

The Pareto Principle in the Modern Economy

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Abstract: *Despite of its age, the Pareto Principle is still a strong mechanism constantly used in quality control of projects from various areas, including the IT field.*

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1. Introduction

The name of the Pareto Principle (also known as the 80/20 rule or Pareto's Principle of Unequal Distribution) was suggested by the Joseph Juran (1904-2008), an American management consultant that was born in Romania (Braila).

He revealed the work of the 19th century Italian professor of political economy Vilfredo Pareto that discovered that the top 20% of any country's population accounts for more or less 80% of its total income.

Initially, Pareto noticed the distribution for Italy but right after he extended the analysis on several other countries obtaining very similar results. Of course, the principle can be virtually applied in any area, like domestic behavior, for example – we can easily notice that we eat 20%

of favorite food for 80% of time or, similarly, we spend 80% of time doing the most frequent 20% of activities.

Mathematically speaking, there is nothing special about the proportion of 80/20 but many real systems come across a ratio very closed by the Pareto's distribution.

2. Pareto and the Modern Economy

In the modern economy, the principle was quickly extended to quality control, stating that most defects in production are the result of a small percentage of the causes of all defects. This is generally defined as "the vital few and the trivial many" or "the vital few and the useful many".

Starting from the Pareto Principle, Juran lately introduced the concept of CWQM (Company Wide Quality Management) that was based on three pillars (also known as Juran Trilogy):

- quality planning – is focused on identifying the customers together with their needs that should be satisfied;
- quality control – follows the process of producing goods and services that meet the previously identified needs;
- quality improvement – the efforts performed to constantly improve the previous processes.

In our days, the principle is still very applied in a variety of areas, especially the quality control field. For example, in the IT industry it is considered that 80% of users are actually using only 20% of the features.

In the recent years, the principle was mostly applied on errors rather

than features because it was observed that 80% of errors are generated by the 20% of the detected bugs, so a small proportion causes most of the errors (Figure 1).

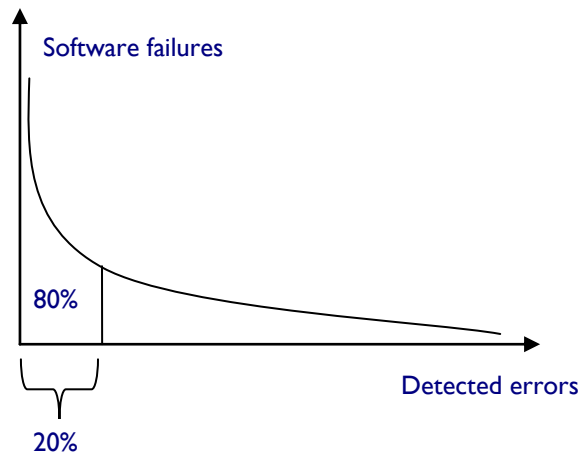


Figure 1—Graphical Representation of the Pareto Principle

This is a winning strategy applied by the big software companies that are fighting with the bugs since the customer satisfaction can be quickly improved by fixing only a small amount of the reported errors.

Conclusions

The Pareto Principle is still a strong mechanism constantly used in quality control of projects from various areas, including the IT field.

References

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