



Information Technology Strategy: a Case for Data Governance

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ABSTRACT

In recognition of the challenges imposed on organizations relating to the handling and processing of voluminous data or big data in this digital age, this paper argues and makes a case for data governance in the context of information technology strategy. It starts by giving an overview of the current organizational climate, which, owing to advances in technology, is flooded with information that organizations must process and derive value from. After defining data governance, it proceeds to argue why this concept is essential for the survival and success of organizations. From gaining a competitive advantage to obtaining various management capabilities, various merits of data governance are presented and supported by pertinent literature. Some strategies to help in the same breath are also highlighted, among them the provision of structured organizational insight, ensuring effective strategic communication, ensuring regulatory compliance, and obtaining the buy-in of various stakeholders. Overall, the paper presents a concrete case in support of the adoption and implementation of effective data governance, otherwise without which organizations face the risk of collapsing.

KEYWORDS

Data Governance, Data Management, Decision Support Systems, Data Governance Strategy.

INTRODUCTION

In today's digital era, organizations are continually finding themselves in positions where they must handle voluminous data, which they must use as may be needed towards realizing organizational objects. Technological advancements now imply organizations must deal with many data (what can precisely be conceptualized as big data), which according to Gartner (2012), entails high-variety, high-velocity, and high-volume information assets prompting innovative, accurate, and cost-effective means of information processing as to be used in informed decision making. As such, this paper considers big data in the realm of organizational management whereby organizations encounter voluminous information, some of which may be entirely new and from new sources, but nevertheless crucial for purposes of giving enhanced insight and offering help in decision-making. Other aspects of the implied information can include data value and veracity. Indeed, data governance gains elevation as far as the maintenance of data integrity and data quality is concerned. Many

authors, for instance, Thompson and colleagues (2015), agree that data governance impacts information technology as well as related data management efforts and initiatives, hence occupying a central position in one of the essential organizational functions: data management. Some specific practices in this breath include all those initiatives of data management that must be implemented over the lifecycle of data.

To emphasize, it is becoming increasingly important for organizations to strategize on implementing effective data governance designs given the circumstances surrounding information and data at large (Earley, 2014). Many organizations today are unable to meet their goals because of the failure to have in place a well-structured approach to information technology and data management. According to Violino (2013), effective transition to (and therefore effective handling of) big data requires organizations to have in place and adhere to good governance frameworks. Against this premise, this paper makes a case for data governance in the context of strategic information technology planning and lays out some strategies for this essential management function.

1 Data Governance Defined

According to the Institute of Data Governance (2012)'s definitions section, data governance refers to "a system of decision rights and accountabilities for information-related processes, executed according to agreed-upon models which describe who can take what actions with what information, and when, under what circumstances, using what methods." For Cohen (2006), data governance can be understood as the process through which an organization carries out data management, specifically concerning availability, security, usability, consistency, quality, and quantity. It closely relates to the concept of ICT governance, which Rascão (2021) defines as "the subset of corporate governance focused on information and communication technologies, their performance and risk management" (p. 2). In the context of this paper, these definitions are considered appropriate for data governance; they, therefore, mean one and the same thing.

Taking these definitions into context and the way they touch on broader corporate governance or organizational management, there is no doubt that data governance is essential to maximize the value of data within the organization. This is particularly so

because management and governance are functions that complement each other.

2 Data Governance vis a vis Data Management

In many ways, data governance covers information as well as data management. As is evident from the different definitions encountered in literature as to what data governance means, different people may have different views and understanding of the concept, but the specifics of what is involved do not differ much. Importantly, there is general agreement that it is a crucial management function, more so as it concerns handling data within the organization (Thompson et al., 2015). To demonstrate the broad areas that data governance covers, Gregory (2011) explains that some people may elect to relate it to issues such as quality and security, whereas others may find it more closely related to legal compliance and privacy, to mention but a few. Indeed, data governance covers almost every area of the organization; it can also be considered the organization's backbone. Considering that organizations must be able to solve problems while also fulfilling data governance demands, there is a need to have in place robust data management approaches that must be implemented alongside effective decision-making mechanisms. The previous section (on defining data governance) is a case in point that academic literature features various concepts that can be interpreted the same way as data governance.

Presently, other terms that may be considered to mean data governance include information management and data management. Given how these terms have been used interchangeably in literature and their ideas, it can rightly be inferred that data management is an integral component of organizational management policies, particularly those dealing with information and data. Thus, since the literature features the description of data governance as also dealing with data management, the terms can be used interchangeably as may be preferred by specific organizations and respective industries. This assertion finds support in the literature, for instance, Mahanti (2014), who presents that data governance involves, and as such is part and parcel of, data management.

Other works in literature have used information and data to mean the same thing. Effective data governance ensures real-time data, thereby significantly enhancing knowledge sharing by, for instance, reducing the amount of time in the same respect (Hovenga & Grain, 2013). The case for data governance has been magnified in various disciplines, for example, in healthcare, where the sharing of real-time data is crucial for many other processes that directly relate to the efficiency of the healthcare system and, by extension, healthcare outcomes. The concept of big data applies in healthcare as in many other sectors in this digital age where numerous data sets are available. These data sets must be integrated appropriately to yield usable information of high quality. More broadly, data governance goes a long way in specifying given data elements and how they relate to other types

of information within the information; the manner these elements are presented is also significant.

3 Significance of Data Governance in Digital Age

Organizations accept that they must deal with voluminous amounts of data (or information) in the digital age, whose production and advances in technology have facilitated availability. There is consensus that data governance is a serious information technology issue that organizations must invest in if they are to be successful. So long as an organization possesses an information technology infrastructure, handles data, and processes information, it must have data governance if it is to be successful. The need for data governance can be traced back to the onset of computing and its subsequent application to organizational management. According to Demarquet (2016), data governance entails many factors such as information technology, human resource, and operational processes, whose interaction is crucial to organizational success. Effective data governance implies these factors, in unity, interact appropriately to enable fruitful, consistent handling of information sets throughout the organization.

As the highly digitalized organizational climate today is crowded with big data sets, the quality of data will likely be compromised. Addressing such issues as data quality makes it necessary for organizations to adopt and implement holistic approaches that focus on information technology, people (human resources), and processes. Indeed, data governance gains elevation as it helps a great deal in the much-needed constant quantification and measuring of data. In other words, governing data (and effectively so) helps in efforts geared towards addressing issues relating to data quality. Data cannot govern itself; it must be managed. People use various tools to give direction as to where specific data should go.

In the current digital age, organizations have not only to deal with and process more data, but they also need to comprehend this data's value in driving innovation even as they seek to modernize their services and operations. In this vein, organizations need to have proper technology that would help adequately filter, store, and protect data. That way, they will be able to distinguish between those data groups requiring more protection and those whose proper running is necessary for running and acting on client reports. Notably, it is quite unfortunate that most organizations are yet to do away with manual ways of governing data; such have not kept up to speed with the modern way of doing things. Such organizations lack procedures for ensuring reports are generated from relevant information and, worse still, they do not have sufficient knowledge about the data they possess. Additionally, the digital age comes with the challenge of organizations having to store more voluminous data, some of which may be unnecessary. This poses a serious risk to clients'

confidential personal data and organizations' intellectual property, as unauthorized parties can easily access such data.

Besides the data governance challenges, organizations are also facing pressure from governments and regulatory bodies to have greater control over the information in their possession. Annual revenue would easily be cut down by way of penalties imposed because of data breaches. Addressing such challenges and therefore improving data management has prompted organizations to turn to digital and cloud technologies that offer key management and encryption capabilities that are indeed needed in a business environment that is highly regulated. As more and more data floods the operational environment with advances in technology, regulatory compliance is observed to be playing a growing role in the governance of data. Literature contends that with the ever-increasing reliance on information/data in the digital age, regulators are paying more attention to the validity, protection, and accuracy of data, while organizations are increasingly getting concerned with how they can use data in their possession to improve performance. For such reasons, data governance is being given more attention in corporate circles. According to Thompson et al. (2015), it is to comply with regulatory requirements than to fail to comply. Gregory (2011) notes that organizations have no choice but to pay attention to and invest in data governance with increasing regulation pressure.

Adding his voice to the current conversation, Hovenga (2013) notes that the digital age has led to stricter regulatory requirements. Much data has also elevated the need for risk management. Therefore, risk management emerges as an aspect of regulatory compliance and as a potential source of organizational competitive advantage (Kerle, 2015). As the business environment becomes more and more digitalized, the significance of data governance is magnified for various reasons, including those related to the need to meet regulatory requirements.

Away from issues of regulation, data governance is indeed important for various reasons depending on the sector in which an organization belongs. For instance, in healthcare, data governance is critical in monitoring and securing crucial health information (Reeves & Bowen, 2013). With the increasing adoption of electronic health records and related informatics, professionals in the healthcare sector must adopt necessary IT measures to be able to address current and emerging risks. All organizations are affected by data governance at various levels and to different degrees.

In this digital date, data governance gains more elevation when examined in the context of data quality. Indeed, data quality is an important aspect of data governance (Nahar et al., 2013). According to Nahar and colleagues (2013), a lack of data governance can lead to data inaccuracy and other related errors, which can be costly. This view is congruent with that of Bair (2004), who also highlights data quality as being defined by the

domain and type of data as well as its uniqueness, completeness, correctness, referential integrity, and the extent to which it is consistent across various databases. The timeliness, freshness, and conformance to business rules are also other aspects of importance in this regard. In today's digital age, where much information is available (and, as such, possessed by organizations), these dimensions of data cannot be ignored, further magnifying the need for data governance.

Presently, the case for data governance prompts examination of the notion of data quality, which is essential for organizations even as they seek to leverage various information technology initiatives, for instance, data mining. Data quality is essential as it helps in various business initiatives such as enterprise resource planning and customer relationship management, without which such would be very costly or even ineffective (Olson, 2003). True as it were, the success of various IT initiatives is dependent on data quality, particularly in today's highly digitalized environment where organizations must handle much data. Data quality dictates the nature of generated reports as well as the business decisions that are subsequently made. Data quality must be given attention, but a significant challenge arises from the fact that the collection, maintenance, and handling of data is done by various entities/departments within the organization. Arguably, such and other challenges relating to data quality can effectively be addressed by having in place a master data governance program, which would offer a mandate to organizational data handlers to consider and manage data as one of the most important enterprise assets, hence paying attention to its quality.

4 Data Governance Strategies

Several factors deserve attention as far as the crafting and implementation of data governance are concerned. While specific data governance tasks may vary from one organization to the other, strategies employed in the same respect can be classified into three: relational, operational, and structural practices. As Tallon (2013) explains, structural practices involve those classifying information technology stakeholders as well as their roles vis a vis data, thus creating boundaries in terms of data ownership and other aspects. For organizational practices, examples are those related to the way organizations conduct their data governance, for instance, in terms of access rights, among others. Regarding relational practices, they involve the definition and formalization of the relation of various roles among management and other handlers or stakeholders of data. Key to data governance success are efforts to engage in these practices clearly.

A notable data governance strategy is the provision of structured organizational oversight that is in line with the realization of organizational objectives. According to Kiron (2017), organizations must identify specific individuals or entities within their human resources who oversee data governance. This point reinforces the notion of structure within the organization as that,

in the view of Ransbotham (2017), is critical for the working of any organization. Holmes (2016) supports this point and adds that establishing procedures and policies within the organization is critical for the organization's work. Taking these assertions into context, an inference can be made that having in place mechanisms that establish and clearly layout hierarchical structures even on matters of data governance, specifying roles and responsibilities is a good strategy that would help in endeavors on management issues including data governance as it were. A vast body of academic literature supports the establishment of oversight and structure on policy initiatives, including those touching on data governance. This view is congruent with the views of proponents of the institutional theory, which takes center stage when examining issues relating to authority and oversight within organizations (Chakrabarty & Bass, 2014).

In implementing policies on data governance, another strategy that gains elevation is the use of strategic and effective communication. True as it were, this would begin with a clear definition of responsibilities and roles, including specifying a lead change agent in charge of information and data control and management practices. Such an agent would ensure there is written communication capturing data governance guidelines and policies as well as any current or anticipated changes in the same respect. As such, effective communication would include properly disseminating information as well as any changes to every organizational level. Additionally, strategic, effective communication would prompt stakeholder and staff training or education so that everyone comprehends the information being communicated about what is to be implemented and from which quarters that communication is coming. Employment of effective strategic communication is supported in the literature, where it is tied to the realization of legitimacy among various stakeholders (Bitektine & Haack, 2015). Arguably, communication affects many processes that are in one way or another tied to overall organizational performance, hence its elevation in the current conversation.

Another strategy that gains elevation as far as data governance is concerned is ensuring compliance with overarching rules as well as regulations as may be specified by funding agencies, governing bodies, or government agencies. Often, such regulations take center stage and affect organization-wide initiatives, including the implementation of information management and data governance practices. This is particularly the case considering that, for instance, changes in regulations must also be considered in policy and guidelines practice through adjustments that reflect conforming with respective regulations. An implication of this in practice is that data governance stakeholders, for instance, data handlers and departmental managers, must continually assess and reassess efforts and ways of meeting regulatory requirements as may be specified by different external bodies such as government agencies.

Last yet important is the strategy of obtaining the buy-in of various stakeholders when implementing data governance and broader information technology strategies. This would entail efforts like seeking involvement and obtaining agreement or approval at every level. This strategy could also include considering using pilot groups and assessing the results of new initiatives before the same can be implemented throughout the organization.

CONCLUSION AND SUMMARY

In conclusion, through a highly digitalized and globalized business environment, the current technological age has brought new challenges to organizations, more so in terms of the voluminous information, they must handle and process. As such, organizations are tasked with harnessing this information through effective data governance measures, most of which can be conceptualized in terms of various data management procedures, policies, and practices that are crucial to innovation in information technology, for instance, in aspects like data analytics as well as the mining and sharing of data. In view of the support for data governance as encountered in literature, emphasis is made on the present case where data governance should be seriously considered in the context of organizational information technology strategy. Indeed, there is an array of benefits that are realized through effective data governance, and in summary, they play a central role in the realization of organizational competitive advantage. Therefore, this digital age requires organizations to adopt effective data governance if they are to be successful. Some strategies for ensuring success in this breath include the provision of structured organizational insight, ensuring effective strategic communication, ensuring regulatory compliance, and obtaining the buy-in of various stakeholders, to mention but a few. By adopting such data governance strategies, organizations are certain to realize better capabilities in management matters like sound and informed decision-making.

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