

# SMART MODEL-BASED GOVERNANCE: TAKING DECISION MAKING TO THE NEXT LEVEL BY INTEGRATING DATA ANALYTICS WITH SYSTEMS THINKING AND SYSTEM DYNAMICS

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## Abstract

Although Big Data initiatives are currently presenting promising results, there is still some skepticism about their real capabilities as they are contextual dependent, and their objective and accuracy are somehow misleading (Armenia et al., 2018). Approaches underlying the extraction of knowledge from a large amount of data are surely important to understand how a system has behaved until a certain point in time. However, they, unfortunately, lack a real and effective capability to infer future system's behaviour and its relationship with other systems (some of which might even have counter-intuitive behaviours). As a direct consequence of this, the Systems Thinking approach may help fill the gap, as it advocates the ability to see the world as a complex system where everything is connected. Joining Analytics techniques and Systems Thinking models brings us to the definition of a new governance approach, based on "smart" models (Armenia et al., 2017). The aim of this work is to propose a new conceptual governance framework based on a systemic approach and translated into a system dynamics model for knowledge management within organizations: Smart Model-based governance. The purpose of this model is to overcome the bias linked to

the models of governance and knowledge management either from a purely procedural point of view or from a purely declarative point of view. The former, in fact, have as their main limit that of the total absence of the tacit dimension of knowledge related, for example, to the ways in which processes are actually implemented in organizations and how management perceives the structure. The latter, instead, have the main limitation of not considering the effective functioning of the organization as regards IT processes and often generate cognitive bias. The proposed model of Smart Model-based governance, therefore, allows to overcome the limits of both, considering both types of knowledge at the same time and, through system dynamics processes, allows us to understand how different and complementary elements (Big Data, thought systems, models and simulation) can be combined to facilitate the achievement of good governance (Grove et al., 2018; Rokundo, 2017; Seetharaman et al., 2016) based on knowledge governance as a strategic resource for all organizations.

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