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BUSINESS ANALYTICS BASICS: A BEGINNER'S GUIDE





INTRODUCTION

Whether it's a small business or a large corporation, its success depends on providing customers with what they need. Understanding what consumers want is even more important in today's business environment, and relying on assumptions is a recipe for failure.

In recent years, the popularity of business analytics is growing rapidly around the world because business analytics helps organizations extract meaningful information from data that enables them to better serve their customers.

The world, historically, has been always driven by data. However, even a few decades ago, the competition was regional, not global, as today. Therefore, enterprises could succeed without extensive analysis of the data for insights into their past decisions, setbacks, accomplishments, or future outcomes.

Previously, interesting concepts, productive employees, and a decent client base were all that an organization needed to flourish. But nowadays, in the age of globalization and digitalization, things are more challenging than before. Today, there is an overwhelming amount of data available, and companies are striving to take advantage of it to sharpen their competitive edge.

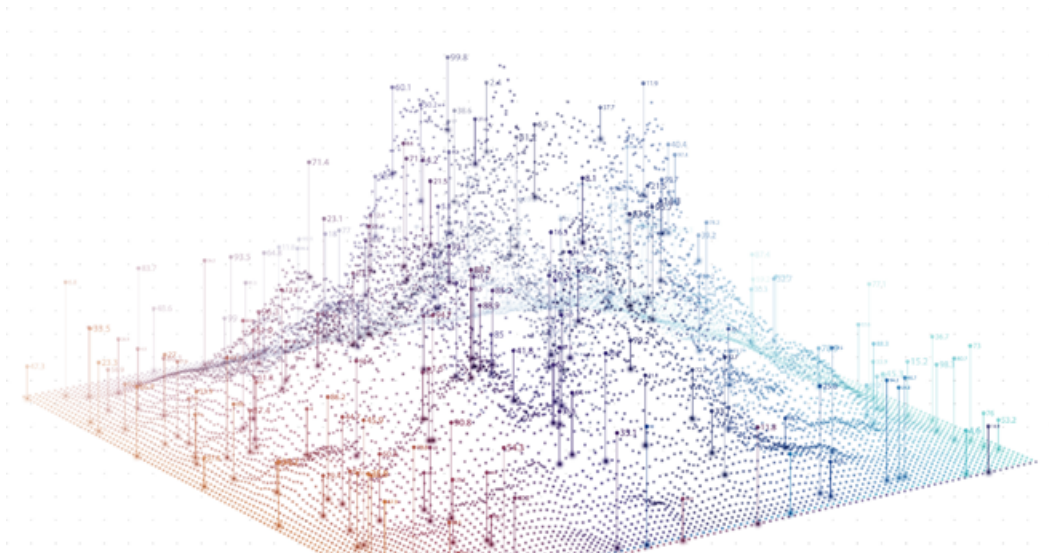
Raw data, anyway, is of no use. It does not add value, nor does it provide organizations with actionable insights that help them make informed decisions. To benefit from data, companies must

process it, and this is where the role of business analytics comes in. Business analytics enables organizations to implement effective strategies, make the right decisions, measure performance, and gear up for changes.

These days, more and more businesses are recognizing the importance of processing big data, and they realize that failing to do so carries the risk of falling behind the competition. Hence, the demand for business analysts is growing exponentially, and they are increasingly becoming the most sought-after professionals in the IT domain.

Pursuing a career in business analytics is all the more tempting because, despite the steady rise in demand, there is a severe shortage of supply. The widening talent gap opens up great opportunities for those seeking to step into this fast-growing field. Moreover, the demand for business analysts is going to remain strong. The U.S. Department of Labor forecasts that demand for management and business analysts will surge by **14 percent** between 2018 and 2028, faster than the average for any other profession.

This **business analytics handbook** provides you with the **basics of business analytics**, including an **introduction to business analytics**, its industry applications, and the best way to master the skills you need.



BUSINESS ANALYTICS BASICS

A subset of Business Intelligence (BI), Business Analytics leverages data to provide organizations with business-critical solutions using methodologies, technology, and techniques such as predictive analytics, data mining, and statistical analysis. Business Analytics enables enterprises to analyze data and transform it into valuable information that helps anticipate outcomes, identify trends, and make data-driven, smarter decisions.

Fundamentally, Business Analytics is classified into:

Descriptive Analytics: An interpretation of various historical data, descriptive analytics helps organizations better understand the changes that already occurred in business processes.

Predictive Analytics: It is the act of creating predictive models, utilizing diverse statistical techniques, which draw value from data sets, detect patterns, and offer predictive scores for a range of business outcomes.

Prescriptive Analytics: The final step of BA (Business Analytics), prescriptive analytics is a combination of descriptive and predictive analytics processes. It uses Machine Learning techniques to deliver insights on both past and future events.

The key constituents of business analytics are:

- ✔ **Data Aggregation** - Refers to the gathering, organizing, and filtering of data before analysis.
- ✔ **Data Mining** - Relates to the sorting of massive datasets using statistics, machine learning, and databases to establish relationships and identify trends.

- ✔ **Sequence Identification and Association** - This component of business analytics identifies predictable actions performed collaboratively or sequentially with other actions.
- ✔ **Text Mining** - Exploration and management of vast, unstructured text data for quantitative and qualitative analysis.
- ✔ **Optimization** - Engaging simulation techniques for testing various case scenarios, after the identification of trends and predictions of possible outcomes.
- ✔ **Data Visualization** - Presents a pictorial representation of the data, in the form of visual elements, such as graphs, charts, and maps.

Difference Between Data Analytics and Business Analytics

Although both data analytics and business analytics (BA) intend to enhance operational efficiency, BA specifically focuses on business uses, whereas data analytics refers to a broader term that encompasses OLAP (Online Analytical Processing), reporting, and Business Intelligence.

Under the umbrella of data analytics, data engineers, data scientists, and data analysts work together to facilitate the process of collecting, integrating, and preparing data for testing and validation of different analytical models to ensure correct results.

BUSINESS ANALYTICS IN THE REAL WORD: APPLICATIONS & USE CASES

According to a [study](#) by management consulting firm, McKinsey, an increasing number of enterprises are deploying business analytics techniques to streamline their operational processes and boost growth. Here's how top companies are applying business analytics to improve decision-making capabilities.



Company: Blue Apron

Sector: Restaurants and Food Services Industry

American ingredient-and-recipe meal kit service, Blue Apron, believes that knowledge of customer preferences and their behavioral patterns is crucial for business success.

The company applies predictive analytics for forecasting the demand, which helps fulfill orders effectively and prevent product spoilage.

Blue Apron reaches these predictions by using Machine Learning algorithms that include a wide array of variables, which can be grouped into three broad categories -

Recipe-related aspect - Analyzes historical data related to customer recipe preferences, and provides the company with predictions about meals they are more inclined to order.

Customer-related aspect - Conducts an analysis of past data to give the company a clear picture of a given customer's order frequency.

Seasonality aspect - Examines purchasing patterns to identify when the order rates can go up or down during particular seasons of the year.

Utilizing business analytics, engineers at Blue Apron were able to develop predictive models that enable the meal kit service company to get a deep understanding of seasonal demands, customer's buying preferences, and order frequency.

Uber

Company: Uber Technologies, Inc.

Sector: Transportation and Delivery Services

Uber Technologies, Inc., commonly referred to as Uber, keeps user experience as its top priority.

In order to streamline service capabilities, Uber, in 2018, built a COTA (Customer Obsession Ticket Assistant) tool that employs Machine Learning (ML) and Natural Language Processing (NLP) to help its agents improve their accuracy and speed while responding to customer support tickets.

The implementation of Customer Obsession Ticket Assistant delivered successful outcomes. The COTA tool lowered ticket-resolution times by over 10%. Its success encouraged the engineering team of Uber to further explore measures that could improve the tool.

In a short span of time, Uber came up with COTA v2, which focused on the integration of deep learning architectures that incorporate scalability features. Before the COTA v2 update roll-out, the company turned to the A/B testing method to compare the performance between the upgraded COTA v2 and its predecessor the COTA v1.

After the A/B testing, the engineers witnessed a reduction of nearly 7% in average ticket handling time, indicating that implementation of the COTAv2 would lead to more accurate and prompt service resolution recommendations.

Streamlining the process of ticket resolution with COTAv2 not only improved customer satisfaction level scores, but it also helped Uber save huge amounts of money on a day to day basis.

A MINI-GLOSSARY OF BUSINESS ANALYTICS TERMINOLOGIES

If you are planning to forge your career path as a business analyst, familiarizing yourself with the key terminologies mentioned in this business analytics handbook is one of the first steps in the process.

✔ **Ad Hoc Query**

It refers to a non-standard query for a specific business question. An Ad Hoc query is created to gain information as the need arises through “on demand” reports from BI or analytics software.

✔ **Behavioral analytics**

The data used for the purpose of gaining insight into people’s behavior to understand buying intent and predict future actions.

✔ **Contextual data**

This type of data provides context to an event, person, or object. This data is an essential part of the process of gaining a deeper and broader understanding of information and how it fits the larger picture.

✔ **Context diagram**

A context diagram refers to a specific form of a data flow diagram that outlines the business entities, staff, customers, suppliers, stakeholders, and external applications that will interact with a particular project or system.

✔ **CRUD**

CRUD is the acronym for: Create, Read, Update, Delete, which are the four basic functionalities that can be performed when dealing with data in a persistent storage.

✔ **Data anonymization**

The cutting off of the links between users in a database and their records in order to prevent identifiable information to be tracked to the source. It is a means to maintain user privacy and confidentiality.

✔ **Data visualization**

It refers to the practice of arranging data in a visual or graphical context. Data is presented this way as a means to enable users get a better understanding of the insights produced by analyzing a particular set of data.

✔ **Data stores**

Data stores are simply databases that are either produced by the Process under review and utilized by outside parties, or produced by outside parties and utilized by the Process.

✔ **Data warehouse**

It refers to a data repository that handles data coming from multiple subject areas (or data marts).

✔ **Gap analysis**

It is the process of bringing two items in comparison with the aim to determine the difference or “gap” that exists between them. This type of analysis helps determine whether the data that a company has can fulfil the business expectations that the company has set for its reporting and BI, and the areas where possible data gaps or missing data might exist.

✔ **Key performance indicator (KPI)**

A metric using which a business can track its progress when using BI analytics to determine whether its goals are being met, exceeded, or missed.

✔ **Metrics**

Metrics are measurements of data pertaining to performance. They are integral to any process or project for tracking progress and identifying trends within an organization.

✔ **Metadata**

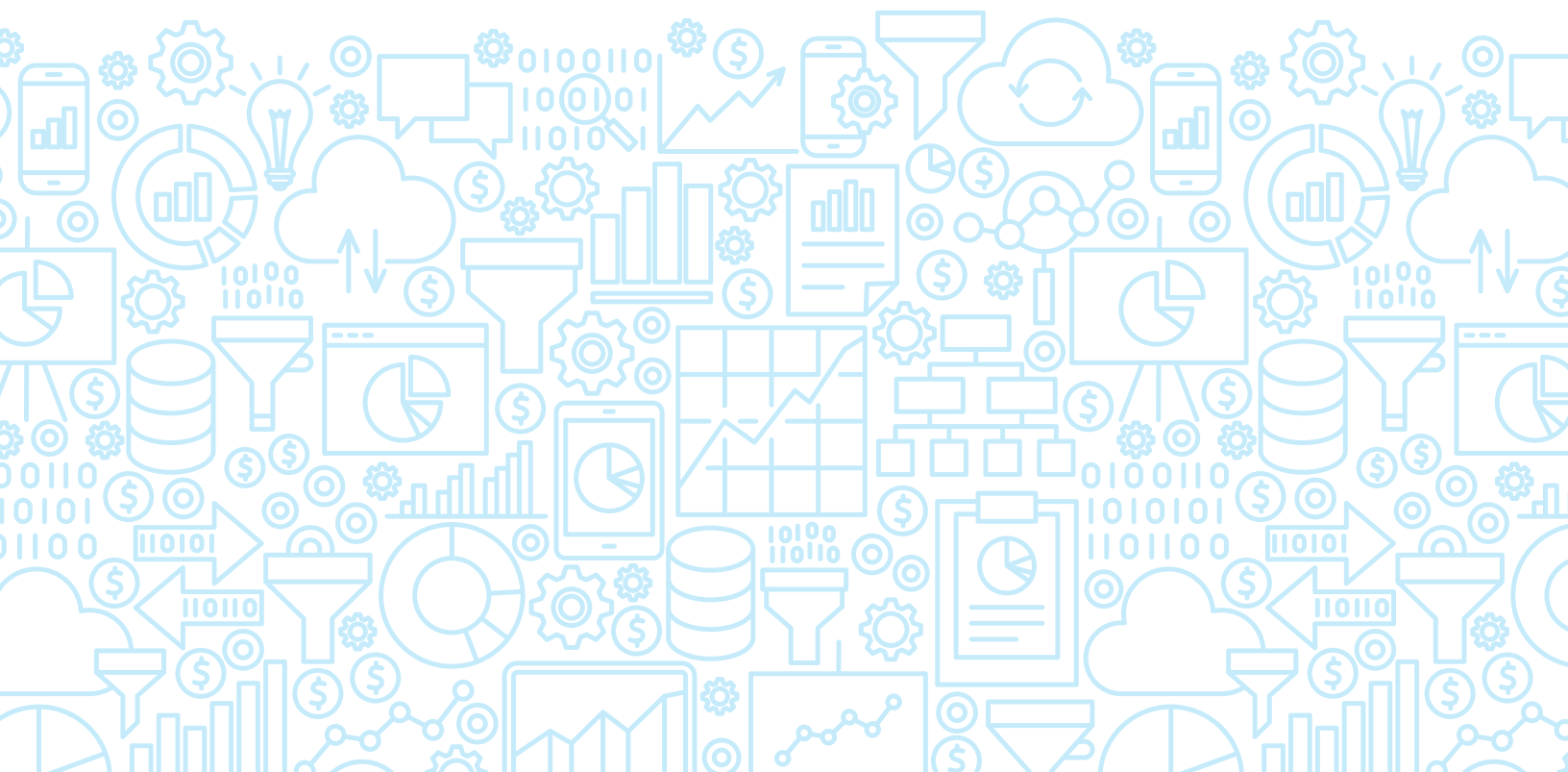
The data that describes and offers more information about the primary data.

✔ **Multipolar analytics**

A distributed big data model where data is collected, stored, and analyzed in different areas of the company instead of being centrally located and analyzed.

✔ **Scrum**

Scrum is an agile methodology that follows an iterative and incremental approach for the development of information systems. It is defined as a process framework that helps people address complex problems and create and deliver products of the highest value possible.



MUST-HAVE SKILLS TO GET HIRED AS A BUSINESS ANALYST

The aspirants wanting to build a career in this field are expected to possess industry-specific skills, which include basic technical skills, analytical skills, and a problem solving mindset. To be hired as a business analyst, you need to master the following:



Technical Skills

Business analysts must have an understanding of existing technology platforms and emerging technologies so they are able to determine what potential outcomes can be achieved using current applications and what new tools and offerings the organization can benefit from. Being able to design business-critical systems and the ability to test software tools are also critical to fulfill the role of a business analyst today.

While specific technical skills may vary from position to position, a business analyst should be comfortable using Software Design Tools, SQL Queries, and Business Process Models, besides other programs.



Analytical Skills

Professionals with superior analytical skills are treated as invaluable assets in organizations for their ability to identify, analyze, and translate the needs of customers into operational processes. 'Excellent analytical skills' is a phrase that's common to nearly every business analyst job description you'll ever come



across. And, that shows how important this skill-set is for an aspiring candidate to possess.

Communication Skills

In their day-to-day work, business analysts are constantly interacting with developers, clients, end-users, and management. In fact, successful project execution, to a large extent, depends on how clearly business analysts can articulate and communicate the project requirements, feedback, changes, and reports. Therefore, fluent communication isn't just a nice add-on skill, it's a quality that this job role demands.



Decision-Making Skills

A business analyst is required to make several key decisions within a business process on a daily basis, while playing a key role in determining the survival, growth, and profitability of an organization. This makes sound decision-making skills a mandatory requirement for those wanting to get hired as business analysts. More specifically, business analysts must have the capability to evaluate inputs from stakeholders, analyze situations, and selecting the right plan of action.



Managerial Skills

Aspiring business analysts must have top-level managerial skills to drive projects from the start to finish. From planning the scope of a project to delegating tasks, forecasting budgets to keeping everyone on task, handling change requests, and timelines, these are responsibilities candidates will find outlined by almost every hiring company in business analyst job descriptions.

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