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Data Governance

Noted mathematical physicist Edmund Whitaker (1873–1956) once remarked, "When by purely scientific methods we trace the development of the material universe backwards in time, we arrive ultimately at a critical state of affairs beyond which the laws of nature, as we know them, cannot have operated."[1]

A popularly held belief is that our universe had a beginning, whether through evolution or by creationism. Ostensibly, since the beginning, our universe has been governed—at the very least, governed by the laws of physics. Therefore, no matter what we do in this world, we are already under some type of governance initiative.

Regardless of whether the laws or constants of physics are products of chance or provisions of a deliberate design, the application of the physical laws in our universe appear to hold everything together (based on the general understandings of relativity and the uncertainty principle).

If an occasional event or transpired happening seems to defy all sense of physics, then permitting a deviation (i.e., accommodating the sporadic miracle or unexplainable event here and there) is certainly a valuable attribute or

1. See Silk (2005).

quality of governance. Although governance can be used to provide a cadre of oversight mechanisms that help stay behaviors and push to establish consistency, governance should not necessarily be an unbending and unwavering mechanism.

In terms of governance, knowing the when, where, how, and why a deviation should be permitted may not only be in the best interest of the universe, but also in the best interest of organizations that have chosen to adopt a governance program. As a maxim, recognizing the strategic efficacy of allowing or encouraging a transition from the norm is in the self-interest of a governance body, but also serves to enrich the function of the governance body. Potentially, the prudent allowance of a deviation is the one mechanism that keeps a governance body vital and sustainable in an organization.

Arguably, the entire concept of business is one of the most complex creations man has ever devised. Even though man is already being governed as being a part of the universe, in business additional layers of governance often seem to be required. Like much of what happens on our planet, additional types of governance prove quite useful—for example, Mother Nature (e.g., survival of the fittest, instinct, and so on) and so, too, mans' creations often benefit from additional layers of governance.

Public corporations normally have a layer of corporate governance established by the board of directors. The board of directors is a separate, independent body of the corporate structure and uses governance to help assert oversight. Corporate governance is further influenced or governed by a series of commercial laws. In addition to corporate governance, a business often injects other layers of governance throughout the organization. Within information technology, data governance is one example of an additional layer of governance.

Regardless of the managerial structure adopted by an organization—hierarchical, matrix, or flat—the function of management, along with an arsenal of business policies, operating models, strategies, directives, and so on, is all too often insufficient to help steer the actions of the organization consistently and predictably. Business is generally influenced by the following basic tenets:

- Having a determination and dedication to a cause
- Having a culture that embraces, accepts, and tolerates the cause
- Having adequate resources and technology to support the cause, and anything that is unknown can be overcome or worked out in a timely manner

- Having belief that the cause can be successful within a reasonable time frame
- Having access to sufficient finances to undertake the cause
- Having organization leadership with the authorization to discipline, reward, or punish to ensure compliance

These tenets, or six laws, are irrefutable for the science of embarking on a cause for business—especially a project-based cause. If any one of these laws is removed or violated, the entire project may collapse. The six laws form the basic physics of project-based service-oriented architectures and data management.

To ensure compliance, an organization generally requires something over and above a set of laws. To help ensure desired actions, rules of compliance are needed. Rules of compliance can be used to explain exactly how each law is to be obeyed. Consider, for example, the U.S. law requiring payment of income taxes. That is the law. To comply with that law, the U.S. Congress prepared a list of rules. The rules became so complex that they were given their own name: the U.S. Tax Code.

Whereas laws tend to be irrefutable, rules are not. For a law to change, the underlying science has to have been changed (or at least our understanding of the underlying science). Rules, on the other hand, may be challenged and changed as circumstances warrant. However, any challenges or changes must comply with the present (understanding of the) laws.

Rules of compliance constitute one type of rule set, but a business may utilize many types of rule sets. Rules of behavior are another type of rule set found in an organization. Rules of behavior do not demand compliance. In turn, they address how people think and act and are typically rooted in culture and education. Rules of behavior address the issues associated with a discipline. For a governance program to be successful, obliging or influencing the rules of behavior is a priority.

While management may appear sufficient when considering various rules of compliance, the need to address behaviors (such as ego, fiefdoms, complacency, passive aggressiveness, and the quirky not-invented-here syndrome) may require some further oversight in the form of governance to facilitate matching behaviors and work products.

An intention of governance is to oversee and influence behaviors or outcomes in some manner. However, many individuals in the workplace can be seen to govern themselves. For example, employees tend to show up at an

agreed to work location and then work for a predefined period of time; this pattern has the appearance of being successfully repeated on a regular basis.

If an employee is tasked as a programmer, the primary function that person performs is programming. Programmers operate within the boundaries of the syntax associated with a given programming language. (The syntax serves to govern how the programmer prepares the program.) People can often work in environments where the appearance of self-governance is taking place. Self-governance may not result in the acceptance of a work product by a manager or peer, but self-governance allows people to control their own actions.

Work teams can invoke governance through peer pressure and managers of teams and individuals can also govern their workforces. Managers may often make sure that employees follow standards and acceptable work practices, especially in the disciplines of programming and database administration. Although governance appears to naturally affect all work practices, governance around management activities and the self-governance imposed by an individual is considered separate from the type of governance associated with data governance (see Figure 2-1).

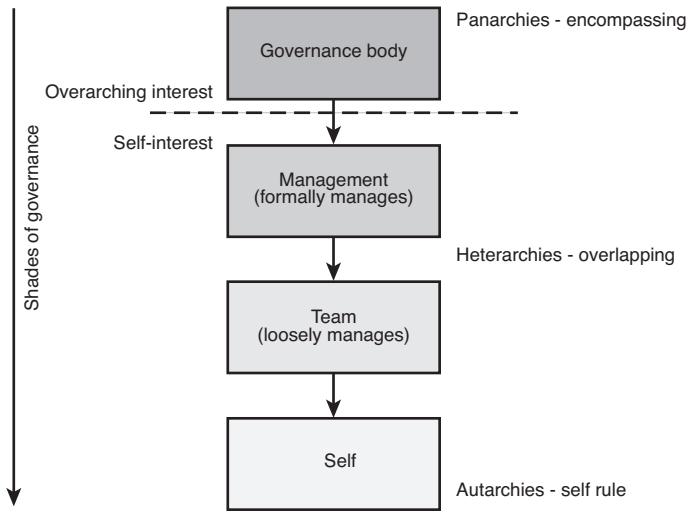

Figure 2-1 Shades of governance.

Literally anything can be said to be governed or governable. However, to serve a purpose, the function of data governance should be distinct and distinguishable from normal work activities. Therefore, data governance

should be distinguishable from data management, programming, database administration, data entry, and so on.

The use of a governance body should be to primarily undertake that which individuals or individual managers cannot undertake for themselves. Along the shades of governance, the use of the governance body is not confused with the acts of governance performed in one's own interest. In this model, governance is reserved for external governance bodies.

For example, if a data management department institutes a data governance initiative, the governance mechanism could be viewed as self-serving for the data management manager or the department as a whole. In this case, the governance body is organizationally protected from other external influences and may limit its governance directives for the perceived good of the data management department instead of the perceived good of the overall organization.

Some corporate governance initiatives rebuke the notion of having a chief executive officer serve as the chairman of the board. One rationale for this type of decision is to remove a potential conflict of interest when the board monitors the chief executive officer and other senior management in terms of competency and the evaluation of ethical behavior when running the day-to-day operations.

Likewise, when a department sponsors a governance initiative, the likelihood of a conflict of interest also arises. Therefore, governance mechanisms should have an external overarching interest and should not be established for self-interest. Although the function of oversight and control are shared concepts by both the external overarching governance mechanism and the self-interest governance mechanism, discerning the difference can become confusing.

To help illustrate a potential confusion about what can be regarded as governance, consider the following situation:

> A data management department is responsible for creating logical data models. Over time, the department compiled and published a comprehensive set of standards for creating logical data models. The standards dictate the diagramming notation, the data modeling tool, guidelines for creating entity and attribute descriptions, naming standards, and so on.
>
> A data modeler tasked with interpreting and handling a business requirement, created a new logical data model. The core part of the model used an entity to manage customer information (see Figure 2-2). While interpreting a separate business requirement, the same data modeler created a separate model to also handle customer information (see Figure 2-3).

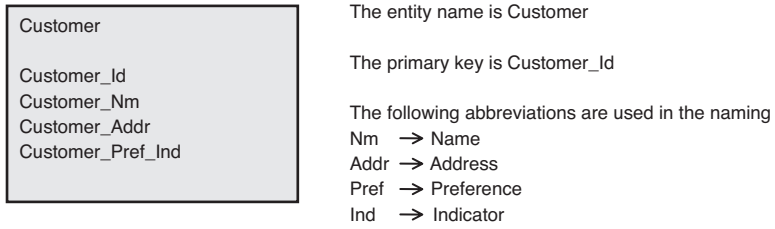

Figure 2-2 Logical data model handling customer information from requirement 1

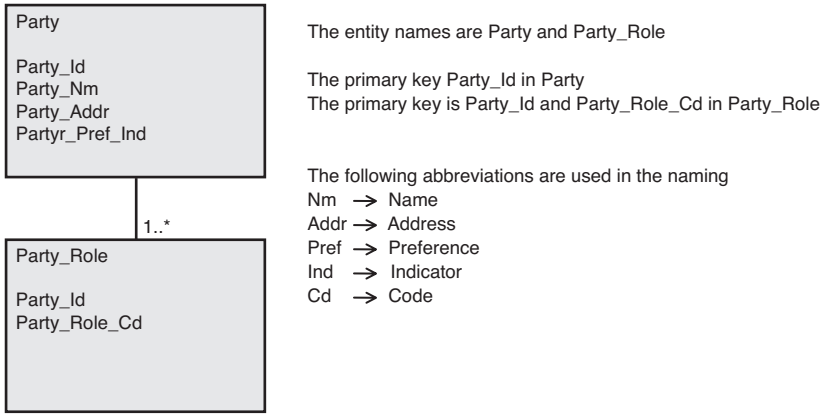

Figure 2-3 Logical data model handling customer information from requirement 2.

The abridged logical data models shown in Figures 2-2 and 2-3 are intended to be fully compliant with all prescribed logical data modeling standards. Both logical data models are capable of managing the same information, but do so using two distinct abstractions.

In this case, the logical data modeling standards, although put in place to drive consistency, failed to control or influence how a person thinks through a given problem. On the one hand, the standards can be viewed as failing to sway consistency in creative thinking. On the other hand, governance can be used as a mechanism to fill a gap left by the standards. In this situation, the data modeler aware of the circumstance can decide how to handle this anomaly. The data modeler has chosen to engage in governance.

Within the data management department, two separate data modelers each created one of the logical data models; one data modeler created the

model shown in Figure 2-2, and the second data modeler created the model shown in Figure 2-3. The two data modelers may be unaware of the overlap in handling a common concept using the two disparate abstractions. In this case, the department manager may be required to have the requisite oversight and step in to manage the situation, thus acting as a governor.

In a third scenario, the model shown in Figure 2-2 is created by a data modeler in the data management department, and the model shown in Figure 2-3 has been acquired through a commercial software package. In this scenario, the software package is managed by a separate group. A data governance body could provide oversight as an independent group separate from the data management department and the group handling commercial software packages.

Having broad, independent oversight, the data governance group can help drive a consistent outcome in the abstraction or choose to permit a deviation in having two distinct representations for a common concept within the enterprise. How a data governance body chooses to exercise its control is an important aspect in terms of a governance body achieving and sustaining success within the corporate culture.

Alternative situations could have readily been used in place of the logical data model scenario. For example, the situation could have been based on a composite service, an orchestrated workflow, or an Extensible Markup Language (XML)-based message.

A separate example involves the maintenance of a mailing address in a party-centric master data management solution, whereby the effort to govern a consolidated view may simply result in a corporate punt and the opportunity to govern may be circumvented. To *punt* is to give up or to defer until an unspecified point of time in the future.

Organizations with multiple lines of business and a service-oriented master data management solution often punt opportunities. Typically, each line of business is allowed to preserve its own mailing address rather than be governed to resolve to a single overarching view of the party. Should this situation occur, the mastered data becomes an aggregation hub. Seen from the viewpoint of the enterprise, the addresses become a collection of facts and not a singular point of truth.

To successfully avoid viral data in a service-oriented master data solution, the data store should contain a series of truths without a direct business context. A line of business adds a specific type of business context. Adding a context into a solution intended to be without a context increases the potential for a viral data pandemic.

In the example involving the logical data models, the initial data modeler, the department manager, and the data governance body all participated in governance. However, the data modeler and the department manager dealt with the situation in terms of self-interest, which from a governance perspective is coined *intra.* Intrasituations of governance fall under the umbrella of traditional management. The data governance body dealt with the situation in terms of an overarching interest, which is coined *inter.* Intersituations are deemed as a suitable governance paradigm and separate from that of management.

The term *intra* connotes that something is within. In the first two cases, reconciling differences in the logical data modeling abstractions lay within the data management department. Situations that can be classified as occurring within are candidate to be handled by management processes.

The term *inter* connotes that something transcends. In the third situation, the inconsistency occurs between two disparate groups. The data governance body acts to reconcile a situation for which traditional leadership may be unable to anticipate, identify, or resolve.

Although all three situations in the logical data modeling example were governed, intrasituations are best handled by managing. Distinguishing between governing and managing helps to reinforce and strengthen the role and function of the manager. Some organizations may view governance as an optional function or method, whereas managing is not something that can be construed as an option. Distinguishing between acts of management and acts of governance help set scope and purpose for a formal governance function.

Furthermore, optional mechanisms or programs are more likely to be affected by fluctuations in budgetary allocations. Delineating between the purpose of governance in a governance program and governance as part of the natural course of management can help prevent disruption caused by budgetary (or organizational) adjustments should a governance program encounter a fiscal disruption. The distinction also helps when a governance body is mandated to help achieve regulatory compliance.

As mentioned earlier, how personnel in a governance program communicate can contribute to the overall success of a governance initiative. "The primary role of establishing SOA data governance and auditing services is to enable and manage the enforcement of business and security policy as it is applied to data… data governance provides a level of accountability."[2]

2. See Hurwitz (2006).

The communication traits associated with the accountability or oversight can be described following the FARMADE technique:

F **F**acilitator
A **A**rbitrator
R **R**epresentative
M **M**ediator
A **A**uthoritarian
D **D**irector
E **E**nvoy

FARMADE represents a list of communication styles that may be adopted by a data governance body. Which style is best or which combination of styles should be used is based on a number of factors. Those factors can include corporate culture, the degree of authority granted to the governance body, and the degree by which that authority is recognized:

- **As a facilitator**

  Governance personnel are responsible for coordinating resolution activities across the involved groups, departments, or communities. In this case, the governance body is not expected to act as the sole decision-making body.

- **As an arbitrator**

  Governance personnel are used to help decide a dispute, settle differences, or resolve a direction by being the final decision maker.

- **As a representative**

  Governance personnel are colocated across departments or groups to ardently oversee activities or products being produced. The use of representatives acts to partially decentralize the function of data governance.

- **As a mediator**

  Governance personnel act to seek reconciliations to differences.

  Facilitation and mediation are sometimes seen as two interchangeable terms because they can both be used to readily accommodate the involvement of an independent group such as a data governance body into a resolution process without giving the data governance body sole decision-making authority. In addition, the terms can be used as a means to alter

the dynamics (behavioral or technological) between various departments so that opportunities for collaboration can improve.

As a distinction, data governance in mediation can be used to help departments deal with a particular conflict that has yet to be addressed. Here is an example of using data governance as a means to achieve a resolution for which no single manager has the authority to mandate. The core objective of facilitation is to provide the means of structure and process for solving problems and for expeditiously making decisions so that goals can be achieved and overall effectiveness realized. In addition, managing conflict can be an important part of facilitation, but conflict resolution is not always the primary focus.

In mediation, data governance may intervene once an impasse has been recognized. In facilitation, data governance typically steps in before the impasse is reached.

- **As an authoritarian**

  Governance personnel can dictate or mandate a resolution without regard for consensus or an agreement.

- **As a director**

  Governance personnel act proactively to help thwart issues before they arise.

- **As an envoy**

  Governance personnel act as a channel to senior management, other governance bodies (such as IT governance), or to other areas of the organization such as a separate line of business.

"Data Governance Council responsibilities usually encompass all aspects of data use and management, including strategic, tactical, and operational."[3] However, as previously mentioned, data governance can best serve the organization as an independent body or council and not as an encompassing body as conflicts of interest may arise. Instead of providing strategic, tactical, and operational positions, data governance can complement its oversight by demanding that certain types of controls be put in place (see Figure 2-4).

3. See Inmon (2008).