



# ASIGEST ACADEMY

## HISTORICAL FOUNDATIONS OF RISK MANAGEMENT

**Risk management has a long history. It has roots in the development of the probability theory in the seventeenth century and has been continuously developed since then.**

### **1654: Probability theory**

In 1654, a French nobleman named Chevalier de Méré challenged the mathematician Blaise Pascal to solve a puzzle related to a game of chance. The puzzle revolved around how to divide the stakes of an unfinished game of chance between two players when one of the players was leading the game.

The outcome of this challenge led to the discovery of the probability theory by Pascal and Fermat, which allowed people to make decisions and predict the future using numbers. Over the years, mathematicians and scientists have advanced the probability theory, from a way to increase your odds in gambling to a powerful tool for data analysis.

This theory remains as the mathematical core of the concept of risk as we know it today.

### **1700: law of large numbers**

Over time, other quantitative risk management techniques emerged. In 1713, the Swiss scientist and mathematician Jacob Bernoulli demonstrated the law of large numbers. This law states that as the number of variables increases, their sample mean (the average of numbers) approaches their theoretical average, which essentially means that the accuracy of the predictions will improve as the amount of source data increases. This law is fundamental in insurance underwriting and for statistical sampling methods. In fact, in 1725, mathematicians were drawing up tables of life expectancy and the British government was able to finance itself through the sale of life annuities.

### **1730: law of the averages**

In 1730, Abraham de Moivre developed the structure of normal distribution (now commonly known as the bell curve or Gauss function) and also discovered the concept of standard deviation to measure dispersion. These two concepts form the law of averages and are fundamental for modern risk quantification techniques.

### **1750: Bayesian probability**

The theories and laws that had been developed by the middle of the eighteenth century allowed maritime insurance to emerge as a thriving business.

In the 1750s, an English minister named Thomas Bayes further developed statistics and risk management by demonstrating how decision-making could be improved by mathematically combining new information into old information (Bayesian networks).



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## **1875: Regression towards the mean**

In 1875, Francis Galton, a secular mathematician, discovered regression in the middle. This means that every time someone makes a decision based on the expectation that things will return to normal, he is playing with the idea that things will actually regress to the mean.

## **1952: Diversification**

Harry Markowitz, when a graduate student at the University of Chicago, mathematically demonstrated why it is not wise to "put all the eggs in one basket" and that diversification is a necessary risk management strategy that should be used.

## **1956: the advent of risk management**

The concept of risk management first appeared in an article written for the Harvard Business Review by Russell B. Gallagher, in which Gallagher invited corporate insurance buyers to focus on the cost of facing the effects of risk exposure rather than to get the most insurance for their money. Managers also began to realize that it was equally important (and less costly) to avoid losses such as insuring against themselves. They realized that insurance was only a form of risk mitigation to be considered as part of the systematic management of risk.

## **1995: AS / NZS 4360**

In 1995, *AS / NZS 4360: 1995 Risk Management* was developed.

This was the first true risk management standard that provided meaningful guidance on how to structure a risk management process.

This standard was revised in 1999 and again in 2004 and at that stage it was decided to develop an international risk management standard.

The International Organization for Standardization established a working group that used AS / NZS 4360: 2004 as their first draft. The risk management process remains as described in AS / NZS 4360: 2004, but updates have been made to the definition of risk, as were explained in the principles and the amount of guidance to implement and integrate in the risk management provided.

AS / NZS 4360 has been replaced by ISO 31000: 2009.

(SOURCE: Australian and New Zealand Institute of Insurance and Finance & Federation of European Risk Management Associations)

## **2018: Implementation of UNI ISO 31000:2018 Risk management – Guidelines**

The standard is intended for those who create and protect organizational values handling the management of risks, making decisions, setting and achieving goals and improving performance. It provides guidelines for managing the risks that organizations face and can be used throughout the organization's life, as well as being applied to any activity, including decision-making at all levels. The common approach suggested by the document is suitable for managing any type of risk, it is not dedicated to a particular sector or industry and can be adapted to any organization and context. The principles, the frame of reference and the process outlined in this document allow one to manage risk in an efficient, effective and systematic way. (SOURCE: UNI ENTE ITALIANO DI NORMAZIONE)