intelligence capabilities over Excel which caters more to smaller analysis use cases rather than enterprise-level reporting and monitoring. Power BI easier to get started while Tableau steeper learning curve but richer set of data visualization and analytics functionality.

## 2.1 Support for Business Decision-Making

Business decision-making can be categorized into three levels: operational, tactical, and strategic. Each level serves a different purpose and involves different types of decisions.

* **Operational Level**: Operational-level decisions are concerned with the day-to-day operations and activities of an organization. These decisions are typically made by lower-level managers and front-line employees. Operational decisions are focused on ensuring the efficient and effective execution of tasks and processes.
* **Tactical Level**: Tactical-level decisions are concerned with the implementation of strategies and the achievement of specific objectives within a particular functional area or department. These decisions are typically made by middle-level managers and span a shorter time frame than strategic decisions. Tactical decisions involve the allocation of resources and the coordination of operational activities.
* **Strategic Level**: Strategic-level decisions are concerned with the long-term direction and overall positioning of the organization. These decisions are made by top-level executives and involve significant commitment of resources and critical choices that shape the future of the company. Strategic decisions are typically broad in scope and have a long-term impact.

The types of information systems and technology that assist corporate decision-making at different levels within an organisation are compared in this thorough table:

| **Level** | **System/Technology** | **Purpose** | **Decision Support** | **Examples** | **References** |
| --- | --- | --- | --- | --- | --- |
| **Operational** | Transaction Processing Systems (TPS) | Automate and manage routine business transactions | Support structured, repetitive decisions for day-to-day operations | Point-of-Sale (POS) systems, Inventory Management Systems, Payroll Systems | (Laudon & Laudon, 2020; O'Brien & Marakas, 2018) |
|  | Process Control Systems | Monitor and control industrial processes | Support real-time monitoring and control of operational processes | Supervisory Control and Data Acquisition (SCADA) systems, Computer-Aided Manufacturing (CAM) systems | (Stair & Reynolds, 2020) |
|  | Office Automation Systems | Support day-to-day office operations | Facilitate communication, collaboration, and productivity | Word processors, email clients, calendaring software | (Valacich & Schneider, 2018) |
| **Tactical** | Management Information Systems (MIS) | Provide reports and analytics for tactical decision-making | Support semi-structured decisions for planning, monitoring, and control | Business Intelligence (BI) systems, Decision Support Systems (DSS), Executive Information Systems (EIS) | (Laudon & Laudon, 2020; Rainer & Cegielski, 2021) |
|  | Customer Relationship Management (CRM) Systems | Manage customer data and interactions | Support decisions related to sales, marketing, and customer service | Salesforce, Microsoft Dynamics 365, Oracle CRM | (Turban et al., 2021) |
|  | Supply Chain Management (SCM) Systems | Integrate and optimize supply chain processes | Support decisions related to inventory management, logistics, and supplier relationships | Oracle SCM, SAP SCM, JDA Software | (O'Brien & Marakas, 2018) |
| **Strategic** | Enterprise Resource Planning (ERP) Systems | Integrate and optimize business processes across the organization | Support strategic decisions related to resource allocation, process optimization, and organizational restructuring | SAP ERP, Oracle E-Business Suite, Microsoft Dynamics ERP | (Rainer & Cegielski, 2021; Gallaugher, 2022) |
|  | Business Intelligence (BI) and Analytics Systems | Analyze data to uncover insights and trends | Support strategic decisions related to long-term planning, product development, and competitive positioning | Microsoft Power BI, Tableau, QlikView, IBM Cognos Analytics | (Laudon & Laudon, 2020; Gallaugher, 2022) |
|  | Executive Information Systems (EIS) | Provide executives with critical information for strategic planning | Support strategic decision-making by providing high-level summaries and visualizations of key performance indicators (KPIs) | SAP BusinessObjects BI Suite, Oracle BI Suite | (Haag & Cummings, 2019) |

## 2.2 Key Features of Business Intelligence Functionality

## Business intelligence (BI) tools and platforms provide critical capabilities for organizing, analysing, and distributing data-driven insights across an organization. The key features that make BI solutions invaluable for data-informed decision-making include:

## Data warehousing and ETL (extract, transform, load) - BI consolidates vast volumes of structured and unstructured data from across the business into a centralized repository and transforms it into a standardized format for analysis. For example, a retail chain combines point-of-sale transactions, inventory data, web traffic analytics, and CRM information into a data warehouse.

## Ad hoc reporting and dashboards - BI empowers users to conduct queries without dependencies on IT teams and quickly visualize KPIs through pixel-perfect reports, interactive dashboards. A brand manager might use BI self-service reporting to analyse the social media engagement and sentiment metrics week-over-week.

## Advanced analytics and modelling - Many BI tools incorporate statistical modelling, predictive analytics, machine learning algorithms to identify trends and patterns for robust forecasting. For instance, a hospital uses BI predictive capabilities to estimate patient volumes, staffing needs, and resource allocation for the upcoming flu season.

## Mobility and alerting - Modern BI distributes real-time insights to users through mobile apps, SMS and in-app notifications. Sales reps receive alerts on slippages in quotas directly within their CRM app monitored by the integrated BI module.

## 2.3 Information Systems and Technologies

Information systems and technologies refer to the combination of hardware, software, data, people, and processes that organizations use to collect, process, store, and distribute information to support their operations, decision-making processes, and strategic goals (Laudon & Laudon, 2020). These systems and technologies encompass a wide range of components and applications, enabling efficient and effective management of information within organizations.

Technologies and information systems are essential to organisations at all levels—strategic, tactical, and operational. Below is a comparison and contrast of the different technologies and systems that are employed at these levels:

* Operation level:
  + **Transaction Processing Systems (TPS)**: These systems manage sales, inventories, and payroll processing, among other regular transactions. Real-time transactional data processing, capturing, and storing is built into their design.
  + Systems for enterprise resource planning, or ERPs, combine several corporate operations into one, including supply chain management, finance, and human resources. It makes departmental data sharing easier and streamlines procedures.
  + **CRM (customer relationship management) systems**: CRMs enable businesses track sales leads, run marketing campaigns, and offer customer support by managing interactions with customers and prospects.
* At the tactical level:
  + **Management Information Systems (MIS):** MIS offer managers operational data analysis and condensed reports to aid in decision-making. Typically, they come with forecasting, performance monitoring, and budgeting features.
  + **Decision Support Systems (DSS):** DSS assist managers in semi-structured decision-making and sophisticated data analysis. To assess various situations and options, they make use of modelling and simulation techniques.
  + **Systems for Business Intelligence (BI):** Business Intelligence (BI) systems collect, process, and display data to facilitate decision-making across the organisation. They frequently come with ad hoc query capabilities, dashboards, and data visualisation tools.
* At the strategical level:
  + **Executive Information Systems (EIS):** To aid in strategic decision-making, EIS give senior executives condensed data from both internal and external sources. They emphasise trend research and long-term planning.
  + **Knowledge management systems (KMS):** KMS promote cooperation and creativity inside an organisation by collecting and disseminating knowledge. They include resources for discussing best practices, finding experts, and managing documents.
  + **Systems for Enterprise Performance Management (EPM)**: EPM systems monitor performance using key performance indicators (KPIs) and match organisational tactics with objectives. Their talents include budgeting, performance analysis, and strategy planning.

Comparation:

* **Scope**: While tactical systems aid in managerial decision-making, operational systems concentrate on daily tasks, and strategic systems handle long-term performance and planning.
* **Data processing**: While tactical and strategic systems analyse condensed and aggregated data, operational systems deal with transactional data in real time.
* **User Base**: Front-line employees utilise operational systems, mid-level managers use tactical systems, and top executives use strategic systems.
* **Time Horizon**: Tactical and strategic systems have longer planning horizons than operational systems, which deal with short-term tasks.
* **Decision Support**: Tools for making decisions, such simulation and analytics, are available in tactical and strategic systems but are not usually present in operational systems.

In contrast:

* **Level of Detail**: While tactical and strategic systems concentrate on condensed information, operational systems record comprehensive transactional data.   
  **Time Sensitivity**: While tactical and strategic systems may withstand data processing delays, operational systems need real-time processing.
* **Analysis Scope**: Tactical and strategic systems examine patterns and trends among several transactions, whereas operational systems concentrate on single transactions.
* **Integration**: While tactical and strategic systems need to be integrated with other systems in order to provide a thorough analysis, operational systems are frequently stand-alone systems.
* **Decision Complexity**: Compared to operational systems, tactical and strategic systems are able to handle more complicated decision-making procedures.

# Practical Demonstration

**3.1 Business Intelligence tools and technologies.**

Business intelligence (BI) refers to the solutions and capabilities that enable organizations to gather, store, access, and analyse data to help inform business decisions. Some key aspects of business intelligence include:

* What Business Intelligence is:
  + Consolidation of data from disparate internal systems and external sources
  + Quantitative and qualitative analytics using techniques like data mining, modelling, statistics
  + Delivering reporting and visualization of insights via dashboards, charts, apps
  + Real-time data distribution using alerts, push notifications
* BI Tools and Techniques
  + Data warehousing and ETL (Extract, Transform and Load data)
  + Online Analytical Processing (OLAP) for complex queries
  + Dashboards, scorecards and reports to monitor KPIs
  + Advanced analytics like predictive modelling, machine learning algorithms
  + Data mining analysis like classification, clustering, segmentation
  + APIs and EAI tools to integrate data across systems
* Example BI Uses:
  + Marketing analyses campaign performance and optimizes marketing spend
  + Sales tracks progress to quotas, analyses buyer behaviour
  + Finance models and forecasts budgets, revenues scenarios
  + Supply chain analyses inventory, supply-demand dynamics
  + Executives monitor metrics on one centralized BI dashboard

* 1. **Business Intelligence tool design**

There are certain requirements that must be met in order to use the provided data. For instance, the data must be cleaned using Excel before being imported into Power Bi.  
A screenshot of a graph

Description automatically generated

A group of pie charts

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Based on extensive market analysis, we have identified the following countries as most suited for Global Motors' electric vehicle entry and expansion over the next 5 years:

A screenshot of a graph

Description automatically generated

Figure 6. Comparation of top countries by emissions and fuel price

| **Country** | **Number of Electric Car Chargers** | **Number of Electric Vehicles** |
| --- | --- | --- |
| China | 1,148,712 | 6,013,000 |
| United States | 96,535 | 1,627,810 |
| Norway | 10,163 | 320,000 |
| Netherlands | 47,133 | 390,000 |

This table compares the number of electric car chargers and electric vehicle ownership among the top countries with the greatest potential for electric automobiles.

A graph of different types of chargers

Description automatically generated with medium confidence

Figure 7. Fast charging points and slow chargers in different countries

**Norway:** Norway leads globally with over 50% of new car sales being electric thanks to highly supportive government policies like exemption from taxes and VAT, free municipal parking, discounted tolls, and access to bus lanes. A focus on renewable energy also means most charging happens from clean sources. As a leader, growth may slow but there is still potential. A screenshot of a map

Description automatically generated

Figure 8: Norway data

**China:** China currently has the most EV units sold, this only represents around 6% of annual car sales. However, China is projecting over 50% of sales to be electric by 2035. Government regulation, investment in R&D, and a crowded urban landscape make EVs appealing to curb pollution. Rapid economic growth combined with rising environmental awareness position China for massive growth.

A map of china and some other countries/regions

Description automatically generated

Figure 9: China data

**United States:** United States The adoption of electric vehicles in the US has been gradual but is poised to accelerate. The Biden administration aims to make half of new car sales electric by 2030. Large incentives under recent laws, improving public charging networks, and sustainable mobility trends will also drive US demand. Legacy auto companies like GM and Ford are making multi-billion dollar EV investments targeting American consumers. A map of the united states

Description automatically generated

Figure 10: United Stated data

**Netherlands:** Netherlands punches far above its weight in EV sales. Consistently ranking in the global top 5 for per capita adoption, the bike-loving Dutch have embraced electric mobility. With over 35,000 public charge points and plans to ban gasoline cars sales by 2030, the regulatory and infrastructure backdrop strongly favours EVs. The Netherlands shows even small but progressive countries can drive transformation.

A screenshot of a map

Description automatically generated

Figure 11: Netherland data.

In summary, while Norway leads in per capita adoption today, large economies like China and the US show enormous potential thanks to size, growth in coming decades, and supportive policy to tap into increasingly eco-conscious consumers.

For more dashboards and charts created with Tableau and Excel please visit Appendix.

**3.3 Customize the design to ensure that is user friendly.**

After using this customization the results can be like the images below. A close-up of a graph

Description automatically generated

Figure 3. Dashboard 1

A screenshot of a graph

Description automatically generated

Figure 4. Dashboard 2

**Visualization:**

Choose a chart, navigate to visualisations, bars, and choose the to alter the colour of the chart.

A screenshot of a phone

Description automatically generated

Figure 1. Colour Change

Additionally, it is inserted at the data value of the charts. To add it, choose a chart, choose Visualisations, choose Data Labels, click on, and last, choose Value on.

A screenshot of a phone

Description automatically generated

Figure 2. Insert Value

* 1. **Critical review**

Everything can be made clearer and more efficient, as well as include larger dashboards and graphs, changing more colours and be more creative but due the short time that I had to create this business intelligence tool, the minimum amount necessary based on user requirements has been implemented.

Based on the user requirements this interface is showing all the data required to evaluate witch countries have the highest potential for EV adoption:

As seen in Dashboard One, the charts provide all demographic information, including a map of the countries and their populations, information on unemployment, CPI, minimum wages, and GDP per capita.  
The second dashboard displays all the data pertaining to emissions and consumption, including country-by-country breakdowns of petrol prices, carbon dioxide emissions, electricity generation, and fossil fuel energy.

The customisations made to all displays included adding the name of the country in the KPI, which changes automatically for each country, and changing the colours of each chart and KPI information.

Although learning new features takes time, there are ways to improve the project, such as adding new features to the design if completion time is longer than expected.

# Decision Making and Regulations

## 4.1 BI Tools and Effective Decision-Making

Business intelligence (BI) tools can empower organizations to make smarter, data-driven decisions in several key ways:

1. Providing a single source of truth - BI consolidates data across different systems into a centralized repository, ensuring everyone is working off a common set of trusted facts and consistent metrics. This removes arguments over whose reporting is right.
2. Timely access to data - BI capabilities like data warehousing, ETL, reporting, and dashboards give decision makers self-serve access to real-time data rather than having to request from IT. This enables faster analysis and course correction.
3. Advanced analytics and modelling - Many BI platforms allow users to apply statistical models, predictive algorithms, machine learning on current and historical data to gain foresight into future trends and outcomes. This leads to mitigating risk and capitalizing on upcoming opportunities.
4. Visual data exploration - Interactive BI dashboards allow decision makers to analyze metrics from different angles and swivel across categories and filters. By spotlighting anomalies and making patterns clearer, BI simplifies diagnosis of issues and strategic planning.
5. Embedding insights for context - Modern BI pushes role-based insights to employees directly in their workflow apps when its relevant. For example, an inventory manager receives an alert in their inventory system about supply shortfalls predicted by the integrated BI forecasting module. This context turns data into prompt action.

By making more data visible to more users through cutting-edge analytics and easier exploration, BI systems drastically improve the speed, depth and quality of decision-making across an enterprise. This creates both operational excellence and competitive edge from sharper strategies.

## 4.2 Legal Issues

There are several legal and privacy issues involved in the secure use of business intelligence (BI) tools by organizations:

**Data Protection/Privacy Laws**

* Organizations must comply with data protection laws like the EU's General Data Protection Regulation (GDPR) or the California Consumer Privacy Act that dictate requirements around lawfully collecting and processing user data (Peslak, 2022). Non-compliance can lead to steep regulatory fines.

**Data Security**

* Companies must ensure robust IT and organizational security controls are in place to protect confidentiality and integrity of data in compliance with regulations. Breaches that leak trade secrets or customer information can spur lawsuits (Richins et al., 2017).

**Data Rights Management**

* Firms must establish data governance for legal data usage avoiding situations like managers misusing employee performance data leading to wrongful termination lawsuits (Qumer Gill, 2022). Audits help establish checks and balances on accessibility.

**Intellectual Property Rights**

* Companies should safeguard IP rights by evaluating tool licenses to ensure the generated data assets or insights, like marketing analytics reports, aren't claimed by the BI vendor companies. Ambiguities can cause future disputes (Indeed Editorial Team, 2022).

**UK Data Protection Act 2018**

The UK Data Protection Act 2018 is a crucial piece of legislation that organizations must comply with when utilizing business intelligence (BI) tools that involve processing personal data. This act outlines principles and requirements for the lawful, fair, and transparent handling of personal data, ensuring the protection of individuals' privacy rights (Data Protection Act 2018, c. 12).

## 4.3 Examples of Organisations

These are a few actual instances of businesses from various sectors that have greatly enhanced operations by using business intelligence (BI) tools:

1. **Netflix** - Uses BI analytics on viewership behaviour and activity to collect insights that directly influence major strategic moves. This includes deciding what new shows and movies to create, optimizing recommendations, planning future platform features and more to retain and grow their subscriber base.
2. **Starbucks** - Implemented a retail BI solution to provide store managers an integrated dashboard showing key metrics on sales, labour costs, inventory waste, and customer satisfaction. By enabling data-driven decisions at the frontlines, the coffee giant drove higher revenues and operational excellence across locations.
3. **Coca Cola** - Rolled out a business intelligence Competitive Knowledge System across retailer partners, bottlers and internal stakeholders to enable collaboration and provide insights into growth opportunities against competitors. The platform powered growth strategies across 200 countries resulting in streamlined operations.
4. **UPS** - Applies predictive analytics using complex BI algorithms on weather data, traffic patterns, demand forecasts and other operational data to optimize daily routing and asset utilization planning across their extensive delivery network. Significant cost savings were recognized.

These examples indicate the diverse scenarios where BI solutions reveal transformative potential within business operations, even at large established companies, cementing BI's status as one of the foremost drivers of data-informed growth.

## 4.4 Evaluation

Organizations can use business intelligence (BI) to expand their target audience and competitive position - but this must be executed responsibly by accounting for relevant security and privacy regulations.

Some compliant ways BI enables audience growth and competitiveness include:

* Granular customer segmentation – Detailed BI analysis of purchase patterns, demographics, psychographics and firmographic data can identify emerging niches with unmet needs ripe for tailored products and messaging. For instance, a review of web traffic may reveal an older demographic that prefers human customer service. New offerings catering to this crowd can then extend reach.
* Location intelligence – Mapping tools and geo-spatial analytics help spot specific regions that show higher affinity but remain under-penetrated to prioritize marketing and expansion investments with promising returns.
* Multi-channel campaign management – By centralizing data across channels into a BI repository, organizations can analyse optimal media mix and better coordinate messaging across touchpoints based on customer journeys. This avoids saturating audiences and improves ROI.
* Competitor benchmarking – Analysing market performance KPIs through an industry BI dashboard better informs where the firm lags or leads competitors on pricing, features, branding etc. guiding strategic decisions and growth roadmaps.

The key is architecting analytics infrastructure with security and access controls in compliance with regulations around consumer data and intellectual property. This ensures ethical usage while unlocking BI’s potential to serve broader audiences.

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# Appendix

A screenshot of a computer screen

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Figure 12. Dashboard 1 Tableau



Figure 13. Map view

A screen shot of a graph

Description automatically generated

Figure 14. CPI changeA screenshot of a computer

Description automatically generated

Figure 15. Minimum wageA screen shot of a graph

Description automatically generated

Figure 16. GDP per capita

A screenshot of a computer

Description automatically generated

Figure 17. Dashboard 2

A screenshot of a computer

Description automatically generated

Figure 18. Dioxide of carbon by country

A screenshot of a computer

Description automatically generated

Figure 19. Electric Power

A screenshot of a computer

Description automatically generated

Figure 20. Fossil Fuel

A screenshot of a computer

Description automatically generated

Figure 21. Fuel Price

A screenshot of a graph

Description automatically generated

Figure 22. Dashboard 1 Excel

A screenshot of a graph

Description automatically generated

Figure 23. Dashboard 2 Excel