



# ABC XYZ Segmentation

# What is ABC XYZ?

ABC segments materials into 3 levels. A items are typically 70% of value consumption in SAP, B items are 20% of the value of the valued consumption, and C items are typically 10% of the valued consumption.

XYZ is a method of segmenting parts into groups based on the coefficient of variation (COV) based on consumption. An X item has very low variation in its consumption rate. On X items the COV is under .5. Y items have a COV of .5 to 1, and Z items have a variation greater than 1.

# Why do we want to do a segmentation?

- We do ABC segmentation because we want to manage our more costly items differently than inexpensive items.
- We do XYZ segmentation because low variation items are easier to predict than high variation materials, and therefore can be managed differently.

# ABC XYZ

## Coefficient of Variation (COV)

- The Coefficient of Variation is not a hard formula, but if we do not use it very often it can “look” hard.
- The key concepts are what is the average value of a population, and how much variation is in the population.
- Situations with a lower amount of variation, where the values are all close to the populations average value, outcomes are easier to predict than in situations where there is a wider band of variation.

The formula to find the sample mean

$$\mu = \frac{\sum x}{n}$$

Formula to calculate sample standard deviation

$$\sigma = \sqrt{\frac{\sum (x - \mu)^2}{n - 1}}$$

Formula to calculate **coefficient of variation**

$$CV = \frac{\sigma}{\mu}$$



This looks hard!

Greek letters always spell trouble!

# ABC XYZ

## Coefficient of Variation

- Bell curves can help illustrate this.
- The Red curve has the smallest variation around the average (let's say the average value is 1). Here we would say the COV is  $.5/1=.5$  COV.
- The Green Curve has a wider distribution. It has more variation and we see that by observing the curve is flatter than the red curve. With a standard deviation of 2, and an average value of one, we say the COV is 2.0.
- So visually, the more peaked the curve, the less variation, and the "X" like the population. The more flat the curve, the more "Z" like. And in between the two is your set of "Y" parts.

