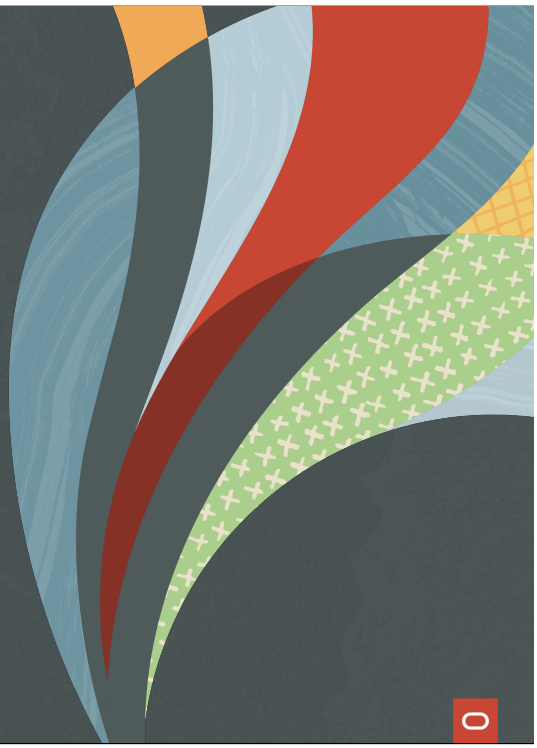
Data Strategy: From Vision to Reality

November 8th, 2023



Agenda

- Introductions
- What is Data Strategy?
- From Vision to Reality
- Something to Take Away
- Q&A

What do we want you to take away from today's session?

The new oracle is thinking about data strategy – focusing on a business outcome perspective
And the major components of the data strategy are: Vision, Outcomes, People, Processes, and technology

What can we share in 45mins?

It is not just technology – the balance between the components is a crucial element of the data strategy
SHAPES: Verify my DS with me – Create a complete DS – Justify the need for a DS – Elaborate on an area of the DS

Hi everyone this session is about Data Strategy and turning vision into reality but really, it's about business.

Introduce the slide build
Business challenge meets data and become outcomes at the intersection between data and business.

Your Business Vision cannot be disconnected from your Vision for Data, they really must be a joint Vision, so let's talk Vision.

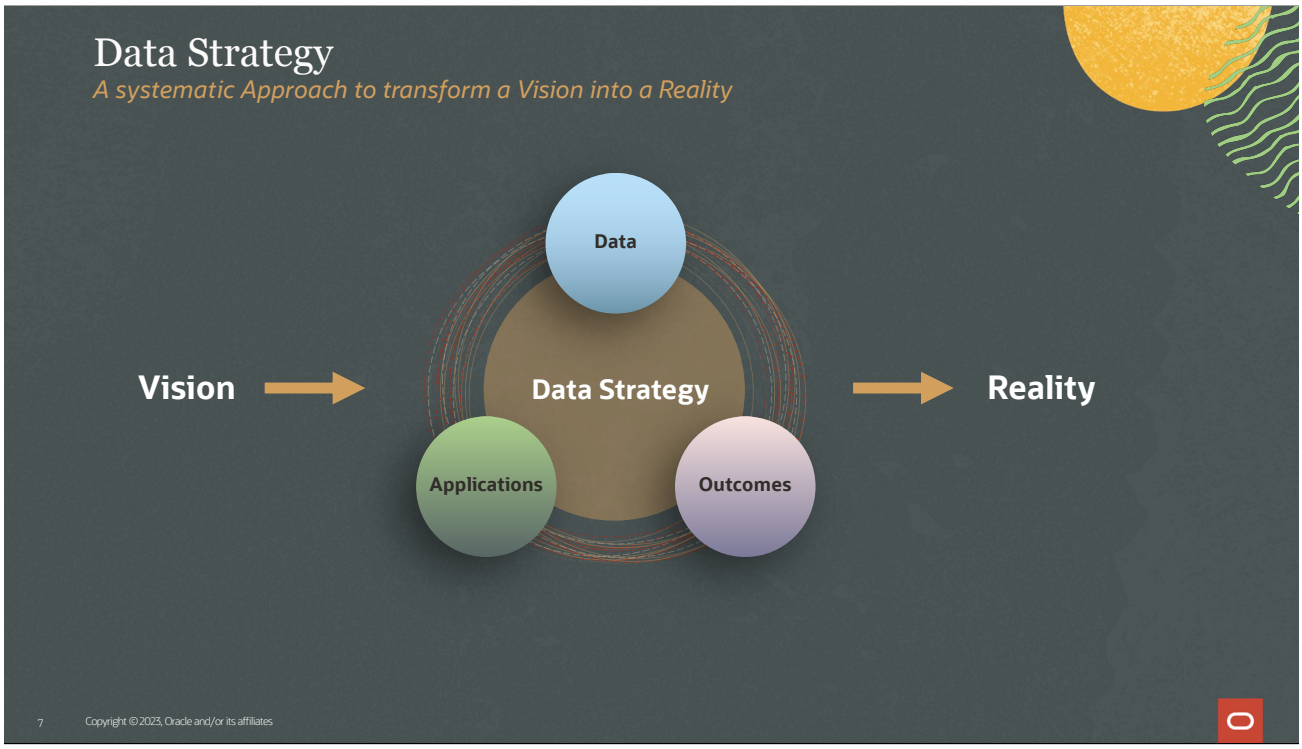
Speaker Narrative:

There must be clarity in understanding what the strategic, mid- and long-term, business goals are. Which of them can be defines as priority initiatives, and which will benefit from a better use of data.

Common misunderstanding:
- Data strategy != data MANAGEMENT strategy, a DMS is part of a DS
- Data Strategy != data governance, DG is part of a DS

Data Management Strategy (Wikipedia)
Defines tools, procedures, and methods to manage the lifecycle of each data asset (how data is ingested, secured, aggregated, filtered, policy enforced, access regulated, etc.)

Data Governance (Wikipedia)
Defines the policies for data management to ensure that high data quality exists throughout the complete lifecycle of the data, and data controls are implemented that support business objectives. The key focus areas of data governance include availability, usability, consistency, data integrity and data security, and standards compliance. The practice also includes establishing processes to ensure effective data management throughout the enterprise, such as accountability for the adverse effects of poor data quality and ensuring that the data which an enterprise has can be used by the entire organization.

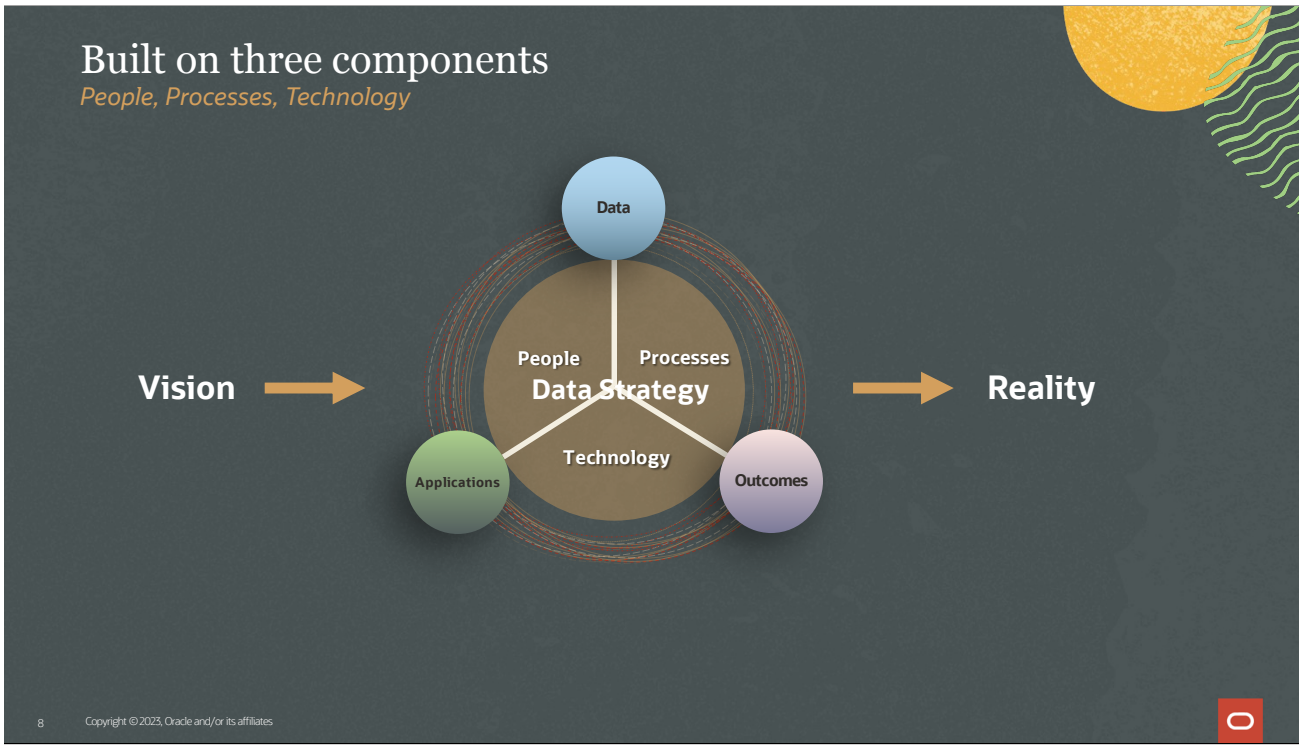


Speaker Narrative:

The generic term Applications defines everything, with or without human interaction, that creates and maintains data. From Online Stores to CRM systems to IOT digital twins, independent of the technology they rely open, Applications are a key component.
Data, once generated, needs to be secured, processed, refined, aggregated, made available to user, etc etc. This is a science in itself. It becomes already apparent how deep the interactions between the areas are, e.g., a microservices architecture has a deep impact on how data is stored, secured and made available to create outcomes.
Out of Data we create Outcomes, the real value behind the existence of IT beyond the very basic “run the shop”. Also, here very clear are the ties between the choices made in the Data area and the speed and quality of the produced Outcomes.
The definition of the three components and how these relate to each other is the Data Strategy.

A data strategy refers to the plan and approach an organization takes to manage, analyze, and utilize data. It defines the goals, objectives, and priorities for the organization's data management and provides a framework for decision-making and resource allocation.

<next slide>



Speaker Narrative:

A Data Strategy transforms into real and tangible items what we call a Vision. The concept of the Vision of really crucial: although a Data Strategy can be reverse engineered from an existing IT estate, it is –for the purpose of addressing the compelling needs of an organization- to understand what is the Vision for using Data that is in the minds of the CIO/CTO/CDO.

Introduce the slide build

Once the Vision is understood, it becomes much easier to analyze and structure the content of the Data Strategy.

We approach the Data Strategy discussion by dividing it into three “buckets”: everyone clearly sees the reason for a Technology/Architecture grouping. This is where Oracle has is major focus: delivering excellent technology over a large set of possible deployments (on-prem, hybrid, private, regulated, multi- or public cloud) but to fully define the strategy we need to be able to talk about Organization/People and Processes and how choices in one “bucket” effect structures in the other two

An effective data strategy should be aligned with the overall business strategy and should be flexible enough to adapt to changing business needs and emerging technologies. It should also be regularly reviewed and updated to ensure it remains relevant and effective.

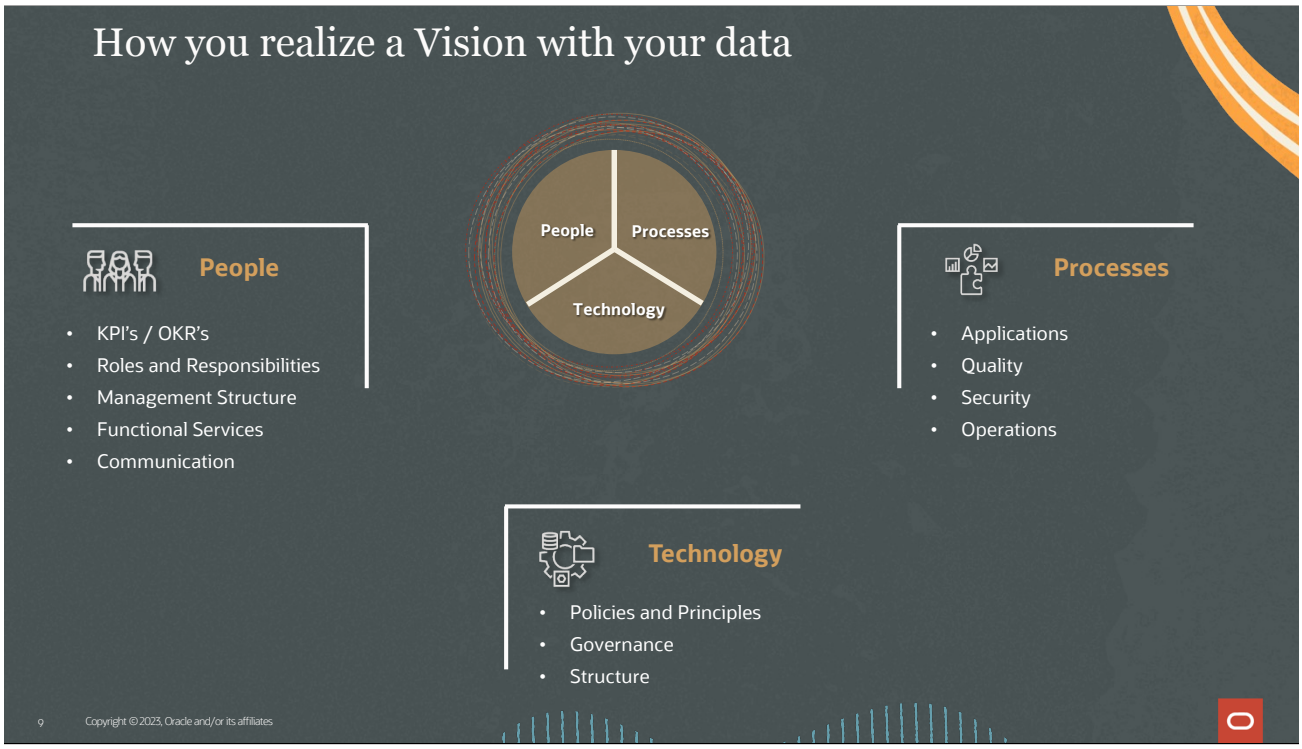
<next slide>

Notes

1. Data Strategy is how Organizations turn their common Vision of deriving measurable business value from their Data and Information Assets into reality

2. To be executable such a Strategy must be broader than just Technology and include People and Organizational capabilities

3. The Capabilities defined and assembled must be complete enough to span processes for Data Discovery, Persistence and Use of Information



Speaker Narrative (his Slide is is the Level 1 description)

In addition to Definition, encapsulation and articulation of the Vision a we boiled down everything to three main areas and a well-designed Data Strategy should consider the following elements:

Introduce the slide build

People
How People and Organizational structures will deliver the Vision and execute the Data Strategy. The roles, structures, skills and change management needed to support effective data and analytics.
From 'Traditional Organizations' (Top-Down hierarchy, Bureaucracy, Detailed Instructions and Siloed) to 'Information Centric Organizations' (Quick Changes Flexible resources, Teams built on around end-to-end accountability, Leadership teams enable teams task resolution and actively remove obstacles)

Process
How Enterprise Process both support and are defined and adapted to enable value delivery from the Data Strategy. Data and analytics process that discovers, documents and understands the flow and use of information across the business and its systems using an "as is" and "future state" view.
This is coupled with an understanding of how data is reused across processes and how decisions are modeled in the context of a process and outcome.

Technology

How Technology capabilities, standards and policies are described and built to deliver the Data Strategy. Enterprise Information Architecture is the framework that defines the technology, information-centric principles, architecture models, standards, and processes that form the basis for making information technology decisions across the enterprise. EIA translates the business requirements into informational strategies and defines what data components are needed by whom and when in the information supply chain.

<next slide>

Definitions

Vision
One that clearly aligns the data and analytics program effort with business outcomes and facilitates prioritization of that effort.

Strategy
One that supports the vision, building on small, business-value-generating efforts, and that captures all the opportunities and challenges for the short- and long-term outcomes — those that relate data and analytics to business processes instantiated in applications that are destined to deliver a business outcome.

Successful definition and articulation of such a Vision and encapsulation and adherence to a realistic set of Principles within a cohesive architecture to support their delivery will provide a sound basis to deliver the Infrastructure and Business capabilities of the Data Management Platform

Technology
Enterprise Information Architecture is the framework that defines the technology, information-centric principles, architecture models, standards, and processes that form the basis for making information technology decisions across the enterprise. EIA translates the business requirements into informational strategies and defines what data components are needed by whom and when in the information supply chain. Furthermore, it addresses the need of the business to generate and maintain trusted information that is derived by relevant data components.
Information Architecture in the context of enterprise architecture (EA) focuses on treating Information as an enterprise asset. This includes defining principles, definitions, standards, models, and information flows to ensure that information enables information sharing and rapid business decision making.

Policies and Principles
One of the most important deliverables from the Architecture is a set of organization and architecture principles and policies that act as a guiding force for every architectural decision throughout the process. While combining the Vision and Principals can serve as the starting point for developing the future state architecture, the reference models and architectures and current state analysis can be instrumental in highlighting the gaps between the current and future states.

Governance
Data governance is the specification of decision rights and an accountability framework to encourage desirable behavior in the valuation, creation, storage, use, archival and deletion of data and information. It includes the processes, roles, standards and metrics that ensure the effective and efficient use of data and information in enabling an organization to achieve its goals.

Structure
Conceptual Architecture This includes a more detailed level of the Architecture Overview Diagram for the Information Architecture , the

description of the data classification criteria, and data domains, and it includes a high-level description of the capabilities, key architecture principles for EIA, and architecture decisions. It also includes IT governance and Information Governance topics.
Logical Architecture This contains the logical EIA description, the Information Reference Architecture Logical View diagram (including the data domains in the context of this diagram), key aspects of the enterprise information integration, and a high-level description of the information services.
Capability Model This is a detailed description of the Information Architecture building blocks and their functionality including a detailed description of the Information Architecture components, a service description (for instance MDM Services, Data Management Services, Metadata Management Services and so on), an information-centric Component Relationship Diagram, and Component Interaction Diagrams (including some exemplary scenario descriptions).
Service Model This includes the Logical Operational Model (LOM) and Physical Operational Model (POM); information-centric Operational Patterns; Service Qualities applicable for information services; the Cloud Computing delivery model for information services; best practices and integration patterns.

Process
Data and analytics process that discovers, documents and understands the flow and use of information across the business and its systems using an "as is" and "future state" view. This is coupled with an understanding of how data is reused across processes and how decisions are modeled in the context of a process and outcome.

Applications A company's operations are supported by applications that automate key business processes. These include areas such as sales, service, order management, manufacturing, purchasing, billing, accounts receivable, and accounts payable. These applications require significant amounts of data to function correctly. This includes data about the objects that are involved in operational transactions, as well as the operational data itself. For example, when a customer buys a product, the transaction is managed by a sales application. The subjects of the transaction are the customer and the product. The operational data are the time, place, price, discount, payment methods, etc., used at the point of sale.

Quality
A critical function of governance is to ensure data quality. Data Quality Management is an approach in making and keeping data in a state of completeness, validity, consistency, timeliness, and accuracy, that makes it appropriate for a specific use. Data must be fit for purpose and accurately reflect the real world entities and facts for which they represent.
Many factors can adversely affect the quality of data, including incomplete or inaccurate data entry, inconsistent representation of data fields across solutions, and duplication of data within or across solutions.
In addition, normal business/IT events such as new products/services, mergers and acquisitions, and new applications, place more pressure on the quality of the data utilized by users, business process, services, and systems. Therefore, data quality requires being pervasive and continuous to make sure that enterprise data does not decay and lose value.

Security
Data security is often characterized by the ability to ensure confidentiality, integrity, and availability. It aims to protect data from unauthorized disclosure and modification, while maintaining full availability to authorized users. Access control is critical to this endeavor in order to clearly define who the authorized

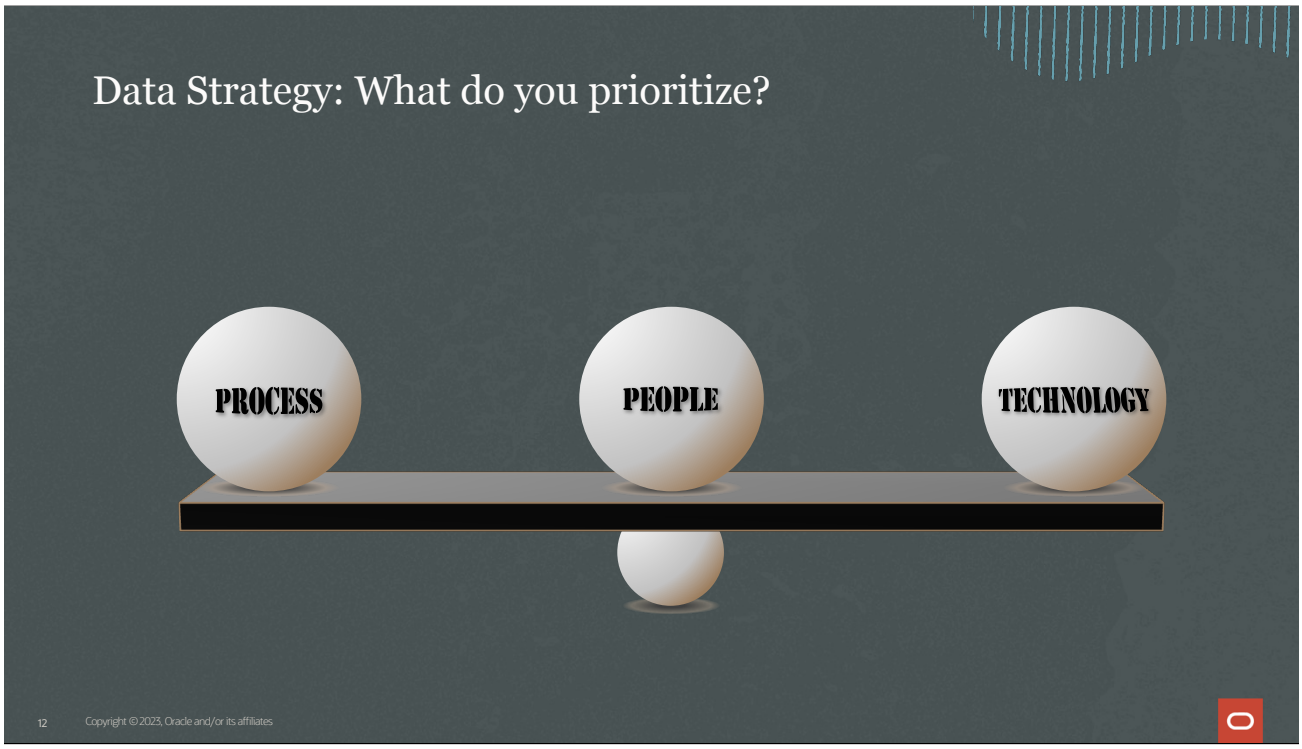
users are, and to enforce confidentiality and integrity restrictions on enterprise data. User identities and attributes are used to determine access privileges, and access control policies determine what privileges are required to perform operations on the data. Auditing capabilities allow the organization to review operations that have been performed, to know when they were performed, and by whom.
Data confidentiality and integrity are also supported by encryption and digital signatures. Encryption protects data in transit, either via transport layer encryption (TLS), by message level encryption (e.g. XML-Encryption and WS-Security), or a combination of both. Encryption can also protect data at rest. It can be used to protect media such as disks and tapes from low level read operations that can bypass application or database access controls. An effective data security architecture will protect data in all three states: in transit, in use, and at rest.

Operations
The Data Technology Strategies being deployed by many enterprises today represent an on-going shift to move from locked down, siloed, monolithic Data Architectures to a combination of centralized Data Platforms and highly distributed (Mesh and Fabric) and shared services environments that makes the management and monitoring of the modern data and analytics more challenging and complex. IT Organisations facing an increased demand for services and composite data platforms require a shift in system diagnostics and the approach to the monitoring of services. The Architecture and runtime environments for these new services require a management and monitoring framework to cope with a more dynamic and escalating technogically complex environment.

People
The roles, structures, skills and change management needed to support effective data and analytics. From 'Traditional Organizations' (Top-Down hierarchy, Bureaucracy, Detailed Instructions and Silo'ed) to 'Information Centric Organizations' (Quick Changes Flexible resources, Teams built on around end-to-end accountability, Leadership teams enable teams task resolution and actively remove obstacles)

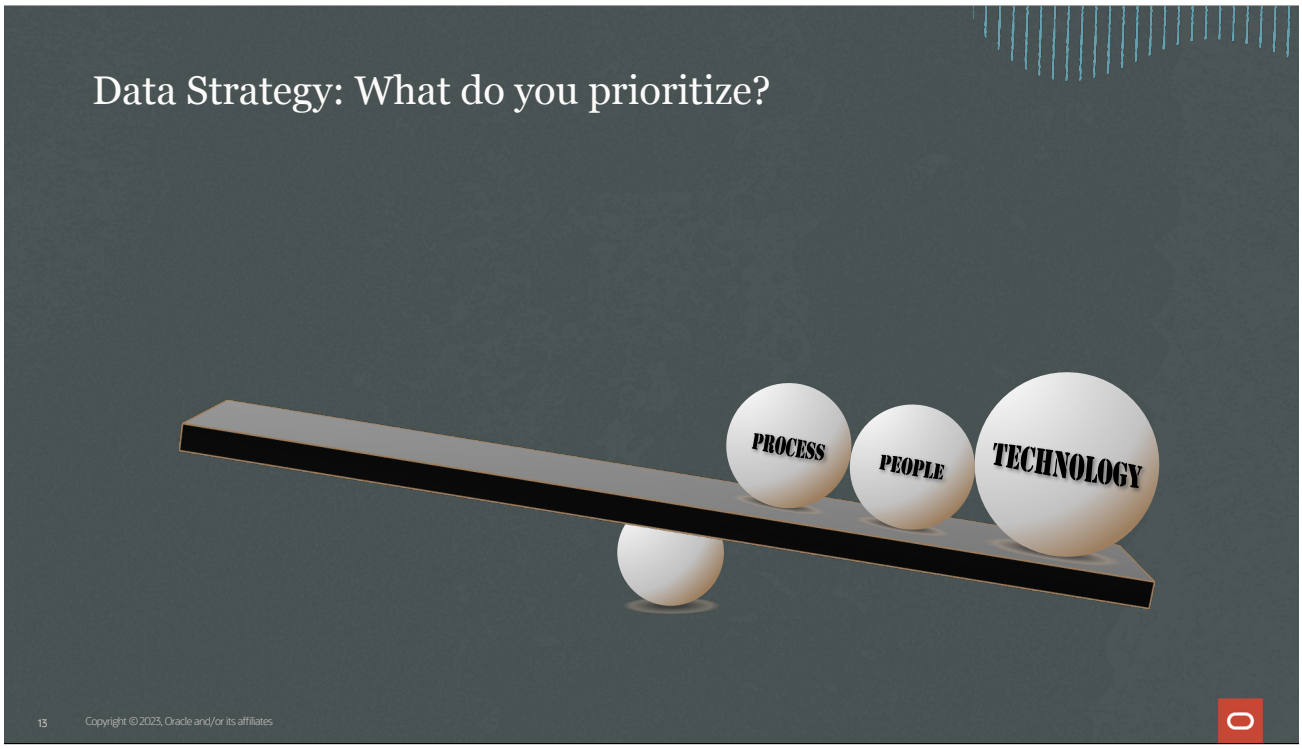
KPI's / OKR's Focusing on a technique to take a business outcome or goal and to break it down into its constituent parts, including decision, business process, performance targets, operational key performance indicators (KPIs) and analytics, and finally the necessary supporting data need. A means to demonstrate to business users how the use of data and analytics drives better business outcomes.

From Vision to Reality



Speaker Narrative:

So how do you prioritize from People, Process and Technology? We know they are all important but…..



Speaker Narrative:

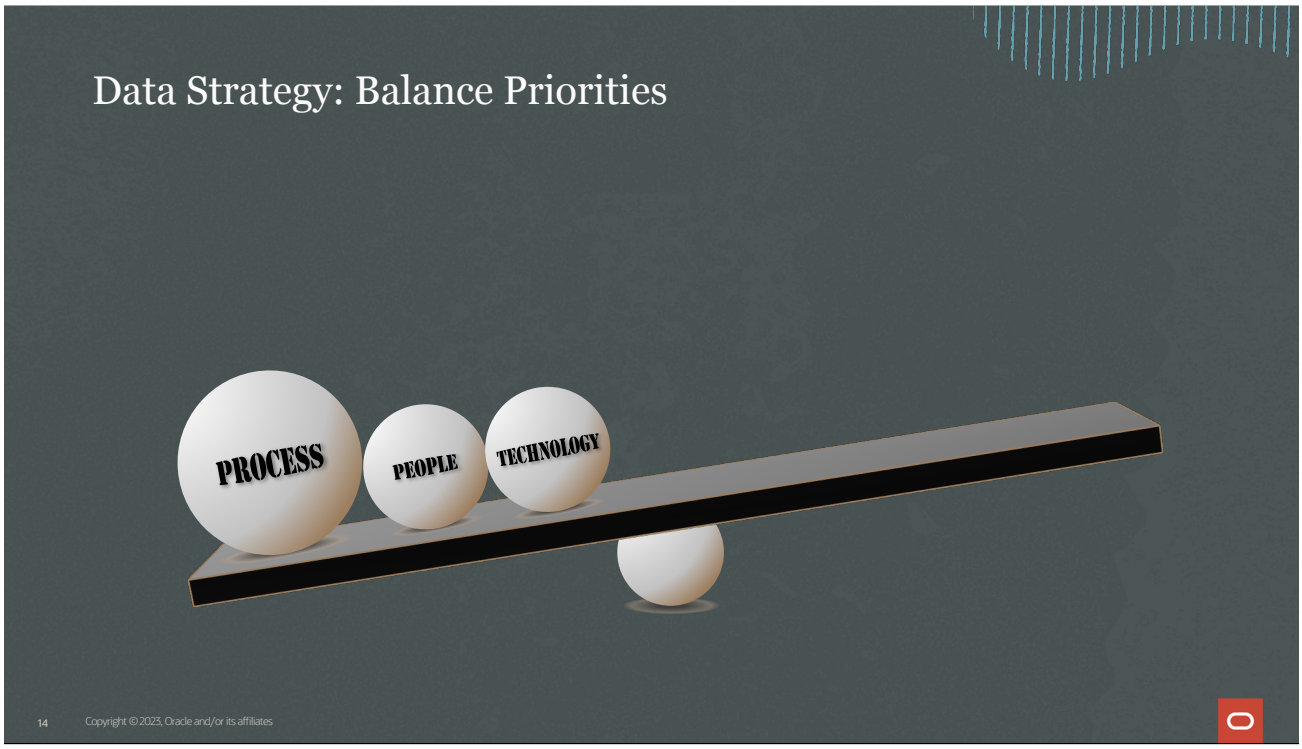
Which is more important? It's technology, right? It must be, for a start we are at a technology session in a technology conference, so let's prioritize technology!

If you prioritize technology, then people and processes will become technology centric and less business oriented leading to a separation between business vision and technology.

There are quite a few examples of this happening from the approach often taken during the period before Covid when it was felt by some organisations that it was too difficult to unpick and change legacy stacks and that a new 'clean' stack should be built.
These were often labelled as 'Digital' and they were 'Transformation' oriented. Typically they focused on a technology first approach such as 'Everything will be blockchain or you can substitute 'Everything will be Hadoop' here as well and didn't consider the people and process impacts accordingly. The result a lot of failed initiatives and wasted time and money.

If you are here, how do you redress the balance?

https://www.maersk.com/news/articles/2022/11/29/maersk-and-ibm-to-discontinue-tradelens



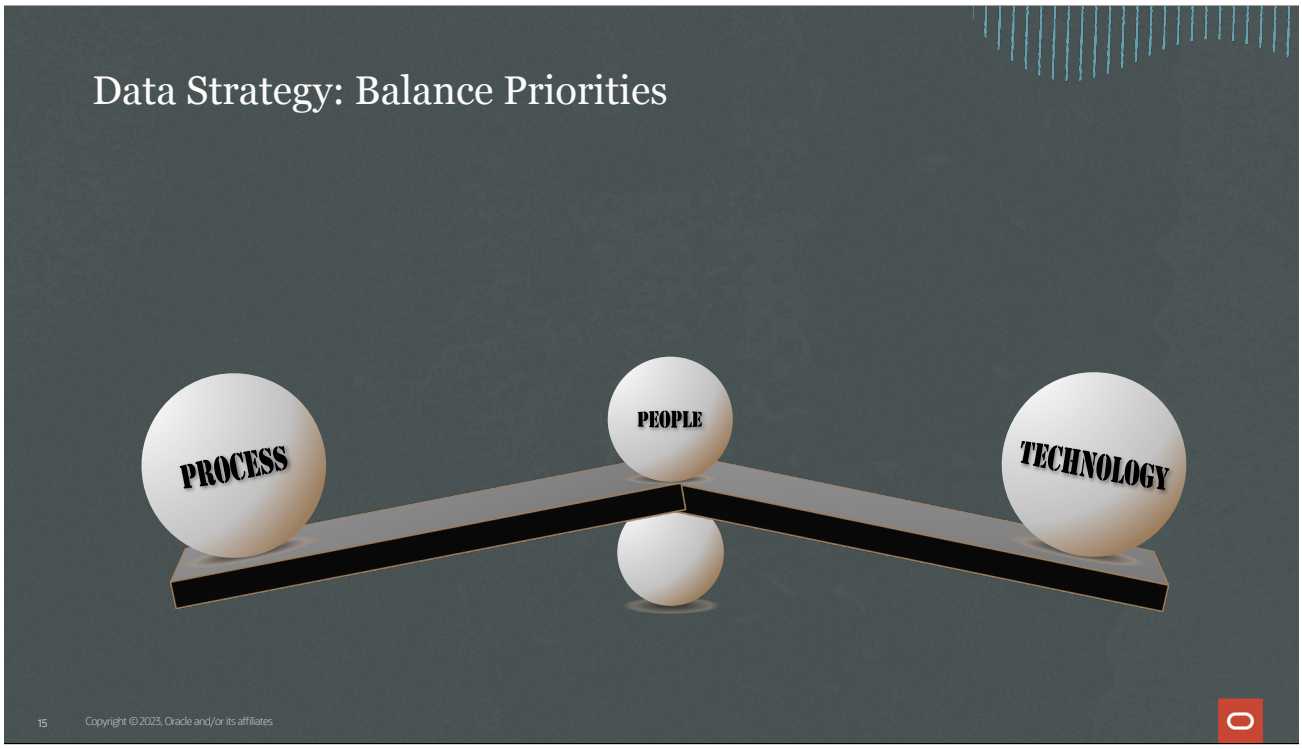
Speaker Narrative:

<<If you prioritize process, then people and technology will become process centric and less business oriented leading to the fact that although process reality has been achieved business reality and value have become separated and probably further away from vision.>> this is useless and a repletion of the previous

A good example of this is when you hear the phrase 'Ivory Tower Architecture'; where adherence to process becomes the absolute metric for success instead of business outcomes. This usually leads to phenomena like 'Shadow IT' and makes impossible to achieve a Data Strategy.

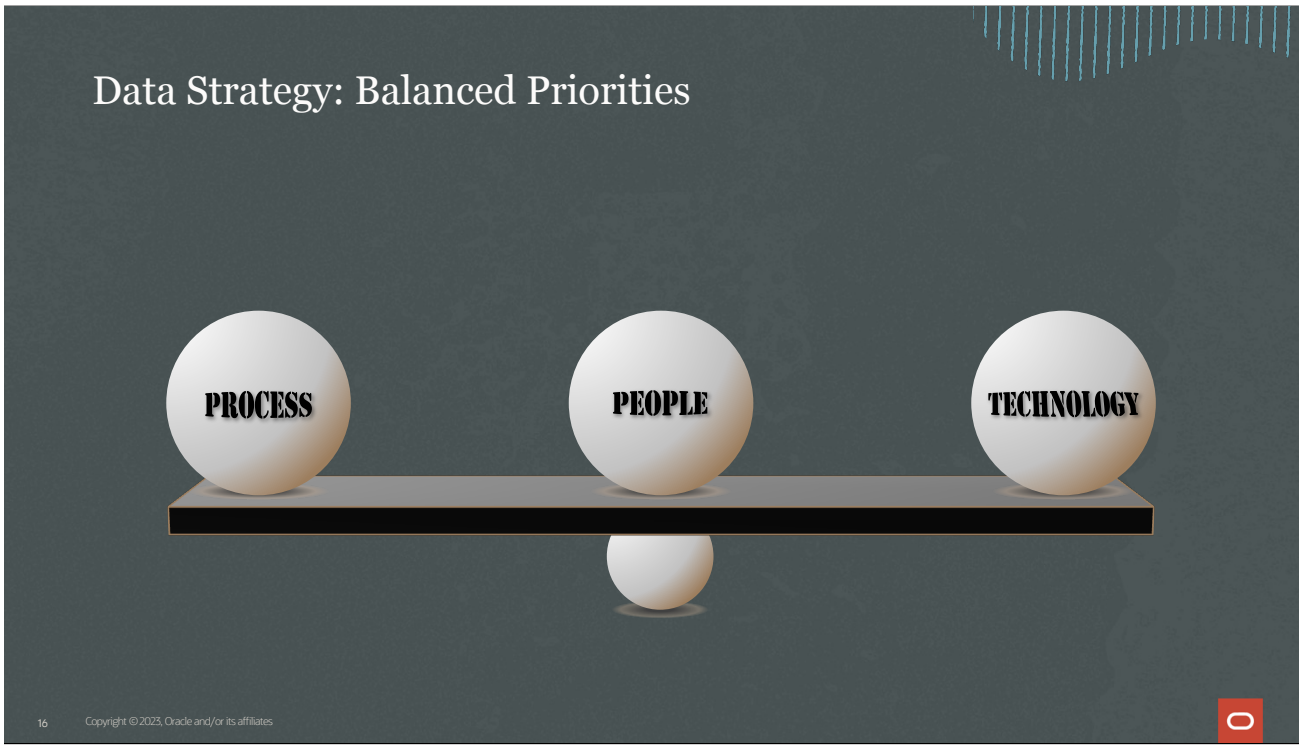
So if you are here, how do you redress the balance.

Introduce the slide build



Speaker Narrative:

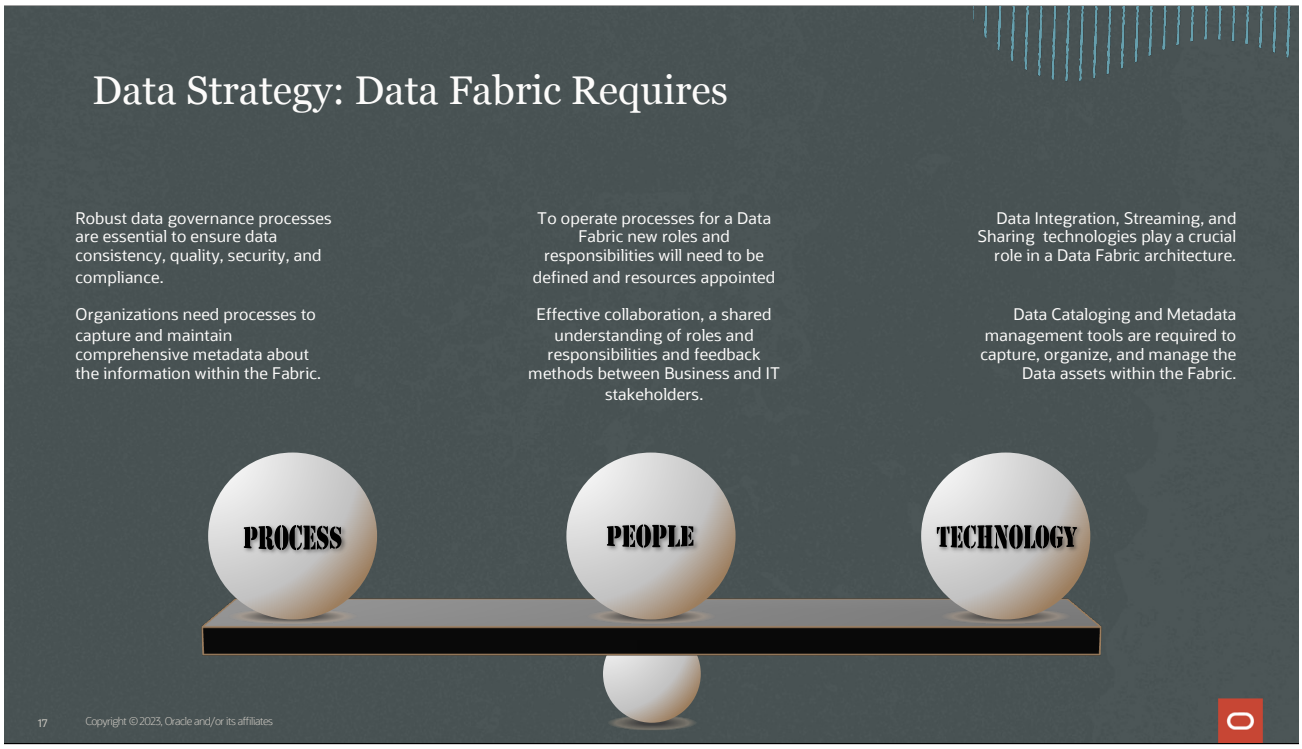
Interestingly the more typical mistake that is made is when both process and technology are prioritized and the people factors are de-prioritized or sometimes ignored, this is the worst of both worlds with typically a dogmatic process-led approach focused on technology adoption that disengages business use and users leading and low value business outcomes if any at all.



Speaker Narrative:

So

Introduce the slide build

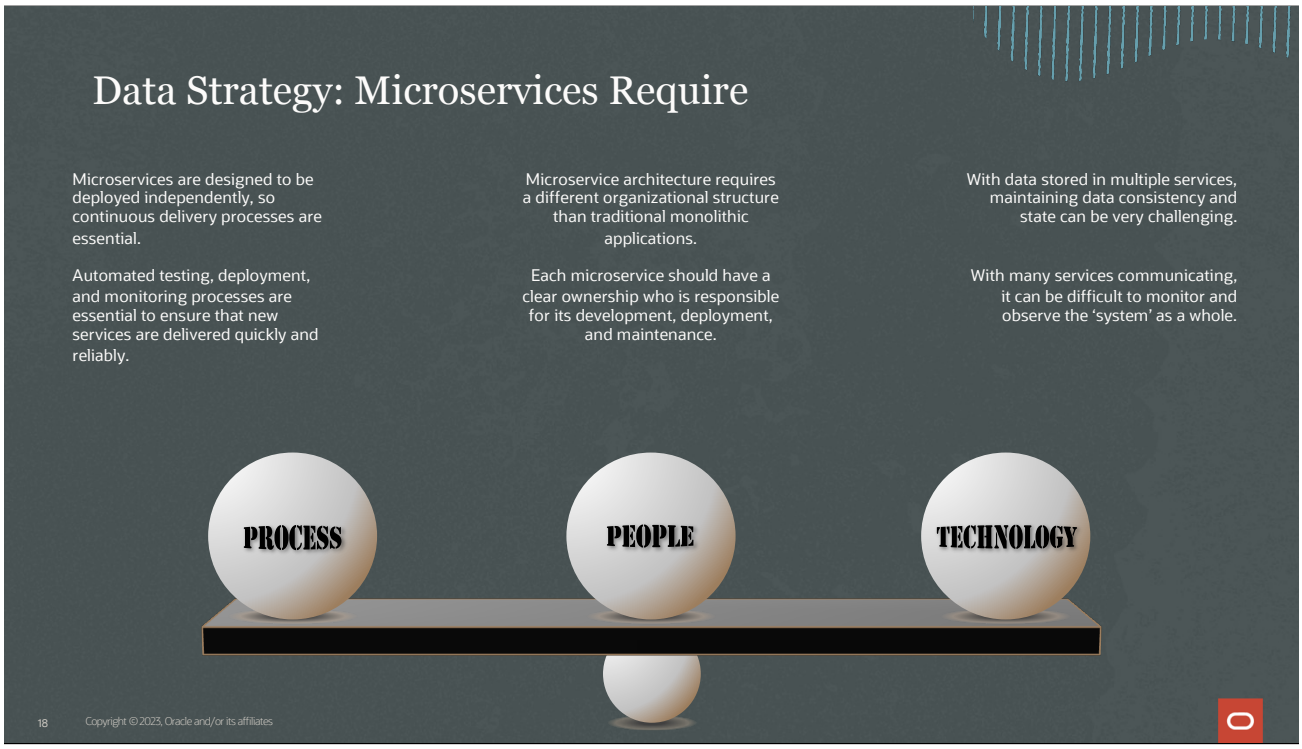


Speaker Narrative:

Introduce the slide build

Recommendations:

- Must be a top-down initiative.
- Prioritize a realizable scope, even if the Data-Fabric initiative may be enterprise wide a particular business domain might be particularly suitable for prioritization rather than a 'big-bang' pan-enterprise approach.
- Technology, Process and People factors must be balanced, whilst the focus may switch from one to the other during the initial design and implementation all are required for successful benefits realization.
- Define data governance policies, roles, and responsibilities early on to ensure the consistency and integrity of your data across the Data-Fabric

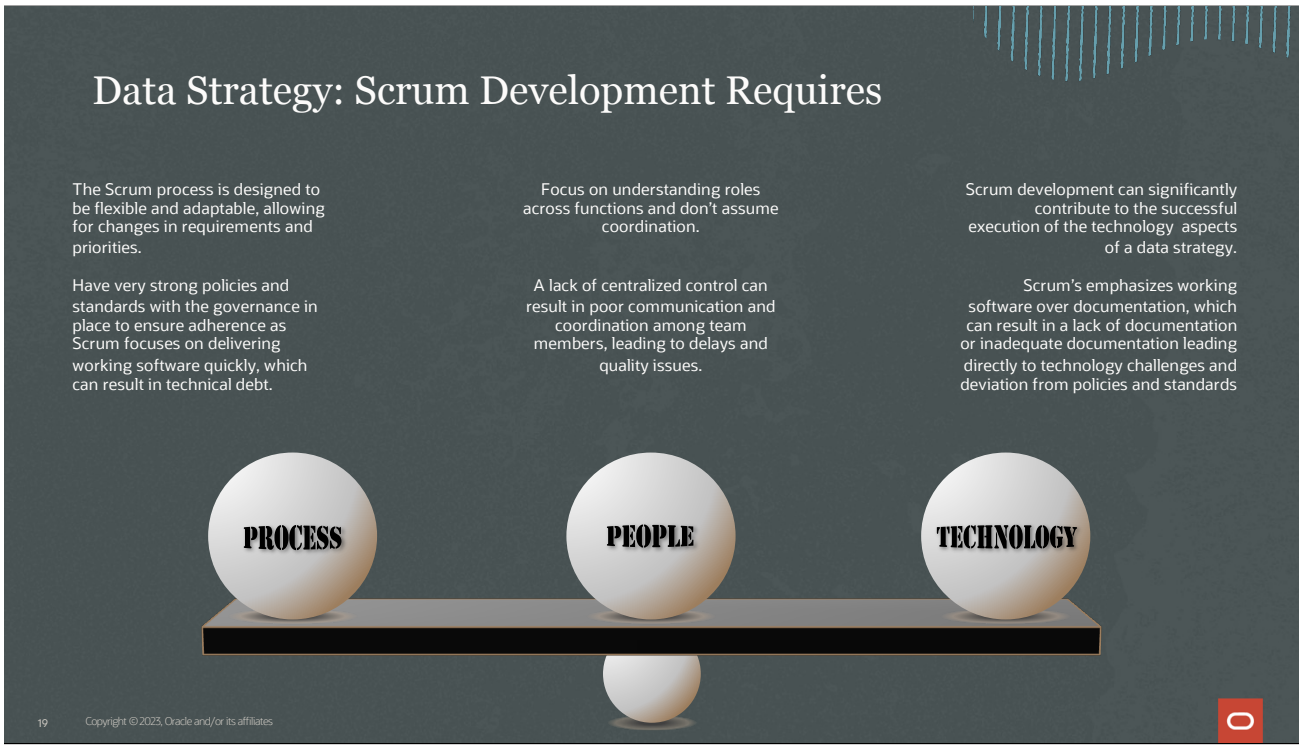


Speaker Narrative:

Introduce the slide build

Recommendations:

- Define requirements tightly, if requirements are not well-defined or incomplete, it can lead to a lack of clarity and direction for the development team, which can impact the quality of the final product . In addition if the team underestimates the amount of work that can be completed in a sprint. This can lead to burnout, missed deadlines, and lower quality work.
- Focus on understanding roles across functions and don't assume coordination. A lack of centralized control can result in poor communication and coordination among team members, leading to delays and quality issues.
- Have very strong policies and standards with the governance in place to ensure adherence as Scrum focuses on delivering working software quickly, which can result in technical debt.
- Documentation is still important! Scrum emphasizes working software over documentation, which can result in a lack of documentation or inadequate documentation. This can make it difficult for new team members to understand the project and can lead to problems in future operations and support.
- Understand and manage the risks around individual contribution as Scrum teams rely heavily on individual team members, which can be risky if a team member leaves the project unexpectedly.

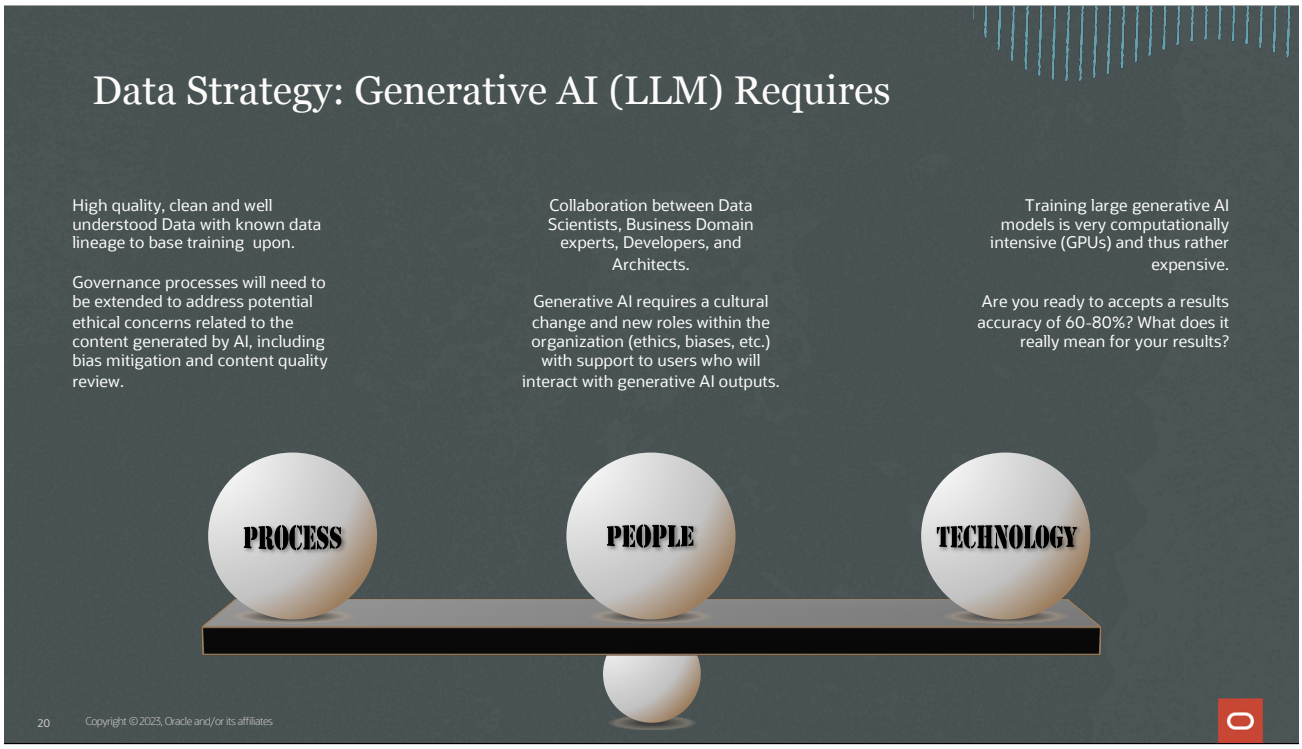


Speaker Narrative:

Introduce the slide build

Recommendations:

- Define requirements tightly, if requirements are not well-defined or incomplete, it can lead to a lack of clarity and direction for the development team, which can impact the quality of the final product . In addition if the team underestimates the amount of work that can be completed in a sprint. This can lead to burnout, missed deadlines, and lower quality work.
- Focus on understanding roles across functions and don't assume coordination. A lack of centralized control can result in poor communication and coordination among team members, leading to delays and quality issues.
- Have very strong policies and standards with the governance in place to ensure adherence as Scrum focuses on delivering working software quickly, which can result in technical debt.
- Documentation is still important! Scrum emphasizes working software over documentation, which can result in a lack of documentation or inadequate documentation. This can make it difficult for new team members to understand the project and can lead to problems in future operations and support.
- Understand and manage the risks around individual contribution as Scrum teams rely heavily on individual team members, which can be risky if a team member leaves the project unexpectedly.

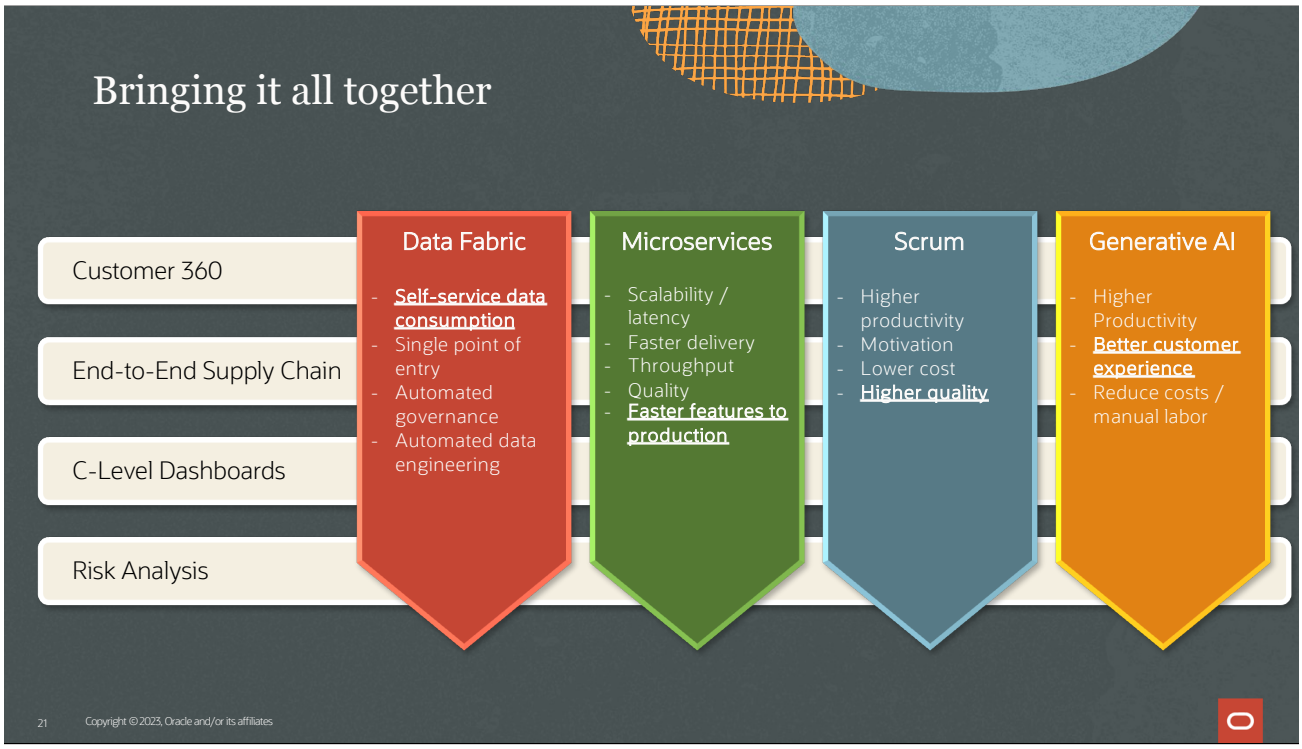


Speaker Narrative:

Introduce the slide build

Recommendations:

- Identify specific use-cases where generative AI can provide the most impact and prioritize. Tightly focus on the areas where automation, creativity, or personalization can enhance your products or services.
- Human review and quality control of generated content are vital to catch errors, biases, or inappropriate outputs that the AI might produce by problems caused by technology and process failings.
- Robust Data Governance including comprehensive data lineage capabilities, processes and tools will be required to ensure that the value of Generative AI is realized, poor Governance will potentially result in unanticipated outcomes that could affect the perception and perceived value of Generative AI in a business context.
- Continuous monitoring of Generative AI systems is essential. Having dedicated teams with responsible for tracking system behavior and addressing issues that arise is important for maintaining performance. Thoroughly document Generative AI processes, findings, and lessons learned. Set up monitoring mechanisms to track model performance, detect anomalies, and address issues quickly

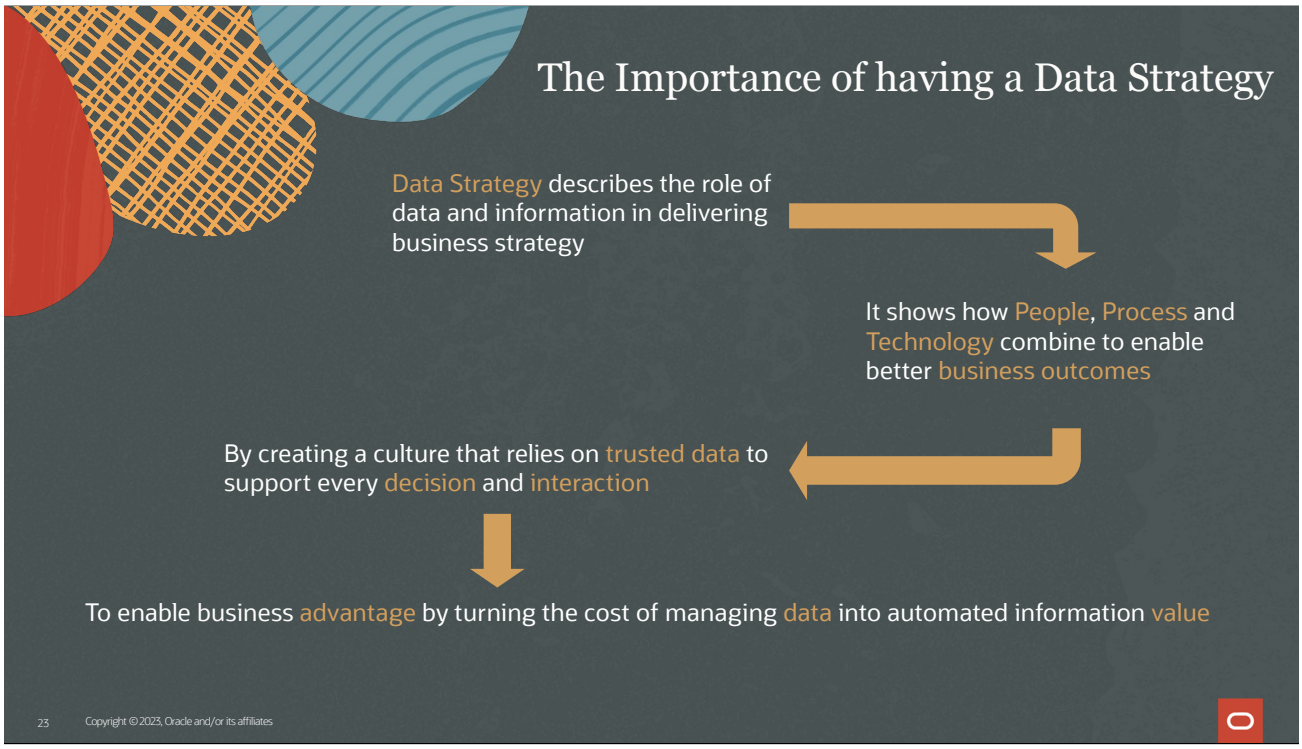


Speaker Narrative:

Introduce the slide build

We have talked on how the business outcomes in form of a vision must be the starting point for a sound data strategy discussion. We went into some examples on how to discuss technologies and strategies as part of such discussion, now it is time to bring things together again.
It is quite important, whatever the subject on the data strategy discussion "menu", to be aware how this support the achievement of the vision.
We listed in this slide 4 rather generic "business themes" that are a sort of "catch-all" stand-ins for a vision. We superimpose the four items we used as example before and recommend to pick, among their business value supporting characteristics, one as the "defining principle" for its adoption.
It is not important what and how, as long as we are in the clear on the impact of a specific choice.

Recap and Something to take away…



Speaker Narrative:

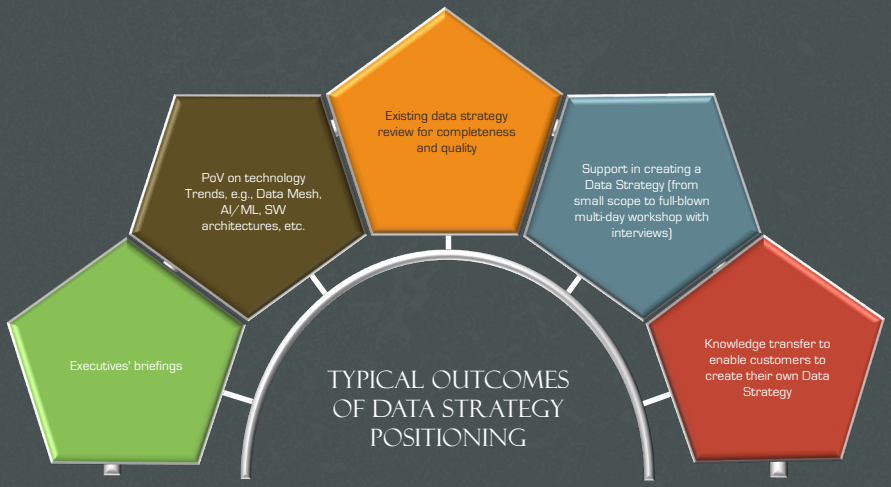
So these and a million more things are what we have to but why do we need a Data Strategy to do them…?
Well ask yourself this question 'Does my organization have a business strategy? If the answer is yes and the organisation uses or creates data then it needs a corresponding data Strategy'

Do we use data, do we turn it into information that we can use and we can automate? Could we do it better?

- Identify and bring together existing best practice(s).
- It is easy to be caught up by 'Fashionable Practice'; what works for one Organization might not be suitable for another.

- LET?S FINISH WITH BUSINESS OUTCOMES

Data Strategy: Typical Outcomes




ORACLE


Thank you!
27
Copyright © 2023, Oracle and/or its affiliates