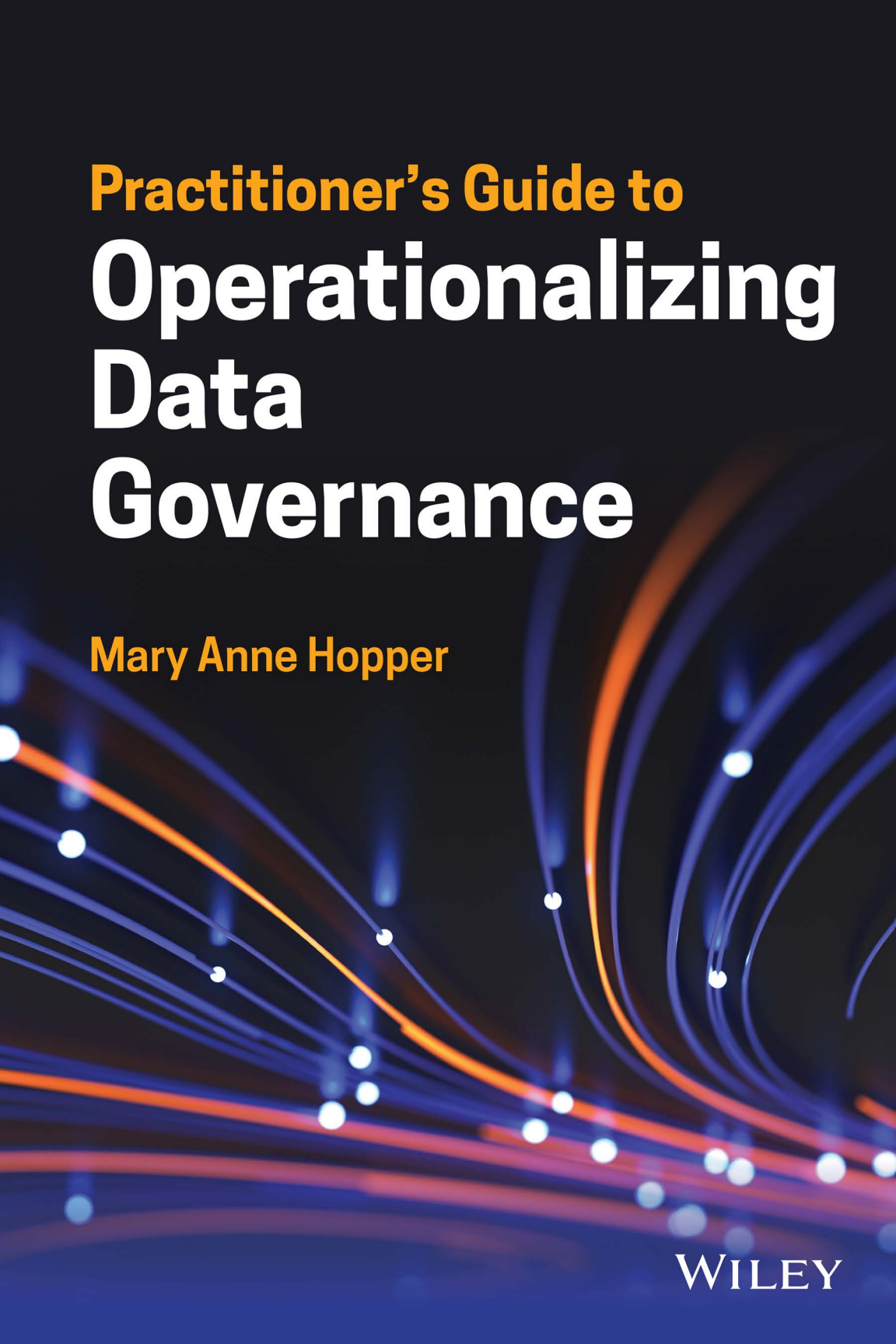
Practitioner's Guide to Operationalizing Data Governance

Mary Anne Hopper



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and

For Bill for never letting me throw the term "best practice" out there without explaining "the why".

Contents

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CHAPTER 1

Introduction

INTENDED AUDIENCE

As long as the practice of Data Governance has been around, the concept continues to lack sustainable adoption in many organizations. My main objective with this book is to share my experience and help you and your organization on your journey, no matter where in that journey you are.

My best guess is that you are looking at this book as a guide for one of the following reasons:

- Your organization is thinking about Data Governance.
- You have been tasked with Data Governance.
- You need to get your Data Governance program back on track.
- You have acquired a tool and want to get the most value from your investment.
- You continue to have the same data quality issues over and over.
- You attended a conference and learned about Data Governance and think it is something you need.

The content in this book is meant for a large audience because Data Governance impacts the entire organization. Whether a senior leader or an individual contributor, you may be asked to participate at some level in Data Governance, actively or passively.

This book guides you through practical steps in applying Data Governance concepts to solve business problems by adopting a disciplined approach to Data Management methods. The chapters cover prioritization, alignment of Data Governance and Data Management, organizational structures, defining roles and responsibilities, communications, measurements, operations, implementation, and policies. All of the examples presented are not conceptual; they are real-world customer examples that can be applied to your specific organization.

EXPERIENCE

You most likely have an interest in not just Data Governance, but in data itself. Do you remember your "Aha" moment that turned you into a data junkie? I remember mine clearly. In the early 1990s, I

worked for a small naval architectural firm. The focus of the firm was primarily custom high-end racing sailboat designs, including the America's Cup. One day my boss brought in a floppy disk and asked me to take a look at what was on it. Apparently, we had a client who thought his brand-new boat was slow. The disk contained the data dump from the boat's instruments. There were fields like time of day, heading, wind velocity, and boat speed. I was able to parse the data and essentially recreate the races with the available data points. What I learned was that the boat tacked nine or ten times on the first leg of each race. I know not all of you are expert sailboat racers but take my word for it; tacking that many times on any leg of a race in a big boat is slow. What did that mean for my boss? He was able to have a different conversation with our client. We were no longer defending boat design or building materials but instead talking about racing tactics and offering suggestions for improvements there first.

That day changed my view of the power of data and from that point forward I chose classes and career roles that were focused on data. Initially, I focused on database development and support and then transitioned into data warehouse development. On the IT side, I managed the development of platforms to support finance and treasury processes as well as the re-platforming of a home-grown loan servicing system. That experience enlightened me to the need for data quality processes and the understanding of data lineage and documented business rules. There came a time when I transitioned into project management, product ownership, and finally consulting. The consulting role is what has helped me most in hearing customer challenges and helping them solve those problems by instilling discipline in Data Management processes.

Over the years, I have worked with hundreds of clients across all industry verticals to help them establish that discipline in Data Management practices. In other words, helping them to establish Data Governance programs that align with their individual organization's business objectives while also considering their maturity, culture, and appetite for Data Governance.

This book is not only a reflection of a tested and proven methodology but also my experiences in what works and what doesn't work, things to not get hung up on, and where best to focus efforts. Some of

the chapters are shorter than others but I still believe the topics are important enough to cover. My hope is that this book helps you and your organization in your own Data Governance journey.

COMMON CHALLENGE THEMES

Most of what I've heard over the years can be broken down into a set of common themes. One of the best ways to talk about those themes is to share with you what I've heard my clients say. Every quote is directly from a customer. If any of these quotes resonate with you, then formalizing Data Governance can help. You will see these themes again in future chapters.

Metadata

Metadata is the practice of gathering, storing, and provisioning information about data assets. As important as it is to collect and maintain, it is a practice that does not formally exist in most organizations. Most of my customers might not necessarily use the term metadata, but the concept is top of mind for them. There is a desire to have common terms defined and have a single repository to maintain information about those terms. Because there is no formal metadata process or repository, users spend a lot of their time trying to understand data on their own or relying on others to interpret meaning for them. Another byproduct from the lack of metadata process is that users complain of not knowing what data is available to them. Always keep in mind that metadata is a precursor to data quality; I will write more about that topic in later chapters.

Here is what clients have said:

- "we need Rosetta Stone for our data"
- "metadata is so important and it doesn't exist"
- "the most time-consuming part is to find what you're looking for"
- "would be nice to follow the trail"
- "can't get to confident decisions without common definitions"

- "a little bit of detective work and a little bit of knowledge"
- "this is what I mean when I say 'this'"
- "we haven't the foggiest idea of what the denominator is"
- "you get the data and it's not what you meant"
- "some people just want to call it something different"

Access to Data

Oftentimes, there are very few people with the "know-how" and the tools to access data. Users who do have direct access feel they must navigate a labyrinth to get to the data they need. That labyrinth includes multiple reports, accessing tables, or calling people who have knowledge of data structures. Because of this, users find it easier to maintain their own datasets instead of accessing a common repository. In most organizations, users are anxious to have access to tools to make it easier to use data.

Here is what clients have said:

- "we got to know what the hell we got"
- "our issue isn't so much storage, it's access"
- "quit parking data on some machine"
- "a whole lot of horsepower to pull data out of that system"
- "you have to have your DNA tested before you get access to it"
- "not knowing something exists is a greater liability than not using what is available"
- "a lot of what we're doing seems so hard"
- "information does not seem readily available"
- "manual data exercise to put it together"
- "we have so much information out there in so many places"
- "Excel becomes the big workhorse"
- "we've created a process to deal with lack of access to information"
- "want to hire an analyst, not a SQL person"
- "high-priced analyst just getting data for people"

Trust in Data

Users want the ability to make solid decisions on trusted data that is deemed a definitive source of truth. However, users feel there is a lack of consistency across data sources. Some of the reasons for this could be related to data latency, poor data collection practices, a lack of data understanding (e.g., data acceptance, service level agreements, data remediation, and data profiling), or different groups creating and maintaining their own copies of data. This results in users feeling they spend a significant amount of time validating or defending the data they do use.

Here is what clients have said:

- "depending on which query you run you get a different answer"
- "can't create individual sources of truth"
- "the place we pull the data from doesn't balance to itself"
- "we don't know how reliable the data is"
- "you trust the data until you know it's not right"
- "if you can't fix the problem you work around it"
- "how do we know what an error looks like?"

Data Integration

Data integration consists of processes for moving and combining data that reside in multiple locations and providing a unified view of the data. In many environments, users who need access to integrated data are essentially required to pull several reports or datasets and then integrate on their desktop using MS Access or Excel. There may also be a lack of formal processes or tool usage across divisions and even in IT. More often than not, this results in differing business rules that are applied to data, which turns into discrepancies in the data results.

Here is what clients have said:

- "I'm living in spreadsheet hell"
- "really no linking it all together"

- "right now, it's fragmented"
- "all our stuff doesn't talk to each other"
- "being able to stitch data together is what we need"
- "our systems have never been organized to allow us to answer questions"
- "almost every prototype that we did last fiscal year had to do with the difficulty of pulling data from multiple datasets"
- "we have a lot of questions, we have a lot of data, but we can't pull it out easily"

Data Ownership

Users do not know who to contact when there are data questions. There is a desire to have a named data owner for the various domains who can answer questions, address issues, and help users understand data usage guidelines for given datasets.

Here is what clients have said:

- "you're stepping on toes every time you go in there"
- "everybody wants to control their own fate"
- "that's our data so we should be able to keep up with it"
- "lack of accountability for data responsibility"
- "we don't really know who does that"

Reporting/Analytics

Users are becoming more data aware. Although some users only require operational reports, there is a growing curiosity and desire for more advanced analytic capabilities. This makes the reporting and analytic platform (e.g., data warehouse, data mart, date lake, etc.) being part of the overall strategic plan more important than ever. Most users feel it takes up a lot of their time to get reports and like the concept of a single point of entry for all of their reports as opposed to reports within the various applications that they are forced to self-integrate.

Here is what clients have said:

- "how much of that data is relevant to the next level of the department?"
- "I don't think people realize what we could do [if our data were integrated]"
- "very myopic view of the data"
- "[we need to be able to provide] reliable, repeatable answers to questions"
- "the most time-consuming part is to find what you're looking for"
- "would like to have a dashboard to share accurate information"
- "it's more art than science"
- "information is perceived as ad-hoc"
- "used to managing without information"
- "too much reliance on old data to make current decisions"

Data Architecture

While most organizations have an architecture practice in place, the teams often lack authority because they do not have a formally defined charter. There is no formal data strategy to help set the team's direction and enable it to define standards and guidelines for identifying, provisioning, storing, and integrating data. With newly formed teams especially, the focus is on new applications instead of the entire enterprise data landscape that has been growing for years with no formal practices in place.

Here is what clients have said:

- "there have been so many architecture hands over the years"
- "we are duplicating a lot of information"
- "[there is] no logic in how we approach managing data"
- "data should be accessible regardless of where its source is"
- "it's extremely laborious"
- "tendency to work like we're all artisans here"

- "by the time you figure out what everyone else is doing it becomes faster to do it yourself"
- "we're on the bleeding edge of end of life"
- "[it takes] a whole lot of horsepower to pull data"

Reliance on Individual Knowledge

I cannot remember the last time I was with a customer who did not feel overly reliant on go-to people to help them with understanding, getting at, or validating data or reports. Many of the things I talk about in this section are symptoms of an "I know a guy/gal" culture that becomes embedded in the organization because of a lack of a shared data dictionary, unknown data quality, difficulty in accessing data or reports, or an inconsistent data architecture.

Here is what clients have said:

- "a little bit of detective work and a little bit of knowledge"
- "if I need the data, so and so can whip me up a SQL query"
- "it's a fishing expedition to find people who can get you information"
- "not everybody knows everybody"
- "need to unlock the creativity of the bright people in our organization"
- "I should be able to run my reports"

Culture

Kicking off a Data Governance program or breathing new life into an existing program will more than likely require a culture shift. This can be one of the largest hurdles in overall sustainability of your program. This culture shift usually involves two things. The first is communicating across division or line of business silos. Communication involves everything from policies to policy compliance reporting to program performance. The second is in data sharing. I am often told that people want access to

data not created in their focus area, but others just do not want to grant access because they are data hoarders. More often than not, I find that people are reluctant to share because they are afraid of how the data may possibly be misused or misinterpreted.

Here is what clients have said:

- "[we are] great at planning but fall short on implementation"
- "divisions operate within their own zones"
- "we have a culture of independence and resistance"
- "[there will] always be people out there doing crazy s**t"
- "we're beyond 'it would be nice to have'"
- "lots of good people who do lots of good work"
- "we have departments where all they do is protect themselves against bad data"
- "we don't teach data awareness"
- "focus a lot of our measures on things that are easy"
- "what we do is reactive"

HOW DATA GOVERNANCE CAN HELP

Let's think about the themes again, and I will provide some examples of how Data Governance can help. There is definitely cross-over in some of these areas. For example, providing metadata to users will help with data access challenges in better understanding what data is available for use.

Metadata

Data Governance provides the process for collecting, updating, storing, and provisioning. A metadata policy will contain not just the process but what attribution should be collected about what data in the environment. This helps users because they have access to common business terms (rationalized across different sources) and some sort of consolidated

and updated data dictionary. I will explore metadata in more detail in Chapter 5, Common Starting Points, and Chapter 13, Policies.

Access to Data

The Data Governance organization may not own a policy for data access but can provide the communication mechanism for standards with regard to how users will access data resources. Modes of access may be through common tools or interfaces and be dependent on user roles and skill sets. With these policies in place, users will enjoy easier access to data with data access tools as well as a better understanding of what is in the data ecosystem for their use.

Trust in Data

This is a central component of any Data Governance program as data quality is top of mind for all users. A data quality policy will include processes and standards for data profiling, data acceptance, remediation, continuous monitoring, and reporting. A solid data quality process builds trust between data and users. Instead of defending definitions and applied business rules, analysts can actually spend their time interpreting the results of analyses to inform future decisions. Like metadata, data quality will be specifically addressed in the Common Starting Points and Policies chapters.

Data Integration

Policies and standards can be developed to ensure consistent practices when it comes to integrating data across multiple tables or schemas. These policies are typically developed and maintained by some type of Data Management team, but they are Data Governance policies, nonetheless. A Data Governance organization may require the policies, and once established, developers can be more consistent in

developing reusable components that can be more easily updated or maintained. Standards may also define what tools are used for data integration and business rule development.

Data Ownership

Like a lot of other words in the Data Governance space, Data Owner means different things to different people. One of the key outputs of a Data Governance program is defining roles and responsibilities. Whether or not a role is called Data Owner, there will be a role that users understand to be their go-to person. This reduces angst with users and saves them time when they have questions about a particular dataset, report result, or even just a general question. This role can also help establish data usage guidelines so other users understand what they can and cannot do with certain pieces of data.

Reporting/Analytics

Data Governance policies can document changes to business rules or external data impacts, which might be necessary to provide relevant context to data users. An example might be the need to know when legislative policy changes take place. In addition, standards might define what tools which users will utilize to build or access reports or datasets. These standards provide consistency and ensure reliability of analyses and reports. It should go without saying that metadata and data quality are necessary components to support robust reporting and analytic platforms.

Data Architecture

Data architecture is foundational to understanding what data is, where it is stored, how it is moved across different systems, and how it is integrated (yes, data integration). Data architecture policies include standards for data

modeling, naming, and ETL processes. Having these policies in place helps to ensure more scalable, repeatable solutions that reduce development efforts because of consistency across datasets and reusability of data and code.

Reliance on Individual Knowledge

While there will not be a specific Data Governance policy to address this topic, a maturing Data Governance program will reduce individual reliance because there are policies and processes that address metadata and data quality as well as defined roles and responsibilities. The end goal here is to create as much of a self-sustaining data ecosystem as is feasible for a given organization.

Culture

Like the reliance on individual knowledge, Data Governance will not create and maintain policies, processes, or standards that address an organization's culture. The culture shift becomes a byproduct of having the other policies in place. For example, when there are policies in place (that you are compliant with) that address metadata, there will be less ambiguity about data assets and users will understand what data means so they are less likely to inadvertently misinterpret a definition. That in itself leads to breaking down division silos and promotes data sharing. That becomes a win-win across an organization.

Chapter 1 - Introduction Summary

I have given you a welcome, shared my experience, and explored common themes and how Data Governance can help solve those problems. In closing, I offer a short overview for each of the upcoming chapters. You can read straight through or choose a topic that is of particular interest to you.

Chapter 2 - Rethinking Data Governance

This chapter will explore popular approaches to Data Governance and walk you through a high-level disciplined approach to planning, designing, and launching a program. Other chapters will detail the concepts outlined in this chapter.

Chapter 3 - Data Governance and Data Management

I will share a detailed framework for Data Governance and Data Management that includes Data Governance, Data Management, Data Stewardship, Business Drivers, Solutions, and Methods. Each component of the framework will be described in detail.

Chapter 4 - Priorities

In order to be successful in Data Governance, you need to have focus. I will share with you prioritization approaches. By the way, these work for non–Data Governance–related activities as well.

Chapter 5 - Common Starting Points

The most common starting points for Data Governance are metadata and data quality. I will talk about these two concepts in detail as I expect they will be foundational to your program.

Chapter 6 - Data Governance Planning

Data Governance planning begins with defined program objectives. They are truly the cornerstone for program activities, defining roles and responsibilities, measuring and monitoring, and communication. I will provide guidance as well as examples for creating objectives. Guiding principles are also important in that they provide direction for a program. Like objectives, I will provide examples you can use as a starting point.

Chapter 7 - Organizational Framework

When asking people to participate in Data Governance, they need to understand what they are going to be tasked with doing and how their role fits into an overall ecosystem. I will provide several examples of organizational frameworks and give tips for creating one for your organization.

Chapter 8 - Roles and Responsibilities

After defining an organizational framework, you need to be able to define activities and decisions (that align to defined objectives) and then align them to said organizational framework so there is no confusion about who is doing what. I will provide examples and talk about the process of creating detailed responsibilities so you can take the next logical step of naming names.

Chapter 9 - Operating Procedures

Data Governance participants will be curious, and sometimes anxious, about what it looks like to participate in the program. I will share samples of detailed operating procedures along with sample workflows that represent program to-do's, which were derived from the roles and responsibilities.

Chapter 10 - Communication

Communication is an important Data Governance program management function. This chapter will explore the key components of a communication plan provide and provide a sample.

Chapter 11 - Measurement

Establishing measures for both policy compliance and program progress are important. This chapter will provide measures that are aligned to

program objectives. I will also share a program scorecard you can use as a starting point.

Chapter 12 - Roadmap

It is difficult to measure and communicate program progress without a plan in place. The roadmap needs to be aligned to implementation of the organizational framework. I will talk about key workstreams and how they can be reflected in a program roadmap. The sample roadmap can be used as a starting point, or even to help you determine cadence.

Chapter 13 - Policies

This chapter discusses the different components of a Data Governance policy. It also provides two policy examples (one for metadata, the other for data quality) you can use as starting points. The policies are annotated with special considerations for why decisions were made.

Chapter 14 - Data Governance Maturity

This final chapter will provide a recap and summarize Data Governance concepts as it explores how to mature your Data Governance program.