

The Critical Success Factors for Data Governance Process

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Abstract

Data governance encompasses the principles, procedures, and strategies to ensure that organizations can discover and monitor data, correctly use data in appropriate business contexts, and maximize data security, quality, and value. Data governance provides greater visibility, transparency, and quality while reducing risk across all data assets. It also provides easily accessible, consistent, secure high-quality data across the entire enterprise to support meaningful insights into decision processes for decision-makers. In this direction, it can be stated that it is important today to successfully implement the data governance program. The purpose of this study is to reveal the critical success factors in the data governance program. For this purpose, critical success factors of the data governance program were determined with a systematic literature review and the researcher's field experience. As a result of the systematic literature review and the field experience of the researcher, it has been seen that there are four critical factors. These four critical factors are roles and responsibilities, partnership, sponsorship, and technology respectively.

Keywords: Data Governance, Data Governance Programs, Critical Success Factors.

Introduction

Institutions have a variety of data sources such as customers, patients, employees, suppliers, and production nowadays. To use this data correctly in order to manage the marketplace more effectively, it is necessary to take advantage of the data governance framework. Data governance ensures that these data are kept in a reliable and well-documented manner while ensuring that it is easily accessible, compliant, and confidential within the organization. Data governance practices are used in various subjects such as getting to know the customer, anticipating their complaints and demands, and taking measures on various issues.

Data governance is the name given to the safe, efficient, and cost-effective storage and application of data so that an organization can achieve its success goals. The purpose of data governance is to help people, institutions and connected tools optimize the use of data within policy and regulatory boundaries. Thus, they can take decisions that will provide the highest

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benefit to the organization and implement them. The purpose of data governance is to ensure that data is managed properly, and according to policies and best practices (Ladley, 2012).

Data governance has various definitions.

- Cohen (2006) defines data governance as *“the process by which a company manages the quantity, consistency, usability, security and availability of data”*.
- Newman and Logan (2006) define data governance as *“the collection of decision rights, processes, standards, policies and technologies required to manage, maintain and exploit information as an enterprise resource”*.
- Thomas (2006) states that data governance *“refers to the organizational bodies, rules, decision rights, and accountabilities of people and information systems as they perform information-related processes”*. She goes on to state *“data governance sets the rules of engagement that management will follow as the organization uses data”*.

Organizations currently invest in a data governance program a lot in order to obtain data and generate value from it. However, they encounter problems such as "missing, wrong, inconsistent, dirty data" because they do not properly manage and monitor these investments, namely data systems. These and similar problems have negative effects on the organization to gain a competitive advantage. At this point, data governance helps organizations gain a competitive advantage by avoiding these problems (Niemi & Laine, 2013).

The purpose of this study is to reveal the critical success factors in the data governance program. The research question of this study can be expressed as "What are the critical success factors in implementing a data governance program?"

The second part of the study is the method. The third part is the findings that each critical success factor is explained. The last section consists of conclusions and recommendations which are stated for businesses regarding critical success factors of a data governance program.

Methodology

The systematic literature review steps in software engineering proposed by Brereton and other authors in 2007 are in line with the literature review for evaluating critical success factors in implementing a data governance program. For this reason, it will be used as the method of this study. A systematic literature review has three basic steps: research planning, conducting the research, and reporting the data (Brereton et al., 2007).

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The systematic review has a quite important initial step which is specifying the research question (Brereton et al., 2007). In this study, the following question is used as a research question:

- What are the critical success factors in the implementation of a data governance program?

In order to examine the studies published in Turkish and English, "Database (Remote) Access and Statistics System" was used and the databases Scopus, Science Direct, Springer Link, OpenAIRE, Web of Science, and Complementary Index were searched. Keywords such as data "governance critical success factors, data governance implementations, data governance success criteria, data governance challenges" have been used. The keywords of the research were searched in the databases mentioned above. As a result of the search, 15 studies that decided to be relevant to the research question of the study were reached. In addition, the database of the National Thesis Center of the Council of Higher Education was scanned, and it was seen that there was no thesis study on this subject.

FINDINGS

As a result of the systematic literature review and the field experience of the researcher, it has been seen that there are four critical factors. These four critical factors are roles and responsibilities, partnership, sponsorship, and technology respectively.

Roles & Responsibilities

Individuals ensure that operations are carried out on behalf of the company with the activities they do and the decisions they make. In this respect, they are responsible for their actions. Responsibility reveals the importance of the concept of "accountability" on behalf of the institution, and this concept requires that "roles and responsibilities" within the institution be clear and clear in detail that everyone can understand. Roles and responsibilities in terms of data governance should be clear and understandable to all stakeholders. Thus, accountability under this task can be ensured (Panian, 2010). Since data governance activities include a series of decision and design processes before technical operations, it would be healthy to address and determine roles and responsibilities at the very beginning of the studies in order to increase the accountability of the people who will carry out these activities and to make the activities more efficient (Alhassan, et al., 2019).

Considering that data governance affects the way of doing business, responsibilities, and activities of people within the organization, apart from technical activities, it is clear that the human factor is important. From the lowest level to the highest level, it is very important that the procedures, roles and responsibilities related to data are determined and that every

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segment is informed. Determining who will deal with a data quality issue in the day-to-day operation or strategically authorizing a system acquisition is critical for data governance activities at both an operational and strategic level. (Alhassan, et al., 2019). For every operation and change management-related task, the human factor itself should always be at the center and the most critical factor to make things successful. At this point, roles and responsibilities come at the center of every person in the organization, especially in data governance organizations. Data stewardship and ownership become change boosters in this implementation. They are at the center of this organization and have many responsibilities such as data quality, data dictionary, change management, and so forth.

Partnership

Partnership among different teams is required because data governance is a broad perspective that touches every kind of team in the organization. The business units make decisions using data in the systems. In this context, they have the responsibility of data and that leads the management of the data governance program to the business units, rather than IT units. (Thomas, 2005). The IT units are responsible for the governance of IT infrastructure to support business objectives in the organization (Luftman, 2004). Therefore, in the context of "governance", responsibility of the system goes to IT side and the responsibility for data goes to business units which means they need to be a partnership among those sides to reach goals of the organization (Dember, 2006).

Although data governance programs generally progress within the framework of roles and policies, the data stewardship mechanism, the joint work of teams from different types and backgrounds and their joint progress in line with the determined targets are very important for the success of data governance activities. (Wong, Maarop & Samy, 2022). Without data stewardship, data governance is just a framework. In that manner, data stewardship should be defined, and different team members come from different backgrounds involved in this organization. For this reason, the partnership is crucial to achieving the desired points in data governance implementation (Wong, Maarop & Samy, 2022).

Sponsorship

Companies and government organizations in theory want to achieve their data governance goals. However, they find it difficult to justify the effort as it has no practical and tangible impact on the business. Putting data governance into real practice is a challenging process. This process highlights the importance of data to the business and motivates both business and IT to invest in the improvement of their data. The most important advantages of the data

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governance program are to increase revenue, reduce costs and ensure compliance (Panian, 2010).

The business value of data governance must be understood by senior-level management as quite an important criterion for data governance according to many studies because they are the sponsorship for these kinds of studies.

Data governance programs should be initiated and supported by business unit senior management, as this is an area that is generally the responsibility of business units. Top management should treat data as a strategic asset of the organization and sponsor data governance programs to manage it. This sponsorship should cover the entire organization and cross-functional steward/management committees should be established within the data governance program, including other teams like IT and project management units (Panian, 2010).

Both the planning and efficient use of existing resources, and the realization of technology investment where should be, show how critical management sponsorship is for data governance studies.

Technology

Technology plays a crucial role in the implementation of a data governance program. The many subparts such as data quality, data integration, and data dictionary require technological perspectives in the nature of work. Each part of the data governance touches both technology and human. The implementation of data governance programs within institutions generally aims to improve decision mechanisms, increase the efficiency of data-related operations, adapt to data compliance activities, and increase data literacy. To reach the aims of data governance, the technology should be used widely because generally, the goals are related to data itself and naturally, technology and its usage. Alhassan, Sammon and Daly (2019) mentioned that organizations save appropriate IT infrastructure for data governance implementation.

In the practical phase of data governance, tools and technologies play crucial roles (CDI Institute, 2006; Larkin, 2008; Reeves & Bowen, 2013; Tallon, Short, & Harkins, 2013; Watson, Fuller, & Ariyachandra, 2004) and, especially in the context of metadata management, data discovery, data lifecycle, data pipeline, data management, reporting (Khatri & Brown, 2010; Panian, 2010; Tallon et al., 2013). In terms of the success and efficiency of the data governance program, the use of technology is very important for all processes from the acquisition of data to its consumption. This situation shows the

importance of cooperation in providing and using the right technologies by working in a highly integrated way between the business unit and IT unit (Alhassan, et al.,2019).

CONCLUSION and SUGGESTIONS

In this study, in order to examine the critical success factors in the implementation of the data governance program, national and international published academic studies were reviewed with a systematic literature review and the results were reported. For this purpose, it has been tried to guide the relevant stakeholders and those who will work in this field in order to contribute to the success of the implementation by preventing the failure of the data governance program.

As a result of the systematic literature review, it has been seen that the human factor, especially the top management support, teamwork and role/responsibility areas seemed important points. Among these points, it has been observed top management support is the most important element.

In his work, Panian (2010) discussed different approaches to data governance and approached the subject from a different perspective by emphasizing the business motivations behind data governance. Revenue, cost and compliance stand out as the most important criteria to facilitate data governance programs in organizations (Panian, 2010). In terms of organizational/human perspectives, to achieve the goals of data governance, ownership and standards of the data must be assigned and policies must be applied (Panian, 2010). Roles and responsibilities should be clearly defined, and people's roles, authorities and responsibilities should be standardized in both operational and strategic processes. (Alhassan, et al. 2019). The context of the statements mentioned above shows that the roles, responsibilities, and managerial supports are key points.

Data quality issues have a financial impact of close to 1 trillion and institutions with central data quality lifecycle and infrastructure are only 33% of total institutions. (Wong, Maarop & Samy, 2022). From this perspective, the importance of technology in data governance implementation becomes critical for both implementation and business initiatives. Such problems affect the decisions taken at the end of the day, namely the business units, and the ones that will reduce this impact are the IT units that will use the relevant technologies. For this reason, it is essential that these 2 main units work in an integrated manner and that they use common reasoning in determining and procuring the appropriate technology (Alhassan, et al., 2019).

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The role of senior management in establishing, designing, and promoting the data governance program is significant. The senior management of the institutions should invest in data governance activities and encourage their teams in this area by evaluating their business needs, pain points and competitive advantage. In a world where the value of data is increasing day by day, it is vital for the future of institutions to deal with this field on a large scale and to take collective action within the institution.

In this framework, the creation of a data governance organization in line with the culture and genes of the institution by considering the human factor in an important way in line with the priorities and targets determined by the senior management is among the most important first activities. Subsequently, all kinds of support from the top management are essential for defining the roles and responsibilities in a clear and understandable manner, and for the implementation of data governance activities by the teams.

In parallel, appropriate technology investments should be made in order to establish a solid foundation for the work within the institution and the team and to reach the determined targets, and the training, content, time and vision that will be needed should be provided to the teams by the organization by following the current technology and approaches in line with the needs of the teams.

In future studies, researchers can examine the critical success factors in the implementation and dissemination of the program within the scope of quantitative research by conducting surveys and/or interviews within institutions that have implemented data governance programs before or today. In addition to the success factors given in this study, they can investigate the details of other success factors that remain in the background but make invisible contributions to the success of the program.

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