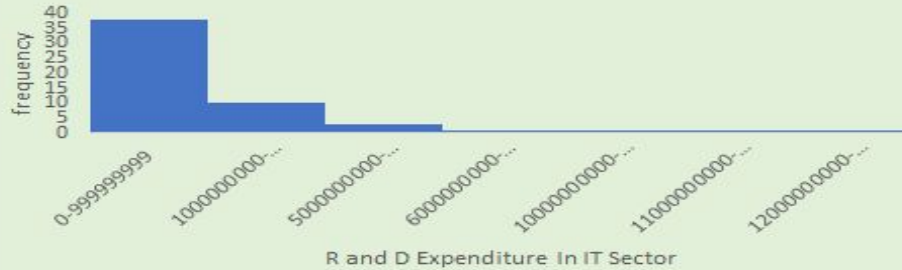


NYSE Data Project  
**Introduction to Data**  
By  
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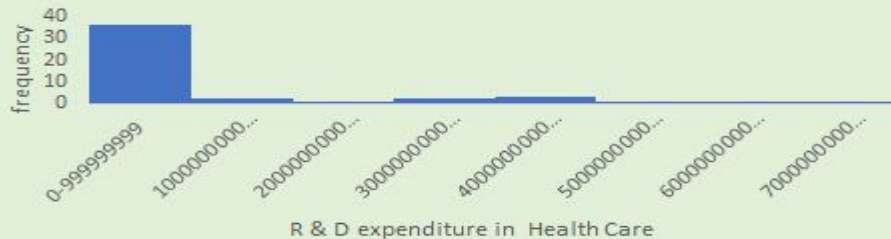
# Does Health care sector has higher expenditure levels in year 4 than IT sector ?

## IT Sector R & D Expenditure for year 4



ResearchandDevelopment ▼

## Health Care Sector R & D Expenditure for year 4



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Here is the histogram for the annual R & D expenses for Health care and IT sector reported for all the companies in Year 4.

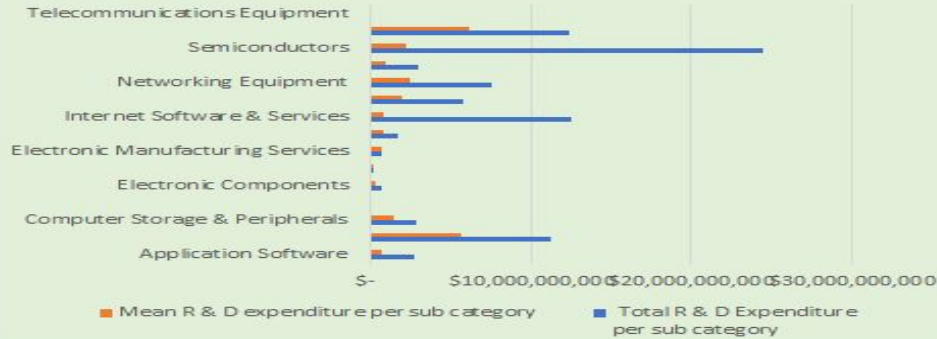
Both distributions are right or positively skewed which means that Mean for each is higher than the median. The mean for HealthCare sector is \$1.18 billion and for IT is \$1.5 billion.

However, median for IT is almost double (\$653,816,000) than the median of Healthcare (\$292,800,000). The range for IT is \$12.74bn and for Healthcare is \$7.69 bn, this means that an outlier is present which is pulling the mean and the standard deviation higher. In IT it is industry from semiconductors and in health care it is from pharmaceuticals whose expense is much higher than the rest of the data.

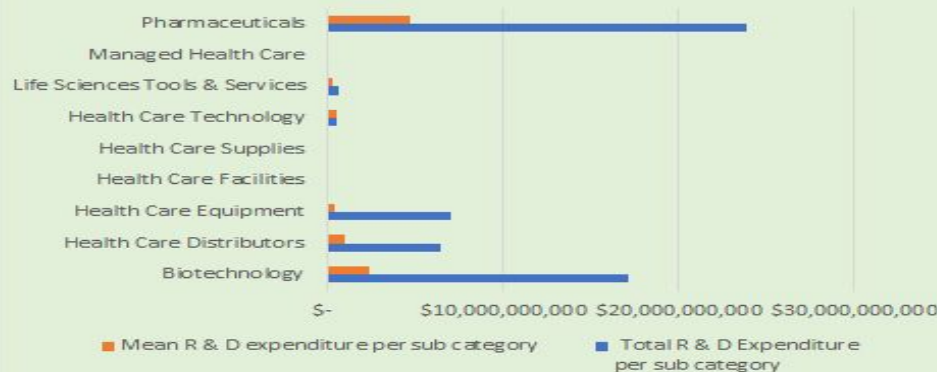
Standard deviation for IT is also slightly more than the Health care (\$2.7 billion in IT and \$1.9 billion in Healthcare companies) which means that the variability in R & D expenses in IT companies is higher, with more companies spending above \$1.5 billion and 50% of the companies are spending above \$653 million on R & D that year.

# Which subcategory in IT and Health care sector has highest contribution in R & D Expense in year 4

**Total and mean R & D expense in IT sector per sub category in year 4.**



**Total and mean R & D expense in Health care sector per sub category in year 4**



Here is the bar chart for the annual R & D expenses for Health care and IT sector reported for all companies in Year 4 according to subcategory.

Total contribution of IT sector in R & D Expense in year 4 is \$85 billion and Health sector is \$55 billion.

Highest amount of contributions in R & D expense in Health care sector in year 4 are from **pharmaceutical companies** (\$23 billion) which is 43% of total R & D expenditure. Its Mean( \$ 4.7bn) is greater than the Total Mean of Health care sector (\$1.8bn).

In IT sector, highest contribution in R & D expense is from **semiconductors** ( \$24bn) which is 28% of the total contribution. However, the mean total expenditure of **systems software** is \$6.2 billion which is higher than the average total mean of entire IT sector (\$1.5bn)

It looks like that companies in the pharmaceutical and system software industry have higher R & D expense on average than all industries categorized under Health care sector and IT sector.

# References

- WIKIPEDIA

[https://en.wikipedia.org/wiki/American\\_Water\\_Works](https://en.wikipedia.org/wiki/American_Water_Works)

- How to create frequency tables in excel.

<https://www.youtube.com/watch?v=pDlpFKiYie4>