Chapter 3
Data Governance in the Digital Age

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ABSTRACT

In the contemporary organizational context, the sharing and transfer of knowledge play a significant role, and therefore, it is important to overcome internal and external barriers for them to be processed. This can be facilitated by the implementation of data governance (GovD). The problem is that, in addition to being a new construct and still little studied, conceptual divergences are fed by the amplitude the possible dimensions of analysis. In this context, the objective of this study arises in identifying the conceptualization of the construct governance and data proposed in the scientific literature to support its better understanding and perspective of future investigations. A theoretical research was conducted through a systematic literature review, followed by an analysis of the most relevant publications on the subject. The discussions about this subject are considered in the context of contemporary organizations; however, it signals the importance of future studies of empirical and theoretical order to foster discussions on the subject today.

1. THEME AND SEARCH PROBLEM

In the world of ICT's, the term "ICT governance" is well definedand is known, (Weill and Ross, 2004). It is a discipline of the subset of corporate governance focused on information and communication technologies, their performance and risk management. The growing interest in ICT governance is partly due to compliance (quality) initiatives as well as the recognition that ICT is a resource of increasing importance in products, services and in the implementation and optimization of processes. It consists of "organizational structures and processes that ensure that ICT's support the strategy of organizations and their objectives, (Governance Institute, 2003). ICT governance is therefore an instrument of the alignment of ICT's with the business, according to (Hirschheim and Sabherwal, 2001).

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Therefore, the proper use of information (and not only its production) is of vital importance and is adequately a candidate for governance. We believe (it is our premise) that organizations that have an implemented process of information governance are more effective in identifying sources, collecting, processing, and using information and increasingly creating value for other sources of information. Information governance involves defining the global and immediate or transactional environment, identifying new opportunities, rules and decision-making power for the evaluation, creation, collection, analysis, distribution, storage, use and control of information, which answers the question:

"What is the information that managers need for support in decision making and how they make use of it and who is responsible for it?"

Research into current practice reveals that in many organizations, if not all, a comprehensive information governance policy, (Economist Intelligence Unit, 2008), especially for external and free information, and often the policies and processes they have are not effective.

2. INTRODUCTION

Data is valuable organizational assets and, therefore, must be professionally managed to maximize its value. Governance and management are complementary functions. In the public sector, governance is a response of the State to the external environment, based on the various interactions between public and private actors that influence or are influenced by the activities of public institutions, taking into account the social, political and legal arrangements that structure relations between government institutions and their public.

Governance defines mechanisms to ensure good management, with an emphasis on strait participation, transparency, integrity, and accountability. One of the mechanisms of governance is the implementation of policies, which are formal instruments where the principles to be adopted are defined, as well as the guidelines, responsibilities and how the organizational structure will conduct and monitor, (Ladley governance, 2012; Stumpf, 2016).

From a scientific perspective, public research, development and innovation (R&D) institutions have strived to find new ways to manage data,generating them in their internal activities, in research networks, in interinstitutional relations and in interactions with society in general. This effort aims to ensure the proper management and preservation of these assets, especially research data, to achieve sustainability and competitiveness in the modern scientific and technological system.

Data management has become a major challenge for these institutions, as the global information environment moves towards new phenomena, paradigms, and movements, such as Big Data, e-Science, Open Government and Open Science.

Big Data is defined as the set of "informational assets of great volume, variety and speed, which require innovative formats of adequate cost and benefit for data processing, enabling knowledge and decision-making" (Gartner, 2015). In addition to volume, variety and speed, the phenomenon is also dedicated to the veracity and value of the data, (Mcafee; Brynjolfsson, 2012; Kitchin, 2013).

About value, research institutions generate large volume of data, which are underutilized, little explored or even lost. E-Science – data-intensive science – is the new paradigm of science that is based on the exploration of large amounts of data that are generated throughout research projects and activities, collaborative research and the use of shared resources for data exploration, (Appel, 2014; Borgman,