

Modeling and Simulation Body of Knowledge (MSBOK)

updated by: Dr. [Tuncer Ören](#) - 2018-02-04

Challenges and Benefits of Adopting a Comprehensive and Consolidated View to be able to perceive all aspects of M&S

To be able to give a comprehensive definition of M&S, it would be beneficial to consider its multifaceted nature as attested even by:

1. Domain-independent categories of usages of M&S
2. Different perceptions of M&S, and
3. The focus areas of many [M&S associations](#) and organizations.

Both aspects of simulation, namely performing experiments and gaining experience with many implications should be considered.

The following report, from National Science Foundation (NSF) Blue Ribbon Panel on Simulation-Based Engineering Science and titled: “[Revolutionizing Engineering Science through Simulation](#)”, May 2006 is a good indication of the increasing importance of M&S in science and engineering. Of course, M&S has been used—for decades—very successfully in many applications of science and engineering.

The following may serve as a caution, for not to be trapped in one single point of view:

"Model-based simulation is like a gem: it is multifaceted. Some of the specialists too close to one of the facets, perceive only that single facet and the reflection of the success of their careers through it. The more they see the latter, the more, it seems, they are enamoured with that aspect of modelling and simulation instead of exploring new horizons. If it was to this attitude, nobody would have discovered the New World.

The fable of the elephant and the blindfolded men is a well-known metaphor in eastern cultures, to illustrate how easy it is to confuse the parts with the whole."

(From the 'Forward' of the book by B.P. Zeigler, Multifaceted Modelling and Simulation and Discrete Event Simulation, Academic Press, 1984. Forward by Tuncer Ören.)