

# WHAT IS SIX SIGMA



Six Sigma is a structured, data-driven approach and methodology for process improvement. It has a focus on eliminating errors and variation in business processes. The fundamental objective of the Six Sigma is to apply a measurement-based strategy to assess and implement process improvements and reduce variation through the application of DMAIC improvement projects.



Six Sigma measures process excellence in the process and / or system that you are working in. If the process is operating at a Six Sigma level, it would at most produce 3.4 defects for every million opportunities to create a defect. The measure for Sigma level is Defects Per Million Opportunities (DPMO).

Sigma	DPMO
6	3.4
5	230
4	6200
3	6680
2	308500
1	691500

When measuring DPMO, the key is to identify the opportunities available to create a defect. Each interaction that has the ability to produce an error is counted.

For example, a paper-based credit application form may have 25 different fields for you to fill in and submit to get credit approval. This means that there are 25 “opportunities” to input an incorrect value. If a clerk must type those written fields into a database that would be an additional 25 “opportunities” to create a defect. This now has created a total of 50 “opportunities”. If there are 100 people applying for credit per day, then the count grows to 5000 “opportunities”.

## Six Sigma Analogy

If you played 100 rounds (18 holes each) of golf per year and played at:

**6 Sigma Level:** You’d miss 1 putt every 163 years

**5 Sigma Level:** You’d miss 1 putt every 2.33 years

**4 Sigma Level:** You’d miss 1 putt every 9 rounds

**3 Sigma Level:** You’d miss 1 putt per round

**2 Sigma Level:** You’d miss 6 putts per round

*Source: From John Petty, “When Near Enough is Not Good Enough”*