

# **B.Com.(Business Analytics) Sem I**

## **Data Driven Decision Making**

### **Unit I: Disruption**

#### **1. What is Organizational Disruption?**

##### **Organizational Disruption:**

Disruption can be a valuable way to reinvent the organization by challenging competitors and identifying growth opportunities. An effective use of disruption is the key to drive organizational change and taking your business to the next level.

Disruption can be defined as an innovation that “transforms a complicated, expensive product into one that is easier to use or is more affordable than the one most readily available.”

Disruption is of three kinds:

- ❖ **Globalization** – The rapid movement and exchange of goods and services, capital, technology, human resources all over the world is leading to Globalization.
- ❖ **Digitalization** – Digitalization is transforming the businesses and posing new challenges and opportunities of new digital technologies.
- ❖ **Data Driven Decision Making** - New Businesses have emerged which provide the data or facilitate the data. These business uses data as a primary asset for establishing strategic planning, setting objectives, and assessing future risks.

#### **2. What is Data Driven Decision Making and its benefits?**

**Data Driven Decision Making:** Data-Driven Decision Making (DDDM) is the process of using data to inform and guide decisions. It is a critical approach for organizations of all sizes, as it can help to improve decision-making quality, reduce costs, and increase profits.

There are many benefits to DDDM, including:

**Better decision-making:** By using data to inform decisions, organizations can make more informed and objective choices that are more likely to lead to success.

**Reduced costs:** DDDM can help to identify areas where costs can be reduced such as identifying inefficiencies or waste data

**Increased profits:** DDDM can help to identify opportunities to increase profits such as identifying new markets or expanding into existing markets.

**Improved customer satisfaction:** DDDM can help to improve customer satisfaction by identifying and addressing customer needs and preferences.

### 3. Describe the challenges of becoming Data Driven.

Many companies today are striving to become data driven. But what does that mean exactly? More than just installing the right tools and applications, becoming data-driven is about making data and analytics part of the business strategy, its systems, processes and culture. It's about creating a mindset in which analytics form the basis of all fact-based business decisions and are embraced by all levels of the organization.

- ❖ **Data Quality:** Data quality is a crucial aspect of data-driven organizations. It refers to the overall accuracy, completeness, consistency, and relevance of data used for decision-making and analysis. High-quality data ensures that insights derived from data are reliable and actionable, leading to better decision-making.
- ❖ **Tools for access, extraction, processing and analysis:** Data-driven organizations rely on a variety of tools to access, extract, process, and analyze data for decision-making purposes. These tools play a crucial role in transforming raw data into actionable insights that can improve business outcomes.
  - Data Access Tools are Database Management Systems (DBMS), Data Warehouses & Data Lakes.
  - Data Extraction Tools are Web Tools, Connectors and Data Migration Tools.
  - Data Processing Tools are Data Transformation Tools and Data Integration Tools
  - Data Analysis Tools are Business Intelligence (BI) Tools, Statistical Analysis Tools and Machine Learning Tools
- ❖ **Cost:** These are the costs of developing and implementing data analytics models. This includes the cost of hiring data scientists, purchasing analytics software, and training employees on how to use analytics tools. Analytics and modeling costs can be high, but they can also yield significant returns on investment.
- ❖ **Legacy Data:** Legacy data is an asset for data-driven organizations. It can provide historical context and insights into past trends, customer behavior, and operational performance which can inform future decisions and improve business outcomes. Legacy data can be found in various formats and sources, including paper records, old software systems and databases.
- ❖ **Data Silos:** Data silos are isolated data sets that are not easily accessible or usable by other departments or teams within an organization.
- ❖ **Strong Leadership:** Strong leadership in data-driven organizations is essential for success. Leaders need to be able to set a vision for the organization, develop a strategy for achieving that vision and build a culture of data-driven decision-making. They also need to be able to communicate effectively with stakeholders, both inside and outside the organization.
- ❖ **Data Scientists:** Data scientists play a crucial role in data-driven organizations, using their expertise in statistics, machine learning, and data analysis to extract valuable insights from data. They help organizations make informed decisions, improve efficiency, and gain a competitive edge.

#### 4. What are the data practices in an organization and how to make it data driven?

##### Data Practices in an organization:

Data Analytics is an irreplaceable tool for achieving organizational success. It is not enough only to collect, store, and analyze data. The real data-driven, measurable growth, and development comes with the establishment of data-driven company culture.

Every data-driven organization uses the following:

- ❖ **Data resistant:** The business does not use data for any purpose.
- ❖ **Data-curious:** The business sees an opportunity to integrate and use data to enhance the success of its operations.
- ❖ **Data-aware:** The business starts using data analytics for some of its operational processes.
- ❖ **Data savvy:** The business starts using data analytics in multiple areas of operation and across different departments. It also starts deriving data insights and uses them for decision-making.
- ❖ **Data-driven:** The business uses data as a primary asset for establishing strategic planning, setting objectives, and assessing future risks.

#### Best Practices of a Data Driven Organization

People	Process	Technology
<ul style="list-style-type: none"><li>• Encouragement and enablement to be constantly learning</li><li>• Access to data by everyone in the organization</li><li>• Culture of collaboration</li></ul>	<ul style="list-style-type: none"><li>• Strong, consistent data governance</li><li>• Methods that encourage collaboration over top down decision making</li><li>• Encourage decisions to be data driven and not "from the gut"</li><li>• Focus on enablement and empowerment</li><li>• Organization wide knowledge of the value of data</li></ul>	<ul style="list-style-type: none"><li>• Self-service tools</li><li>• Automated data preparation and quality</li><li>• Scalable platforms that enable business units to deploy varying tools</li><li>• Unified meta data tracking</li></ul>

To make an organization as a data driven organization, use the following:

**Data Lake:** This is the best way to ensure data democratization, as datasets stored in those lakes are accessible to employees of all organizational levels. One great advantage is the fact that data lakes are inexpensive because huge amounts of data are collected in its raw format and are not processed, categorized, or filtered.

**Data Warehouse:** The greatest advantage of data warehouses is the fact that they store huge amounts of data in a structured, categorized, and meaningful way, and ensure its quality and consistency. The data in them already have a purpose, and no storage space is wasted for data that are not in use. On the other hand, this structure loses part of its flexibility due to its fixed structure. Additional licensing costs for database applications may also incur.

## 5. List out benefits of Data Driven Decision Making.

The benefits of Data Driven Decision Making are

- ❖ Increased accountability
- ❖ Better efficiency
- ❖ Alignment on company-wide goals
- ❖ A sense of ownership at every level
- ❖ Transparency

## 6. How to become Pro-Active Data Practitioner.

**Pro-Active Data Practitioner:** A proactive data practitioner is a data professional who takes a proactive approach to data management and analysis. They anticipate potential data challenges, identify opportunities for improvement, and implement solutions before problems arise. Proactive data practitioners are essential for organizations that want to get the most out of their data.

The following things are required to be a Proactive Data Practitioner:

### ❖ Validate Data at the start of Every Pipeline

Often, data originates from a single source before flowing into multiple systems. So checking its quality at the source is the best way to prevent low quality data from multiplying and spreading through your data pipelines. So before you allow your data to roam freely throughout your organization give it a ‘sense check’.

This means checking everything is correctly formatted, de-duplicated and is relevant to your business strategy as soon as it becomes a part of your core processes.

### ❖ Validate Data upon Ingest

Automatically validating data when it arrives in your environment can be incredibly valuable to your firm.

Here are a few basic validations checks that can save you trouble down the line:

- **Date Validation:** Make sure all dates are in a relevant format (*e.g.*, dd/mm/yyyy). You can also approve future or past dates, depending on what information you want to gather.
- **Value Verification:** You can create a list of accepted answers like country or state names or country phone codes. That way you only get information which is useful to you.
- **Reasonable Value:** Ensure all form fields only accept relevant information. For example, don't allow ‘n/a’ as a surname.

### ❖ Carry out Data Quality Monitoring

To identify mission-critical data you need to prioritize information and then classify it. First you need to prioritize all information based on criteria such as:

- Impact on revenue and productivity.
- Back-up recovery time.
- Application performance and data retention.
- Security requirements.

Then you can classify such data as either:

- **Vital:** You would notice the data was missing almost immediately.
- **Sensitive:** It would take a few days for you to notice this data was missing.
- **Non-critical:** Even if you didn't notice the information is missing the impact to your business would be minimal.

Focus on the data you would classify as either vital or sensitive. Anything else is not important enough to justify continued monitoring.

### ❖ Ensure your Reporting is Timely and Effective

Reporting on data migrations and integrations is rarely done well. You need to give stakeholders timely information so they can react quickly to any critical issues. The best reporting pipelines assign tasks, so everyone knows the next steps. Some common report examples are:

- Data quality reports
- Effort reports
- Resource utilization reports

When you deliver these reports, make sure they contain only relevant and actionable information. Don't cover up the signal with too much noise. If business leaders can't prioritize data quality actions, you will struggle to make the strategic changes you need to succeed.