

Editorial

Decision-making has always been part of human's life and evolution. Humans have developed many techniques to analyze different scenarios and environments in order to improve such decision-making processes. Some of these techniques make it possible to simultaneously analyze multiple criteria, while some others allow decision groups to make evaluations by integrating the opinions of all members.

Within industrial contexts, managers are usually the top decision makers. They hold permanent contracts and have high incomes. Nowadays, advanced information and communication technologies support and assist these administrators in their decisions. They enable to consider several variables – including time costs – and perform calculations with greater precision. Such systems integrated into business technologies are usually called Decision Support Systems (DSS).

As a result of their usefulness, DSS are increasingly gaining popularity in different domains, not only for businesses. They have also been implemented in engineering, the military, and medicine. Moreover, they are particularly valuable in situations in which the amount of available information is prohibitive for the intuition of an unaided human decision maker and when precision and optimality are of importance. Similarly, DSS can support choice among well-defined alternatives and build on formal approaches, such as the methods of engineering economics, operations research, statistics, and decision theory. Finally, they can use artificial intelligence methods to heuristically address problems that are intractable by formal techniques.

Therefore, it can be stated that the proper application of decision-making tools increases productivity, efficiency, and effectiveness. Furthermore, these systems offer many businesses a comparative advantage over their competitors, which allows them to make optimal choices in technological processes and their parameters, planning business operations, logistics, or investments.

This special issue collects nine papers, some of them are best papers presented at the First International Workshop on Intelligent Decision Support Systems (DSS) for Industry Application, co-located with the 14th Mexican International Conference on Artificial Intelligence (MICA I 2015). It aims to publish developments from practitioners in the research areas of industrial engineering, computer science, management science, systems engineering, operations research, optimization process, software engineering, computational engineering, innovation systems, and logistics engineering, among others. All these areas at some point focus on the use of Decision Support Systems for the industry. Similarly, this special collection addresses topics on the implementation of conceptual frameworks, strategies, techniques, methodologies, informatics platforms, and models for developing Intelligent Decision Support Systems.

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