S_001_Introduction to Data Science

What is Data Science?

A Wiki Explanation: "Data Science is an inter – disciplinary field that uses scientific methods, processes, algorithms, and systems to extract knowledge and insights from many structural and unstructured data. Data Science is related to data mining, machine learning and big data". ***(Wikipedia, 2021).***

Definition for Data Science by book: "Data Science encompasses a set of principles, problem definitions, algorithms, and processes for extracting nonobvious and useful patterns from large data sets. In fact, the terms data science, machine learning, and data mining are often used interchangeably". ***(Kelleher & Tierney, 2018).***

Let us Dive Deep:

Before proceeding into Data Science as a whole, first let us know the significance of "Data". This entire S_001 is made by "wh" statements, it helps us to get one's head around the concepts ahead of the field.

What is Data?

"Facts and statistics collected together for reference or analysis" – "Things known or assumed as facts, making the basis of reasoning or calculation".

What is Data in Data Science?

Before anything else, there is always a data. Data is the foundation of data science. It is the material on which all the analyses are based on.

What are the Types of Data in Data Science Context?

There are two types of Data: traditional and big data.

What is Traditional Data?

Traditional data is data that is structured and stored in databases which analysts can manage from one computer; it is in table format, containing numeric or text values. Actually, the term "traditional" is something we are introducing for clarity. It helps emphasize the distinction between big data and other types of data.

What is Big Data?

Big data, on the other hand, is… bigger than traditional data, and not in the trivial sense. From variety (numbers, text, but also images, audio, mobile data, etc.), to velocity (retrieved and computed in real time), to volume (measured in tera-, peta-, exa-bytes), big data is usually distributed across a network of computers.

Where does the big and traditional data come from?

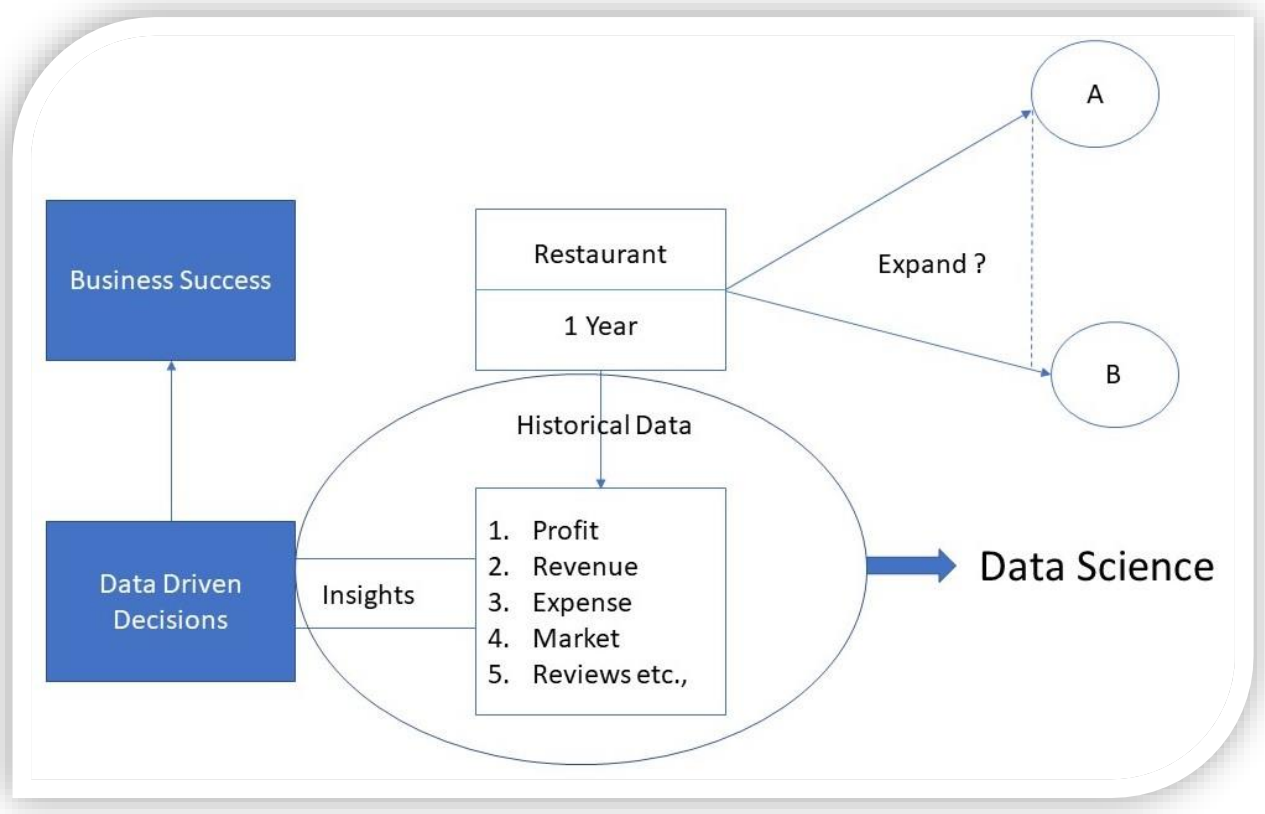
Traditional data may come from basic customer records, or historical stock price information.

Big data, however, is all-around us. A consistently growing number of companies and industries use and generate big data. Consider online communities, for example, Facebook, Google, and LinkedIn, or financial trading data. Temperature measuring grids in various geographical locations also amount to big data, as well as machine data from sensors in industrial equipment. And, of course, wearable tech.

Why is it called as a Data Science? Why not Data Statistics or Data Mathematics?

Kindly refer to my other article "230 Years of Data Science" ***(Ramesh, 2020)***. Now let us materialise what is Data Science with the real time instance.

What is Data Science?

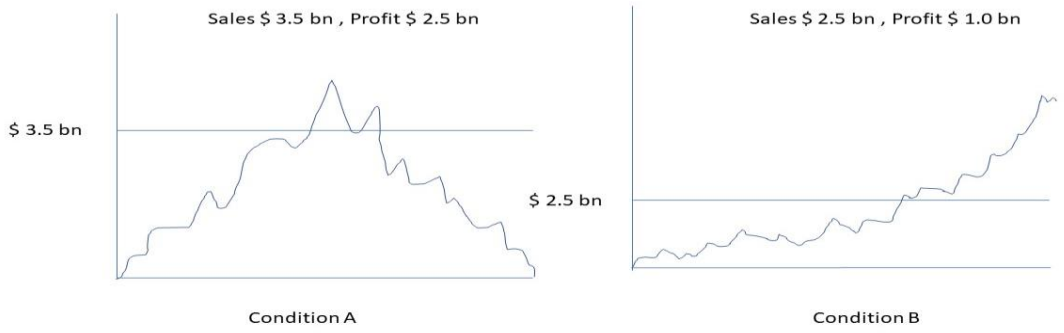


Let us ascertain a restaurant which operates for a year planning to expand. On considering some of its historical data during the year of operations such as profit, revenue or income, expense, market, and reviews etc., by the help of these data we have to withdraws the insights.

"The insights which are drawn from the Data's are called Data Science". We can be able to extract the data driven decision whether to expand the business and it will lead to business success.

These macro insights having ability to transforms the decision. Condition A and B are good examples. A is operating better than B by means of profit and revenue generated during sales. Due to certain drawn insights condition B may performs better than A. By the above mentioned metrices we cannot be able to differentiate but according to me it may be one of the factors.

Restaurant A: has good infrastructure, more seating capacities, quality, hygiene, high marketing.



Restaurant B: serves good quality with minimal infrastructure, taste, hygiene, reduced cost.

Infrastructure and marketing of restaurant A may attract the customers for sometimes but at particular point of time the “Word by mouth marketing of B” inclined.

Thanks for reading comment your perceptions of “Data Insights” for Condition A and B.

Thank you lets catch on “S_002_Evolution of Data Science”

References

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