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THE DATA WAREHOUSING INSTITUTE

TDWI Data Governance Fundamentals

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TABLE OF CONTENTS

Module 1

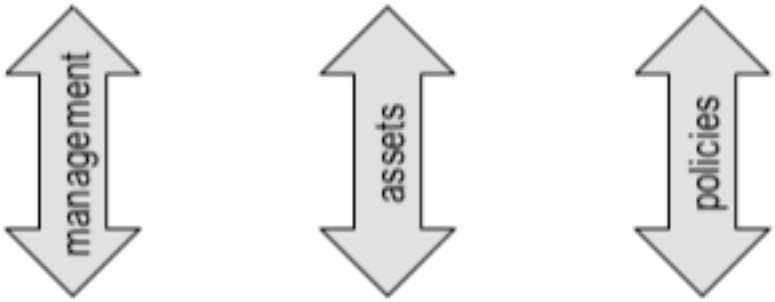
Data Governance Concepts

Defining Data Governance

Applying Governance to Data

Data governance is an emerging, cross functional management program that treats data as an enterprise asset: A collection of corporate policies, standards, processes, people and technology essential to managing critical data to a set of goals.

Maria Villar & Theresa Kushner



Data governance is the organization and implementation of policies, procedures, structure, roles, and responsibilities which outline and enforce rules of engagement, decision rights, and accountabilities for the effective management of information assets.

John Ladley & Danette McGilvray

Defining Data Governance

Applying Governance to Data

MANAGING A VALUABLE ASSET

Maria Villar and Theresa Kushner define data governance as a "management program that treats data as an enterprise asset: a collection of corporate policies, standards, processes, people, and technology …"[1]

John Ladley and Danette McGilvray define data governance as "policies, procedures, structure, roles and responsibilities which outline and enforce rules of engagement, decision rights, and accountabilities for the effective management of information assets."[2]

Both definitions are informative and thought provoking. Considering them together provides a good sense of the core of data governance as an asset management practice with attention to data-related policies.

ADDITIONAL PERSPECTIVE

No single standard definition exists, but several other information management practitioners define data governance in a variety of ways that add depth to overall understanding of the subject:

Gwen Thomas defines it as "execution and enforcement of authority over the management of data and data-related processes."[3]

Alex Berson and Larry Dubov define it as "a process focused on managing the quality, consistency, usability, security, and availability of information."[4]

David Loshin describes data governance as "a program for defining information policies that relate to the constraints of the business …" [5]

ASSETS & VALUE MANAGEMENT

Jonathan Geiger says, "data governance recognizes that data is an important enterprise asset and applies the same rigor to managing this asset is it does for any other asset."[6] When considering asset management for financial or property assets it is generally true that value is a key consideration. It follows, then, that data value is key in data governance.

[1] Source: *Data Governance Fundamentals,* www.elearningcurve.com. Villar & Kushner are authors of *Managing Your Business Data*.

[2] Source: *Executing Data Quality Projects* by McGilvray is the author. Ladley is a well-known EIM consultant.

[3] Source: *Data Governance Defined* by John Ladley (www.enterprisedatajournal.com/article/data-governance-defined.html).

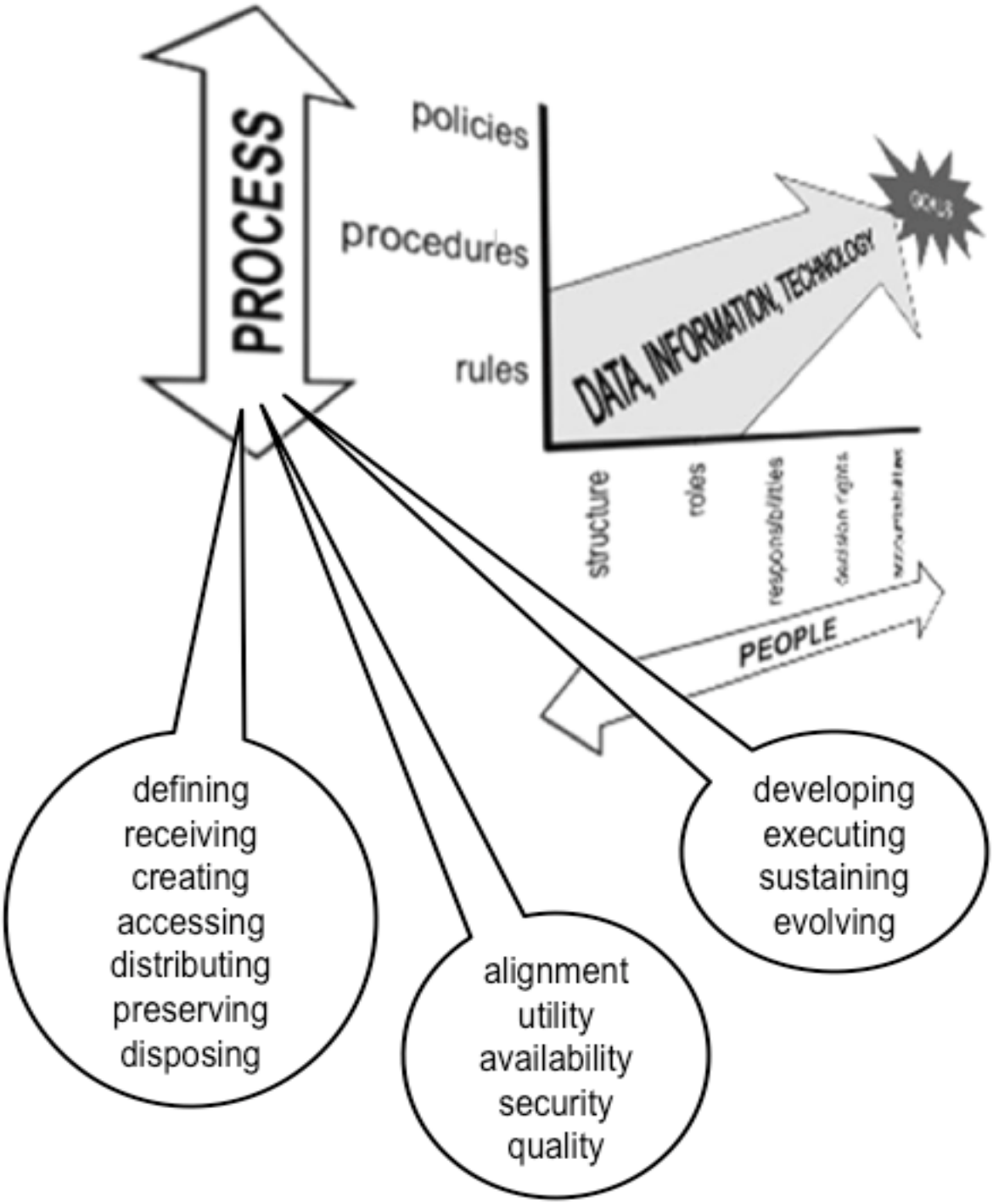
[4] Source: *Master Data Management and Customer Data Integration for a Global Enterprise* by Berson and Dubov.

[5] Source: *Master Data Management* by Loshin.

[6] Source: *Data Governance Defined* by John Ladley (www.enterprisedatajournal.com/article/data-governance-defined.html). Geiger is Executive Vice President of Intelligent Solutions and a well-known speaker and consultant.

Dimensions of Data Governance

Processes



Dimensions of Data Governance

Processes

LIFECYCLE & PROCESSES

Policies, rules, and procedures are needed for each activity of the information lifecycle: defining data, creating and receiving data, accessing and distributing data, and preserving and disposing of data. Policies may be driven by legal and regulatory considerations or by organizational values and practices. Rules make policies clear, non-ambiguous, and testable. Procedures describe how rules are implemented and enforced.

GOALS & PROCESSES

Policies, rules, and procedures are most effective when directly connected with information management goals. Processes to secure data from intrusion, for example, are founded in data security policies, procedures, and rules.

INFORMATION MANAGEMENT & PROCESSES

Information management and data governance are dynamic, continuously changing activities. New processes are regularly developed, existing processes executed on a day-to-day basis, good practices sustained by management processes, and growth achieved through evolving processes. Every information management process follows a Develop-Execute-Sustain-Evolve (DESE) lifecycle.

PUTTING THE PIECES TOGETHER

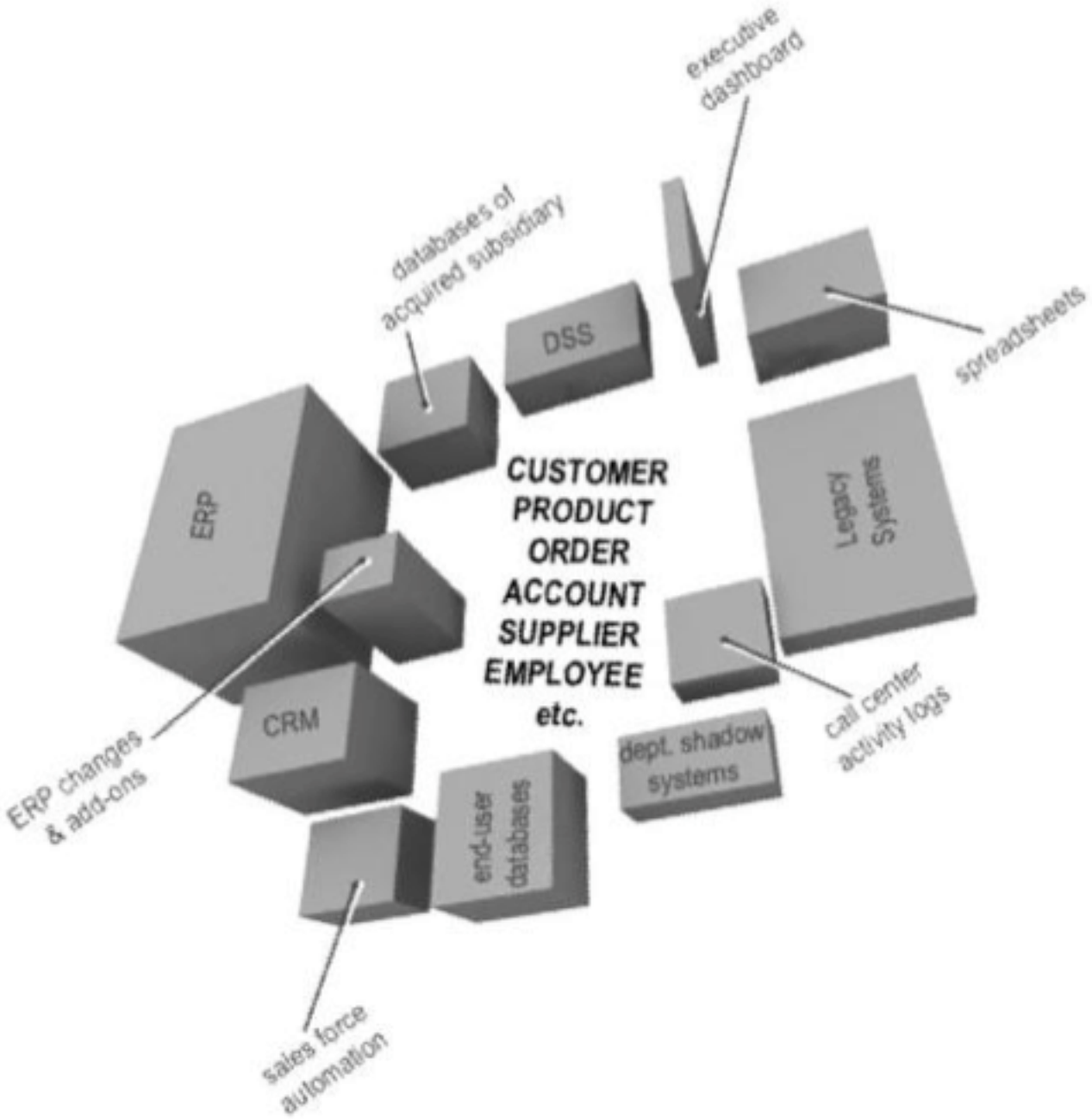
Combining all of these process perspectives produces a process map as shown below.

		Information Management Goals					
		Alignment	Utility	Availability	Security	Quality	etc.
Information Lifecycle Activities	Define	DESE	DESE	DESE	DESE	DESE	DESE
	Receive/Create	DESE	DESE	DESE	DESE	DESE	DESE
	Access/Distribute	DESE	DESE	DESE	DESE	DESE	DESE
	Preserve/Dispose	DESE	DESE	DESE	DESE	DESE	DESE

Goals drive processes: if security is a goal then processes must attend to security. *Lifecycle activities frame processes:* security policies, rules, and procedures exist when data is defined, received, created, accessed, distributed, preserved, and disposed. *Processes follow lifecycle:* new security processes are developed, existing security processes are executed and sustained, and changing security requirements drive evolution of security processes.

Data Governance Challenges

What Data to Govern?



Data Governance Challenges

What Data to Govern?

SCOPE OF DATA

One of the big challenges when starting a data governance program is to determine the scope of data to be governed. Every organization has lots of data. It is present in enterprise systems and databases, data warehouses, decision support databases, departmental systems, shadow systems, end-user databases, spreadsheets, and more. Each database has different needs and considerations related to quality, security, compliance, etc. Furthermore, the data encompasses many subjects – customers, products, orders, accounts, employees, etc. – and each subject has different needs and considerations for quality, security, and compliance.

The combination of abundant and often redundant data with many data subjects makes scope of data a complex and compound set of questions. Looking at a single subject – customer, for example – the questions include:

- Do you need to govern customer data?
- What are the motivations for governing customer data – quality, security, compliance, etc?
- Where are all of the places that customer data exists, including end-user databases and spreadsheets?
- For each location where customer data exists, is data governance necessary? Is it practical?

These are not easy questions to answer, and the answers will vary from one business to another. Consider, for example, the implications of customer data in a spreadsheet on a portable USB drive. If your business is healthcare and the customer data is really patient data, the security and compliance issues are significant. If your business is media services, this may be a lower risk scenario. It may be necessary to govern spreadsheets in one instance and impractical to do so in another.

SOME GUIDELINES

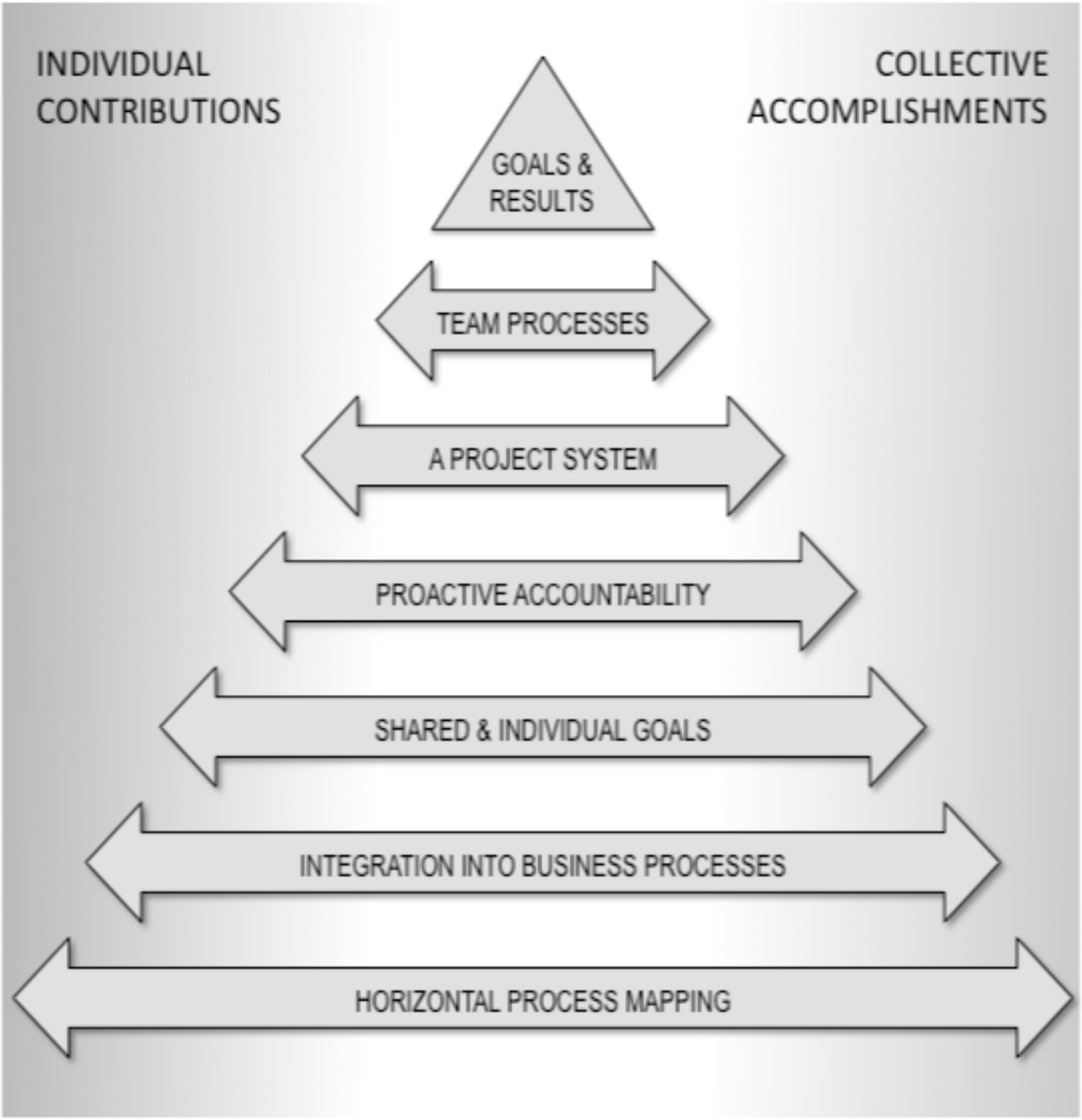
Limit the scope of data to that for which there is a clear need to govern. The Data Governance Institute advises to govern "as little as will help you meet your goals." If you're just getting started with governance it is wise to start with small scope – one or a few subjects with a high degree of cross-functional business activity. Also consider for each subject and for each kind of database the level of business interest and participation that you can expect. What level of support and sponsorship is realistic? What level of resistance is likely?

Module 2

Data Governance Organizations

Governance and Management Practices

Horizontal Management in Vertical Organizations



Governance and Management Practices

Horizontal Management in Vertical Organizations

CROSS-FUNCTIONAL GOVERANCE

From an organizational perspective, the data governance challenge is determining how to harness many individual activities and efforts and bring them together in a way that meets the program goals through collaborative and collective management processes. To govern horizontally across many business functions and data domains, it is necessary to understand the principles of matrix management.

Matrix management is not something new. It was introduced in the 1970s as a way to handle cross-functional needs – to execute horizontally inside vertically structured organizations. Early matrix management methods resisted letting go of authority and control as core management methods. So they created dual-reporting structures – one person with two bosses, each exercising authority and control of overlapping processes.

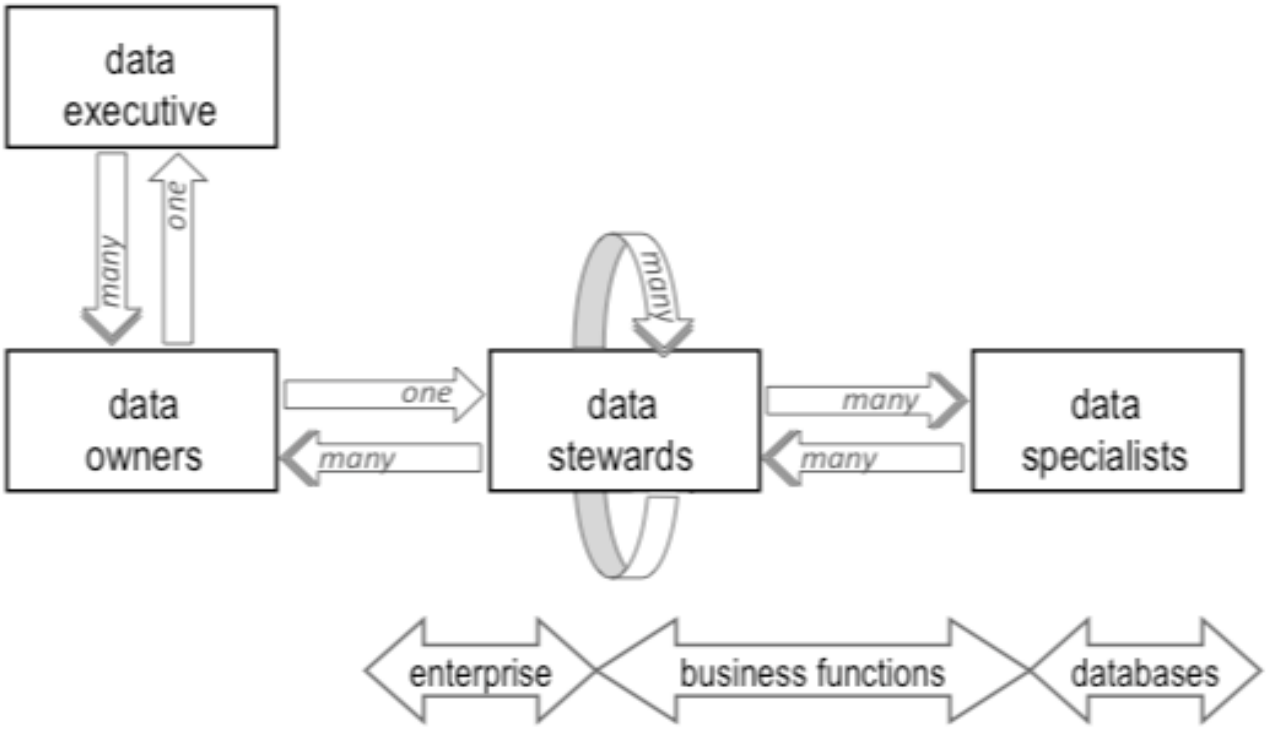
It is easy to understand why this approach didn't work especially well and why the practice of matrix management had diminished by the 1990s. But the need to manage horizontally across vertical organizations has not disappeared, and data governance is a classic example of that need. A good foundation for governance is found in the principles of an emerging practice called the new matrix management.[1]

- *Horizontal Mapping* to represent essential pieces of governance – which processes participate and where do dependencies exist.
- *Integration into Business Processes* to ensure that the right governance activities occur when and where they should occur.
- *Shared & Individual Goals* to create shared purpose and help every stakeholder to find their place in the big picture of data governance.
- *Proactive Accountability* to drive results through participation and recognition, avoiding a culture of errors, rework, and blame.
- *A Project System* because some aspects of data governance really need projects – designated and funded work efforts to create something new or make significant improvement to something that exists.
- *Team Based Methods* that include common methodologies, processes, and practices to enable collaborative management.

[1] Source: *The New Matrix Management – The Future of Organizational Success* by Cathy Cassidy (http://tinyurl.com/matrixmgmt), Cassidy is CEO of The Matrix Management Institute.

Data Governance Roles

The Governance Team



DECISION AREAS	DATA GOVERNANCE ROLES			
	data executive	data owners	data stewards	data specialists
scope of governed data	define & lead	participate	guide & support	support
data management maturity	define & lead	participate	guide	support
data management priorities	lead & moderate	define	guide	participate
data policies & standards	define	participate	lead & guide	support
data initiatives and investments	define & lead	participate	guide & support	support
data issues & conflicts	moderate	participate	define & guide	participate
data management scorecard	define & lead	participate	participate	participate

Data Governance Roles

The Governance Team

ROLES AND RELATIONSHIPS

Some organizations establish a *Data Governance Office*; others call it the *Data Governance Council*. Whatever you choose to call it – office, council, committee, or something else – the goal is to establish a team where each member:

- Knows what role(s) they fill
- Understands the responsibilities of the role
- Knows what "position" to play – leader, moderator, guide, participant, supporter, etc. – at what times
- Knows who depends on them
- Knows who to depend upon

Combining the roles to effectively support enterprise, functional, and technical views across all decision areas helps to build an effective data governance team.

Data Governance Skills and Disciplines

Data Architecture

Data Governance Skills and Disciplines

Data Architecture

THE NEED FOR ARCHITECTURE

Architecture describes the way that a diverse set of components fits together and interacts to fulfill a purpose or meet needs. Enterprise data certainly fits the criteria of "a diverse set of components." Managing the data architecture is a critical skill without which any data governance team will struggle.

Data architecture is complex because enterprise data is complex. A typical enterprise has redundant data dispersed across many systems and databases. Much of the data resides in legacy and ERP systems where details of data structures may be obscure. More data exists in personal databases and spreadsheets – often unknown to the IT department. Still more data may be found in the external systems of service providers or business partners. Architecture is necessary because:

- Enterprise data is widely dispersed and redundant.
- Multiple representations of similar information are fundamentally different in format, structure, definition, quality, completeness, and security controls.
- Most of the data lacks documentation, models, and other metadata.
- *You should not govern what you don't understand.*
- The core data management processes of IT departments touch only a small percentage of the enterprise data resource.
- Much of the data that exists outside of core systems is invisible to those who govern data.
- *You cannot govern what you can't see.*

WHAT IS NEEDED?

Data architecture can take many forms and mean different things to different people. For governance purposes you need documentation that describes the data resource and illustrates how the components fit together. Minimum documentation includes:

- A subject model that describes the various data domains
- Logical models that describe business views of the data
- Subject and entity definitions
- Implementation maps showing where entity data resides physically
- A matrix map of business unit interactions (create, report, update, delete) with data entities

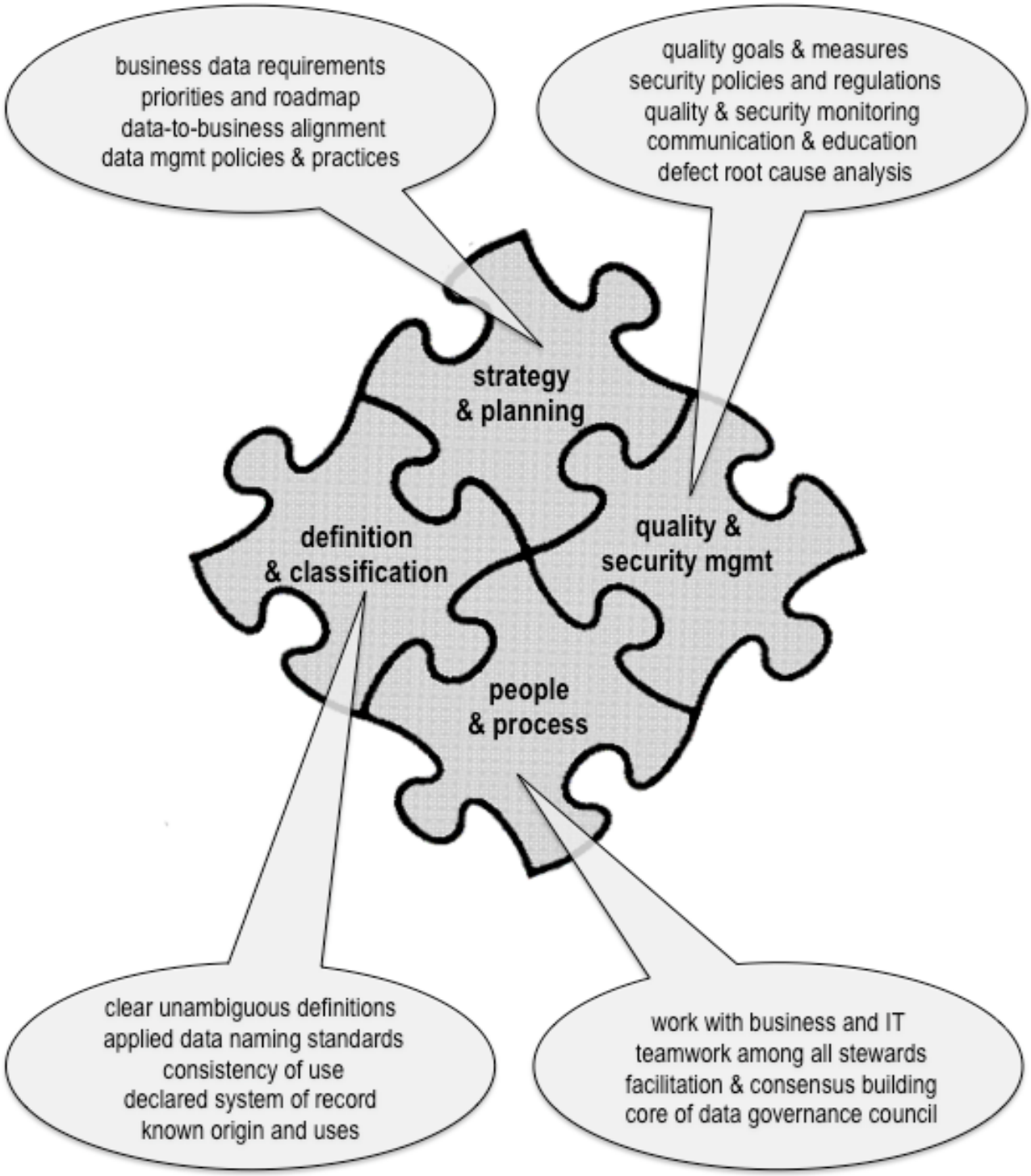
Beyond the minimum documentation you may also want to document data flow, data lineage, and attribute/element definitions. In a changing environment, "as is" and "as needed" models are valuable.

Module 3

Data Stewardship

Stewardship Concepts

Responsibilities and Accountabilities



Stewardship Concepts

Responsibilities and Accountabilities

A NEW AND DIFFERENT ROLE

As we've already discussed, data governance involves three primary roles – ownership, stewardship, and custodianship. Stewardship, however, differs from the other roles in some significant ways. Data stewardship needs to be explored in greater depth because:

- Stewardship is a distinctly new and different role. Ownership recognizes and formalizes a set of responsibilities of business managers but does not redefine the job of business management. Similarly, custodianship recognizes and formalizes responsibilities of data specialists but doesn't redefine their jobs. Data stewardship is different because it is a new kind of job.

- Data stewardship is the nexus of data governance. It provides linkage among owners of different but related data subjects. And it connects business rules and requirements with data models, database design, information systems implementation, and day-to-day management and administration of data.

SCOPE OF RESPONSIBILITY

Data stewardship responsibilities fit into four major categories:

- *Strategy and Planning* identifies business requirements for data and information, helps to set priorities, and maintains a roadmap of activities to meet requirements. Continuous alignment of data with business needs, and of data management policies and practices with business goals are primary strategy and planning objectives.

- *Definition and Classification* addresses the many definitional and metadata topics previously discussed – data definitions, data naming, consistent use of data, lineage and traceability of data, etc.

- *Quality and Security Management* is a direct connection to the goals of—and motivations for— governance. Areas of responsibility include policies, regulations, goals, measures, monitoring, communication, education, and root cause analysis.

- *People and Process* responsibilities are among the most important of data steward responsibilities. Through teamwork, facilitation, and consensus building they form the core of a governance organization.

Stewardship Organizations

Stewardship and Data Domains

	Customer Data Steward (subject)	Marketing Data Steward (unit)	Payroll Data Steward (process)	MDM Data Steward (project)	Lead Data Steward (enterprise)
CUSTOMER	✔	✔		✔	✔
PRODUCT		✔		✔	✔
FINANCE		✔	✔		✔
EMPLOYEE			✔		✔
SUPPLIER				✔	✔
ORDER					✔
etc.					✔

Stewardship Organizations

Stewardship and Data Domains

OVERLAPPING INTERESTS

The facing page illustrates the overlapping interests that will exist when an organization has multiple kinds of data stewards.

Note that four different stewards – subject, unit, project, and enterprise – have a strong interest in the CUSTOMER subject. Here the customer subject steward might have primary responsibility and authority with the marketing (unit) and MDM (project) stewards informed and advising. The lead steward's role would be to clarify issues and resolve conflicts.

PRODUCT and FINANCE subjects have similar scenarios with multiple kinds of stewardship interests. Here, however, no subject area steward is illustrated. In these examples two possibilities are evident: assign a subject area steward, or designate the lead data steward as having subject responsibility.

ASSIGNING DATA STEWARDS

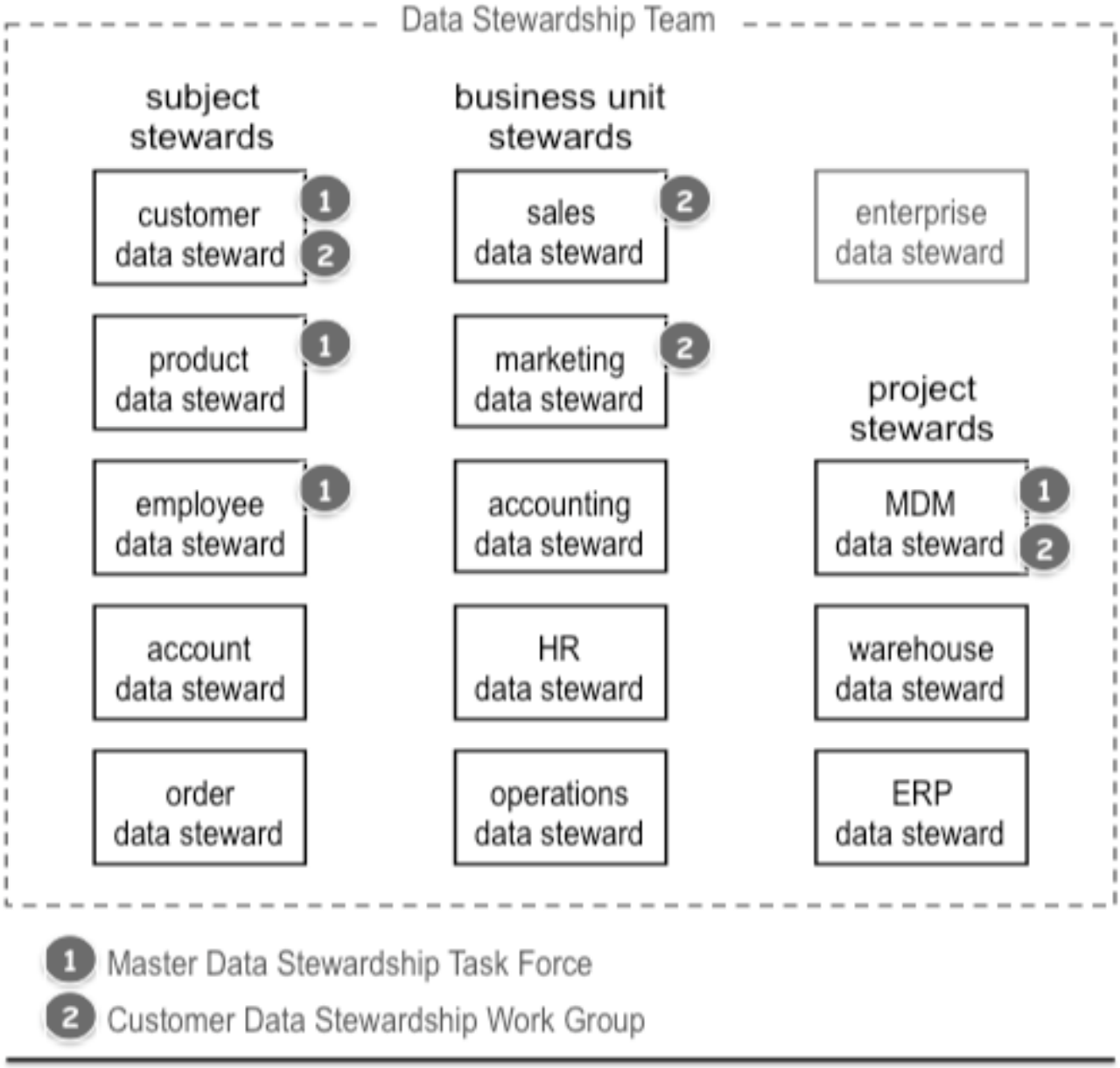
The question of how to assign data stewards is an important one. And the answers aren't especially easy. More kinds of data stewards mean more overlapping interests. Fewer kinds may mean a greater number of real interests that are not fully represented. Imagine, for example, an MDM project without a data steward role. Which is greater risk – adding complexity with a project steward or having a critical, but unrepresented project?

To find the right answers – How to assign data stewards? How many and what kinds of stewards? – consider these factors:

- *The maturity of your data governance program* – In a relatively new and immature program, start small and minimize complexity.
- *The culture of your organization* – Are you skilled and experienced with collaborative management processes? Or are you more of a command-and-control organization?
- *The size of your enterprise* – Large organizations have many units and processes. Be cautious about creating these types of stewards unless there is real and visible need.
- *The scope of governed data* – Narrow scope has a small number of subjects, and may be well served by designating only subject stewards.
- *The global reach of your enterprise* – If you're a multi-national managing global data, it is likely that you'll need location-oriented data stewards.

Stewardship Organizations

Councils, Committees, Communications, etc.



a. Do you have or need an enterprise data steward?
b. Where do subject data stewards report? To enterprise data steward? To data executive? To CIO? Other?
c. Where do business unit data stewards report? To enterprise data steward? To data executive? To heads of individual business units? Other?
d. Where do project data stewards report? To IT project managers? To IT executive? To data executive? Other?

Stewardship Organizations

Councils, Committees, Communications, etc.

COMPLETING THE ORGANIZATION

Regardless of the number and kinds of data stewards, it is likely that you'll need to establish some structure and sub-organizations to create the most effective data stewardship function. Consider questions such as:

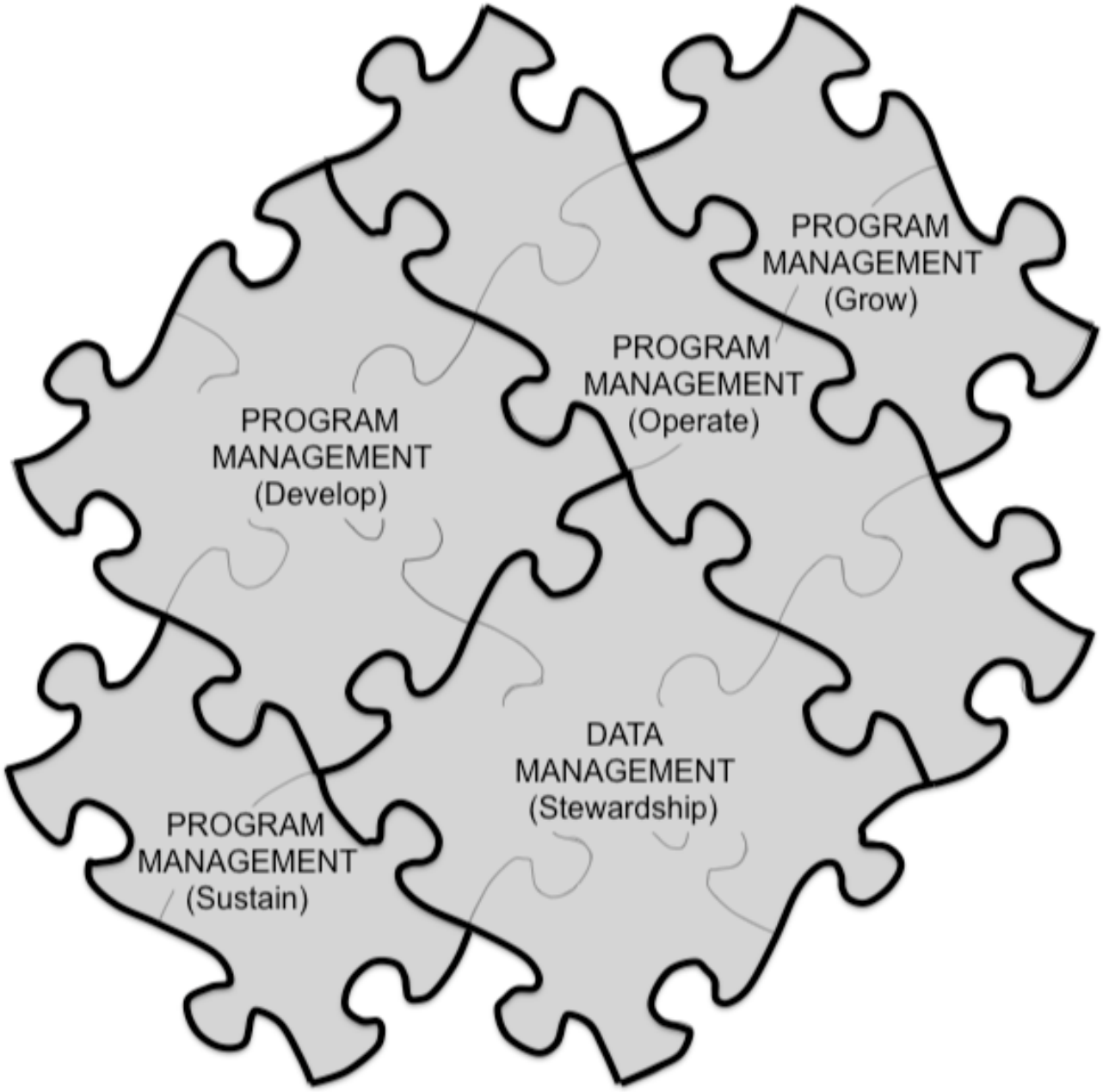
- *What comprises the Data Governance Council?*
  We've said already that stewards are the core of the data governance council – the nexus of data governance. Who else is part of the council? What are the council roles and relationships?
- *What subgroups (committee, task force, etc.) are needed?*
  Do you need committees for specific projects, programs, or problem areas? How will they be formed? How is membership determined? Who chairs or leads?
- *What is the reporting structure?*
  Do you have (or need) a lead data steward? To whom does each type of data steward report?
- *What communications are needed?*
  Are meeting minutes required? Do you have other essential and standard communications? Where and how will communications be published? What about feedback and inbound communications? How will you achieve transparent data management processes?

Module 4

Data Governance Processes

Governance and Management

The Processes of Governing Data



Governance and Management

The Processes of Governing Data

STEWARDSHIP IN A GOVERNANCE PROGRAM

We have now discussed data stewardship extensively. We've looked at data steward responsibilities and accountabilities, the purpose of data stewardship, various kinds of data stewards, creating a data stewardship organization, and essential skills for data stewardship.

Data stewardship is important and central to data governance. But stewardship alone does not make data governance. Data governance is a program – a system of projects and services designed to manage the data resource – that coordinates the activities and efforts of data owners, stewards, and custodians.

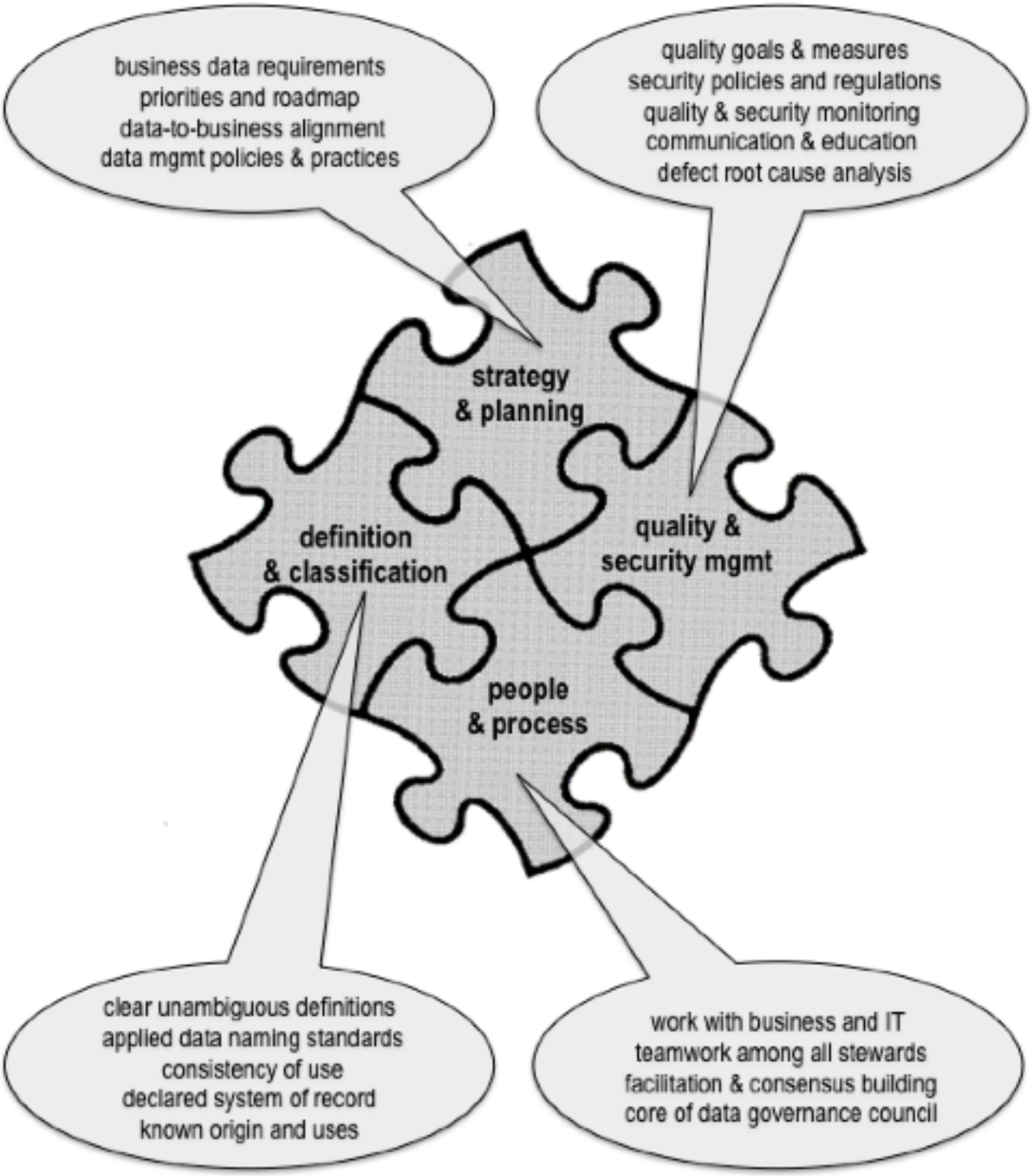
MANAGEMENT AND A GOVERNANCE PROGRAM

Data stewardship focuses on managing data – its quality, security, value, etc. A complete data governance program includes data management but also requires program management with distinct roles, responsibilities, and accountabilities to:

- *Develop* and establish a new governance program at its inception.
- *Operate* data governance on a day-to-day basis.
- *Sustain* the program as issues arise and scope evolves.
- *Grow* governance capabilities and data management maturity.

Data Management Processes

Stewardship of Data



Data Management Processes

Data Stewardship

STEWARDSHIP IS MANAGEMENT OF DATA

A quick review of data stewardship responsibilities sets the stage here because stewardship encompasses the data management processes of data governance. Stewardship is the core upon which a data governance program depends.

Data stewardship responsibilities fit into four major categories:

- *Strategy and Planning* identifies business requirements for data and information, helps to set priorities, and maintains a roadmap of activities to meet requirements. Continuous alignment of data with business needs, and of data management policies and practices with business goals are primary strategy and planning objectives.

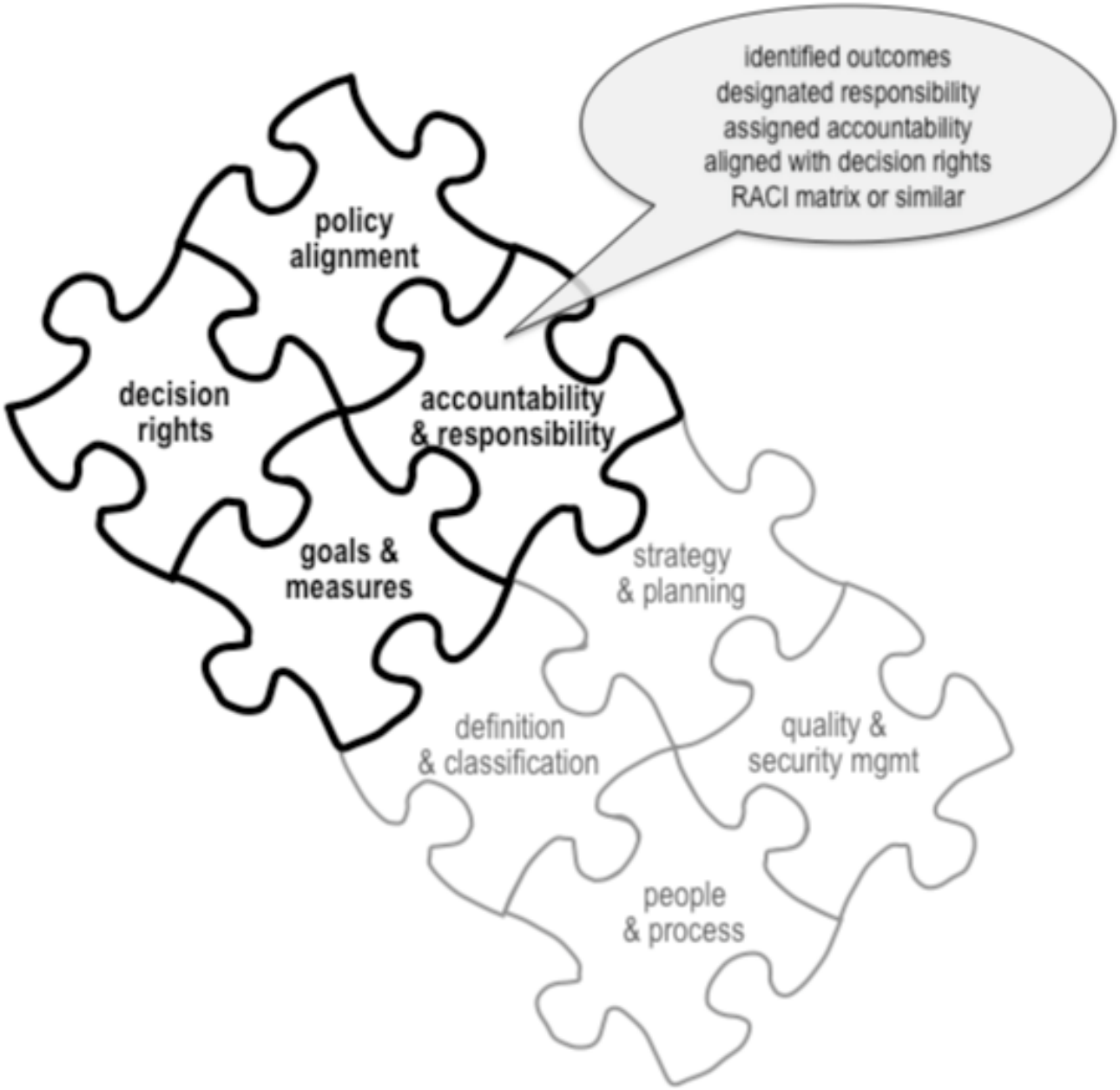
- *Definition and Classification* addresses the many definitional and metadata topics previously discussed – data definitions, data naming, consistent use of data, lineage and traceability of data, etc.

- *Quality and Security Management* is a direct connection to the goals of and motivations for governance. Areas of responsibility include policies, regulations, goals, measures, monitoring, communication, education, and root cause analysis.

- *People and Process* responsibilities are among the most important of data steward responsibilities. Through teamwork, facilitation, and consensus building they form the core of a governance organization.

Program Development Processes

Designating Accountabilities and Responsibilities



Program Development Processes

Designating Accountabilities and Responsibilities

THE MANAGEMENT STRUCTURE

Responsibility, authority, and accountability collectively define the management structure. Responsibility is the obligation incurred by an individual in a specific role to perform the duties of that role. Authority is the power granted to an individual in a specific role to make decisions and direct others to follow those decisions. Accountability is the individual liability created by use of authority. Expression of decision rights addresses only authority. Responsibilities and accountabilities are designated to:

- Describe desired outcomes and results of data governance work.
- Explicitly express responsibility and accountability for outcomes.
- Ensure that responsibility, authority, and accountability are consistent and well aligned.

Remember that responsibility can be delegated and some decisions may be delegated, but accountability cannot be delegated.

RACI MATRIX

One technique that works well to describe management structure is a matrix that describes Responsibility, Accountability, Consultation, and Information (RACI) relationships of people with activities or outcomes. A partial example is shown below.

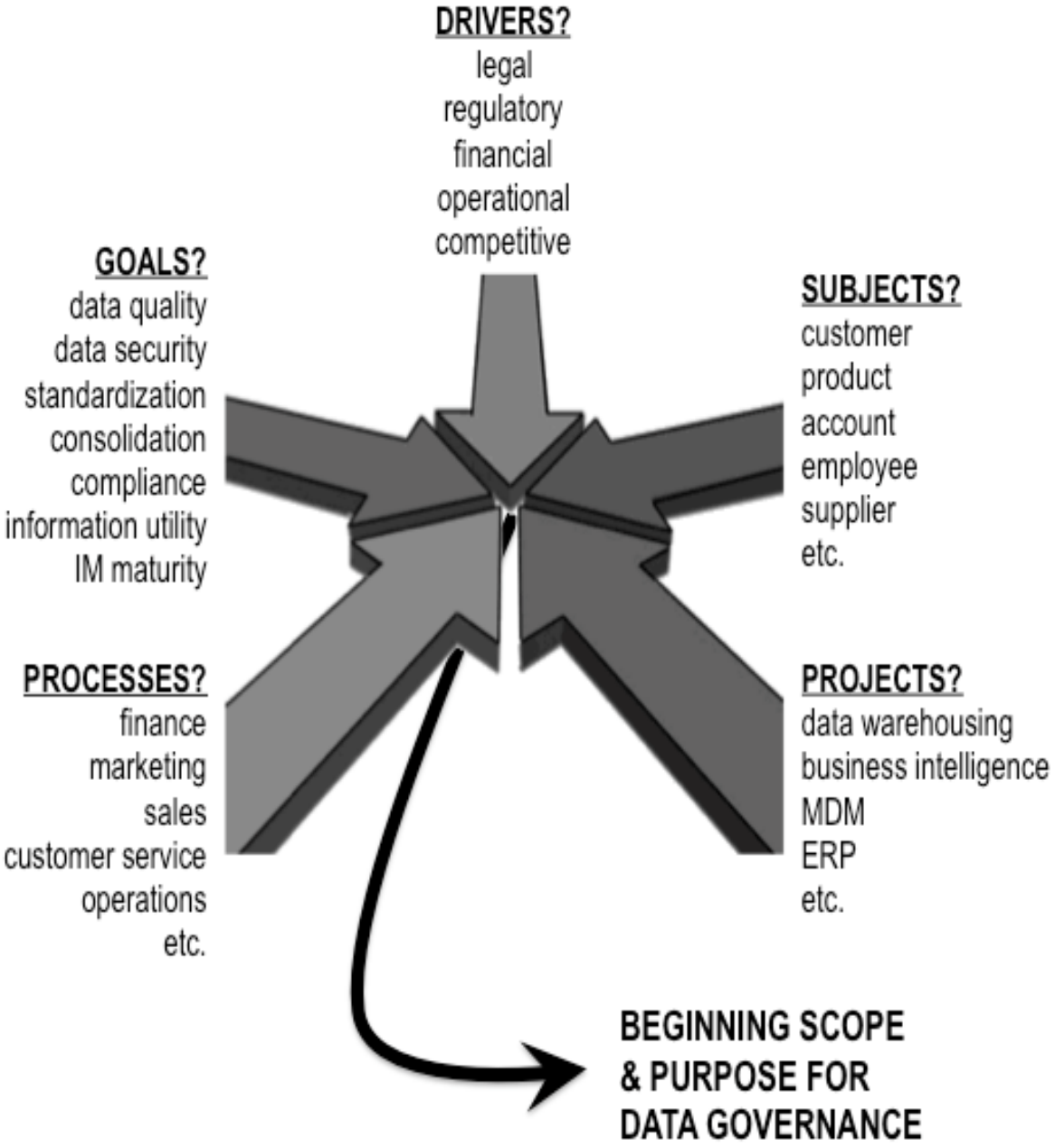
PATIENT DATA RACI	Data Executive	Data Owner	Data Steward	Data Custodian	Knowledge Worker	External Regulator
HIPAA Administrative Safeguards	R/A	C/I	C	C	I	I
HIPAA Physical Safeguards	C/I	R/A	C	I	I	I
HIPAA Technical Safeguards	C	C	A	R		I
Risk Analysis	A	R	C/I	C/I		
Compliance Monitoring	I	C/I	R/A	I	I	
Data Quality Assessment	I	C	R/A	C	C	
(continue desired outcomes)	(continue RACI mapping)					

Module 5

Building a Data Governance Program

Getting Started

Where to Begin?



Getting Started

Where to Begin?

START SMALL AND GROW SYSTEMATICALLY

Where to begin? This may be the most vexing question when starting a data governance program. Enterprise data governance can be incredibly complex with so many variables, dimensions, and details that it appears to be an impossible job. To avoid this sense of "boiling the ocean" you'll need to start small and grow systematically.

Define initial scope that is small enough to be achievable – limiting the number of drivers, goals, and subjects. Gain experience and create some success. Then grow the program by expanding the scope incrementally. To contain the scope you will have to make hard decisions – deciding to not immediately address things that are important and that may be urgent. Creating a data governance roadmap – a growth plan with a timeline – can help to control creeping scope.

SETTING SCOPE

Begin scope setting with the question of motivation. Is the desire for data governance motivated by business pressures (legal, regulatory, financial, etc.) or by projects where data quality is a success factor? Consider this question carefully …

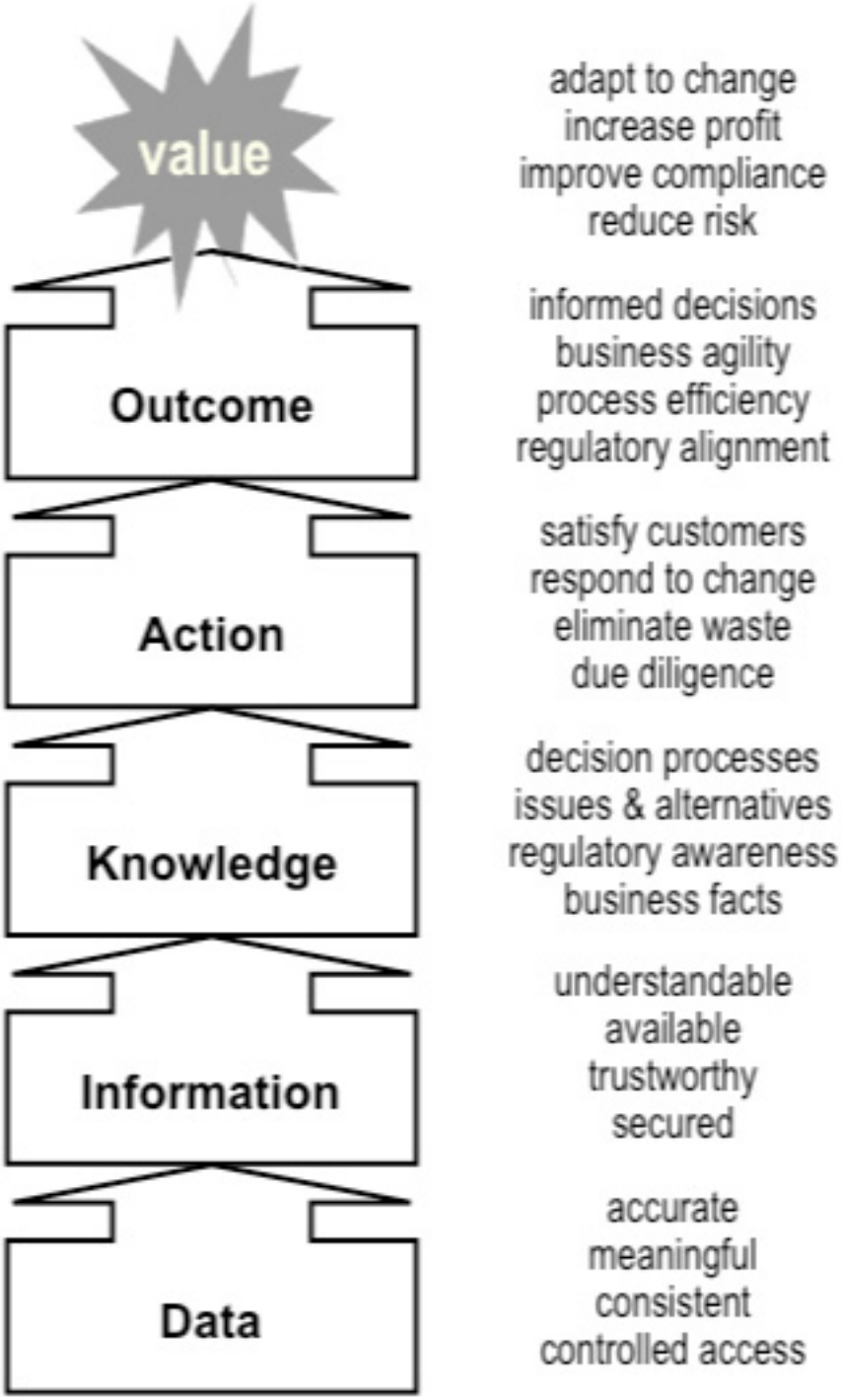
- If the answer is *both pressures and projects* then you'll need to make a decision. Choose to focus on one as the initial motivator and defer the other to a later increment.
- If the answer is *business pressures* then limit the scope to one driver, or to a small number of drivers that have natural affinity. Addressing legal and regulatory pressures simultaneously, for example, makes sense. Financial and competitive are also logically connected. Legal and competitive, on the other hand, don't have the same degree of connectedness.
- If the answer is *projects,* ideally limit the scope to a single project. If that isn't practical, don't expand beyond two projects. And be sure that the two projects are logically connected – data warehousing and BI, data warehousing and MDM – or a similar combination.

LIMITING GOALS, SUBJECTS, AND STAKEHOLDERS

Whatever your decisions about pressures and projects, it is likely that you'll want to address multiple subjects. Again, limit initial scope to one or two subjects and defer others until later. Similarly, it is probable that you'll have multiple goals. Once again, set limits and seek affinity among multiple goals. Finally, consider the number of processes affected and the corresponding size of the stakeholder population.

Planning and Preparation

The Business Case



Planning and Preparation

The Business Case

GOVERNANCE RATIONALE

The data-to-value chain describes a structure that is useful to define the business case for data governance. Start at the top of the chain with business value and trace downward to arrive at business dependency on data:

- Business value is created by increasing profit, reducing cost, improving regulatory compliance, reducing risk, and adapting to change. Which of these are among your data governance goals?
- Positive business outcomes that drive business value depend upon informed decisions, business agility, process efficiency, and regulatory alignment. Which of these resonate with your business executives and managers?
- The right actions cause positive business outcomes – satisfying customers, responding to change, eliminating waste, auditing compliance, performing due diligence for legal, regulatory, and financial decisions, etc. Which of these are among the goals of your business executives and managers?
- Reliable knowledge leads to confident decisions and taking the right actions. Good decisions occur when they are fact-based decisions with awareness of rules, regulations, risks, issues and alternatives. To what extent does this create a challenge for your decision makers?
- Good information is essential to aware and fact-based decision processes? Information must be understandable, available, and trustworthy. But it must simultaneously be secure and sensitive to privacy considerations. How well does your information measure up?
- Data is the raw material from which information is derived. Good information is only possible when data is meaningful, accurate, and consistent. Information security and privacy needs are only met when access to data is controlled. How effective are your data management practices in meeting these needs?

Building the Team

Communication and Coordination

	Data Owners	Data Stewards	Data Specialists	Data Providers	Data Consumers	Stakeholders - Legal & Regulatory	Stakeholders - Financial & Competitive	Stakeholders - Operational	Customer Subject Interested Parties	Product Subject Interested Parties	All Business Management	All IT Management
Data Governance Organization												
Data Management Principles												
Data Policies & Practices												
Data Related Alerts & Events												
Data Governance Issues												
Data Quality Metrics & Measures												
Data Stewardship Training												
Data Ownership Training												
Data Custodianship Training												

what to communicate
when to communicate
how to communicate
two-way communications
publish & subscribe

Building the Team

Communication and Coordination

SHARING INFORMATION

Teamwork depends on information sharing. Consciously consider and actively plan communications.

Identify the topics – organization, principles, policies, events, issues, training opportunities, etc. – for which information sharing is needed.

Identify the people who need to receive information – governance team members, stakeholders, those involved in related initiatives and projects, broad business management community, the broad IT community, external partners, regulators, etc.

For each combination of topic and audience plan the *what, when, and how* of communications.

TWO-WAY COMMUNICATIONS

Remember that communication is a two-way street. Be sure to include methods to receive comments and feedback.

SELF-SELECTED COMMUNICATIONS

For some kinds of communications each individual may want to make their own choices of what to receive. A publish-and-subscribe model for data governance communication makes self-selection practical. As a side effect it provides a proxy method to measure the level of governance interest and engagement.

Module 6

Summary and Conclusion

Appendix A

Bibliography and References

Appendix B

Exercises

Exercise 2: Decision Rights

A Decision Model

THE GOAL

The goal of this exercise is to construct a simple decision model in a matrix form. One axis of the model lists data governance roles and the other lists decision areas. The completed matrix will identify for each decision area:

- To which role decision rights should be assigned
- The decision style that is most appropriate
- If decision-making authority can be delegated

For each decision area listed, check one role for assignment of decision rights then check the appropriate box for each of the decision style and delegation questions.

Exercise 2: Decision Rights

A Decision Model

	ROLES					DECISION STYLE?	DELEGATION?
	Data Executive	Data Owner	Data Steward	Data Specialist (Custodian)	A Key Data Stakeholder		
Interpret AML-CFT[1] to decide data and reporting requirements						☐ Autonomous ☐ Informed ☐ Influenced ☐ Participative	☐ No ☐ Yes
Decide how to secure employee and payroll information when transmitting direct deposit data to banks						☐ Autonomous ☐ Informed ☐ Influenced ☐ Participative	☐ No ☐ Yes
Decide when sales transaction data should be purged from the data warehouse						☐ Autonomous ☐ Informed ☐ Influenced ☐ Participative	☐ No ☐ Yes
Determine when and how class words *code, indicator, date, address,* and *amount* are abbreviated in data names						☐ Autonomous ☐ Informed ☐ Influenced ☐ Participative	☐ No ☐ Yes
Choose between entity-relationship data modeling and dimensional data modeling for a data mart design.						☐ Autonomous ☐ Informed ☐ Influenced ☐ Participative	☐ No ☐ Yes
Decide which positions in the Personnel Office are authorized to view employee social security numbers.						☐ Autonomous ☐ Informed ☐ Influenced ☐ Participative	☐ No ☐ Yes
Make the final decision about the enterprise- standard definition of *customer*.						☐ Autonomous ☐ Informed ☐ Influenced ☐ Participative	☐ No ☐ Yes
Approve or deny external auditor requests for access to data.						☐ Autonomous ☐ Informed ☐ Influenced ☐ Participative	☐ No ☐ Yes

[1] Anti Money Laundering (AML) and Combating Financial Terrorism (CFT) rules and regulations.

