Data Visualisation and storytelling - The new mantra for managerial communication

Given the fact that companies are moving towards data driven decision making, it becomes important for every manager to learn the art of visualisation and storytelling using data.

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Due to the emergence of technologies such as artificial intelligence and big data, every manager today is expected to be data-savvy.

Organisations generate large volumes of complex data nowadays; therefore, managerial communication involves effective communication of the data generated by the organisations for easier understanding of key performance indicators (KPIs) and economic drivers of the business.

It is known for a long time that the best way to communicate an important message is through visuals and storytelling.

Fortunately, thanks to software such as Tableau, Power BI, Qlik Sense, visualisation of complex data is made simpler now, thus making the communication very effective through innovative visuals.

Visualisation has become an important element of big data and artificial intelligence. It helps organisations to compress large volumes of data into easily understandable charts and graphs which breaks the language barrier.

Today, the annual reports of companies are filled with visual charts. Visualisation along with storytelling is an excellent tool for management communication today.

It is reported that 65% are visual learners and we retain 80% of what we see (Romih, 2016). Not just communication, visuals also enable business intelligence which can lead to better decision making driven by data.

The importance of visualisation can be traced back to Gestalt principles, a collection of visual perception principles proposed by German philosophers that aid us in understanding how human perception works which can be further exploited for managerial communication.

Visualisation allows the managers to communicate complex relationships and trends which can be easily understood.

For example, one can provide the sales data in a tabular format or use a trend graph. The user will find it difficult to understand the trend when it is provided in a tabular form, however, it will be very easy if it is provided in a graph form.

The stakeholders can easily understand whether sales value is increasing or decreasing or if there is a pattern in the form of seasonal variation.

Statistical measures used by managers can be misleading as demonstrated by Anscombe (1973). For example, consider the following sets of data (Table 1) used by Anscombe to demonstrate the importance of visualisation:

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Table 1: Anscombe's Data

X1	10	8	13	9	11	14	6	4	12	7	5
Y1	8.04	6.95	7.58	8.81	8.33	9.96	7.24	4.26	10.84	4.82	5.68
X2	8	8	8	8	8	8	8	19	8	8	8
Y2	6.58	5.76	7.71	8.84	8.47	7.04	5.25	12.5	5.56	7.91	6.89

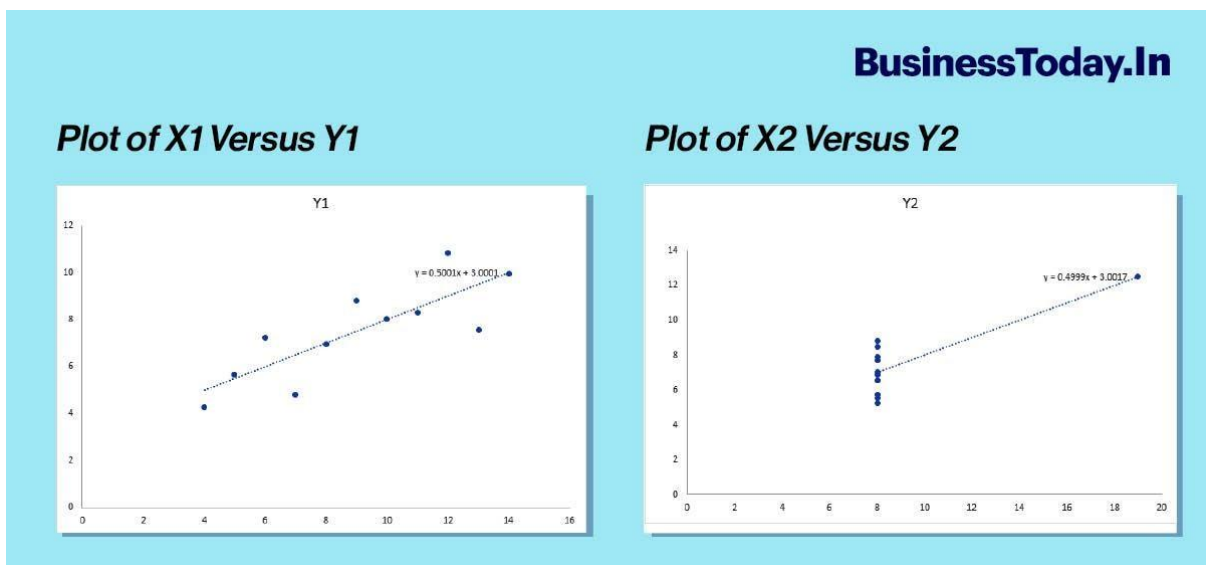The average and variance of the variables X1, X2, Y1 and Y2 are provided in the following table (Table 2).

Table 2: Descriptive Statistics of Data in Table 1

Average				Variance			
X1	X1	Y1	Y2	X1	X1	Y1	Y2
9	9	7.5	7.5	11	11	4.12	4.12

In both sets of data, the average of X values is 9.0 and the average of Y values is 7.5. Whereas the variance of X and Y values are 11 and 4.12 respectively.

Even the regression equations are the same in both data sets. By just looking at the average, variance and regression equation one may arrive at a wrong conclusion that these data sets have similar characteristics.

However, let us look at the plot of these two data sets (X1 Vs Y1) and (X2 Vs Y2). The corresponding charts are shown in Figures 1 and 2.

Plot of X1 Versus Y1

Plot of X2 Versus Y2

It is obvious from visuals in Figures 1 and 2 that the relationships between the variables (X1, Y1) and (X2, Y2) are completely different, however, simple descriptive statistics such as average and variance are unable to differentiate the data, whereas simple visuals can communicate the difference in relationship effectively.

Given the fact that companies are moving towards data driven decision making, it becomes important for every manager to learn the art of visualisation and storytelling using data.

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