



Strathmore University

*Centre for Intellectual Property and
Information Technology Law*

»» DATA GOVERNANCE »»

“Note: The information herein is largely derived from the Data Governance Principles Research & Development Project. Please refer to the report for further information data governance in Africa.”

Introduction

Digitalisation has resulted in increased data collection which forms an integral role in various industries and day-to-day activities thus the need to ensure that the data is managed in a manner that not only protects the integrity and security of that data but the rights and interests of the organisations processing the data and the people whose data may form part of the data sets being processed. Consequently, processes and standards have been developed to ensure the management or governance of that data. As a result of digitisation and the large volumes of data being processed in the digital era and the interdisciplinary nature in which processes and standards need to be applied, there has been an increase in these data governance processes. The interdisciplinary nature of data governance and the three interrelated concepts—Data (Information) Management, Enterprise Information Management and Data (Information) Architecture—resulted in different terms being used to refer to data governance. In this Report we use the term ‘data governance’.

The objective of this research is to provide a baseline understanding of what data governance is, the principles and frameworks applied in the governance of data and examine how these principles and frameworks translate in the African context. We found that data governance encompasses legal and human rights requirements, technological, security and economical considerations. These aspects inform, not only how data is managed within an organisation but determines the principles that are considered is that governance and the frameworks that are developed. In light of this data governance can essentially be defined as the use of authority combined with policy to ensure the proper management of data assets.

Herein we record the most commonly applied and considered data governance principles.

Data Governance Principles

Principles are a set of statements that describe the basic doctrines of data governance. According to Bharosa and Janssen¹ principles are “normative, reusable and directive, formulated towards taking action by the information system architects”. A robust principle should enable good quality decisions to be made and enforceable policies and standards to be created.²

Researchers have proposed initial frameworks for data governance³ and have analyzed influencing factors⁴ as well as the morphology of data governance⁵. A number of data governance principles have emerged. These principles can be grouped into four categories — organisation, alignment, compliance and common understanding. Data governance principles should thus reflect and preserve the value to society from the sharing and analysis of anonymised datasets as a collective resource.⁶

¹At page 472

²Khatri, V., Brown, C.V.: Designing Data Governance. Commun. ACM 53(1), 148–152 (2010)

³Khatri, V., Brown, C.V.: Designing Data Governance. Commun. ACM 53(1), 148–152 (2010). See also Otto, B.: Organizing data governance: findings from the telecommunications industry and consequences for large service providers. Commun. Assoc. Inf. Syst. 29(1), 45–66 (2011)

⁴Weber, K., et al.: One size does not fit all—a contingency approach to data governance. J. Data Inf. Qual. 1(1), 1:1–1:27 (2009)

⁵Otto, B.: A morphology of the organisation of data governance. In: ECIS, p. 1 (2011)

⁶Al-Khouri, A.M.: Data ownership: who owns “my data”. Int. J. Manag. Inf. Technol. 2, 1–8 (2012)



DATA GOVERNANCE

Organisation

- Decision Rights
- Balanced roles
- Separation of Duties and Concern
- Stewardship
- Ownership
- Improved Coordination of Decision Making

Alignment

- Meeting Business Needs
- Aligning Business and IT
- Developing Data Strategy
- Defining Data Quality Requirements
- Reducing Errors of Use
- Effective Policies and Procedures

Compliance

- Accountability
- Policy Enforcement
- Openness
- Privacy
- Due Diligence
- Security
- Data Quality

Common Understanding

- Shared Data Commons
- Use of Standards
- Metadata Management
- Standardised Data Models
- Standardised Operations
- Facilitates Communication

Image illustrating the breakdown of the four Extracted from Brous P., et al⁷

⁷Brous P., Janssen M., Vilminko-Heikkinen R. (2016) Coordinating Decision-Making in Data Management Activities: A Systematic Review of Data Governance Principles. In: Scholl H. et al. (eds) Electronic Government. EGOV 2016. Lecture Notes in Computer Science, vol 9820. Springer, Cham. https://doi.org/10.1007/978-3-319-44421-5_9

The four categories of data governance principles are as follows:

Organisation

Organisational goals are the first consideration when developing data governance frameworks. It is also important to take into consideration the organisational dimensions and specify the framework for decision rights and accountabilities to encourage desirable behaviours for the use of data.

These organisational goals also help to measure an organisation's performance. Organisations need to consider their functional goals and organisational form. That is, consider the tasks needed to be fulfilled.⁸ Organisational form, looks at the structure in which responsibilities are specified and assigned and the organisational processes. In terms of this, the data governance model consists of roles, decision areas, main activities and responsibilities.⁹ There is a need to establish clear communications and patterns that would aid in handling policies for quick resolution of issues.¹⁰

Alignment

Data governance should ensure that data meets the needs of the business.¹¹ A data governance program must be able to demonstrate business value.¹² Business uses for data establish the extent to which specific policies are appropriate for data management. Data governance should ensure data is useful¹³ and that the information should be helpful to its intended users, or support the usefulness of other disseminated information. While governments want to achieve the goals of data governance, they often have difficulty

⁸Weber, K., et al.: One size does not fit all—a contingency approach to data governance. *J. Data Inf. Qual.* 1(1), 1:1–1:27 (2009)

⁹Wende, K., Otto, B.: A contingency approach to data governance. In: *International Conference on Information Quality*, Cambridge, USA, 11 October 2007

¹⁰Malik, P.: Governing big data: principles and practices. *IBM J. Res. Dev.* 57(3–4), 1–13 (2013)

¹¹Panian, Z.: Some practical experiences in data governance. *World Acad. Sci. Eng. Technol.* 38, 150–157 (2010)

¹²Smallwood, R.F.: Information governance, IT governance, data governance: what's the difference? In: *Information Governance: Concepts, Strategies, and Best Practices*. Wiley (2014)

¹³Dawes, S.S.: Stewardship and usefulness: policy principles for information-based transparency. *Gov. Inf. Q.* 27(4), 377–383 (2010)

justifying the effort unless it has a practical concrete impact on business.¹⁴ Data governance also provides the framework for addressing issues such as improving data quality. Data quality is necessary to ensure that data management activities are in line with the overall business strategy. The strategy should include the strategic objectives which are pursued by data quality management and how it is aligned with the company's strategic business goals and overall function scope.

Compliance Monitoring and Enforcement

Data governance includes clearly defining the authority to create and enforce data policies.¹⁵ It is thus imperative that an organisation establishes and enforces policies and processes around the management of data within the organisation. Organisational personnel such as the information technology and business teams therefore need to develop and determine a framework of policies which are applicable across the whole organisation.¹⁶ The considerations for the framework of policies include, safeguards for the data sets, legal responsibility and accountability,¹⁷ as well as mechanisms to ensure that the organisation meets its legally defined obligations.¹⁸

Common Understanding

Governing data appropriately is only possible if it is properly if the purpose and uses of the data is understood. It is therefore important to develop an enterprise data model,¹⁹ that way an organisation is able to understand its data uses and purposes over time, even when these uses and purposes change.²⁰ Thus a common understanding of the purposes and uses of data need to be established across the organization.

¹⁴Panian, Z.: Some practical experiences in data governance. *World Acad. Sci. Eng. Technol.* 38, 150–157 (2010)

¹⁵Wilbanks, D., Lehman, K.: *DatagovernanceforSoS*. *Int. J. Syst. Syst. Eng.* 3(3–4), 337–346 (2012)

¹⁶Malik, P.: Governing big data: principles and practices. *IBM J. Res. Dev.* 57(3–4), 1–13 (2013)

¹⁷Tallon, P.P.: Corporate governance of big data: perspectives on value, risk, and cost. *Computer* 46(6), 32–38 (2013)

¹⁸Al-Khoury, A.M.: Data ownership: who owns “my data”. *Int. J. Manag. Inf. Technol.* 2, 1–8 (2012)

¹⁹Smith, A.: Data governance and enterprise data modeling – don't do one without the other! *Enterprise Information Management Institute*. <http://www.eiminstitute.org/library/eimi-archives/volume-1-issue-2-april-2007-edition/data-governance-and-enterprise-data-modeling-dont-do-one-without-the-other>

²⁰Khatri, V., Brown, C.V.: *Designing Data Governance*. *Commun. ACM* 53(1), 148–152 (2010)

Conclusion

Data governance comprises legal and human rights requirements, technological, security and economical considerations. It is these aspects that inform how data is managed within an organisation, and determine the principles that are considered in the development of frameworks. The data governance principles can be grouped into four categories —

organisation, alignment, compliance and common understanding. Notwithstanding, data governance is not a one size fits all, according to these four categories are used to inform the principles that an organisation will apply depending on its individualistic needs.





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