Defining a data strategy

An essential component of your transformation journey

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All organizations engage with, operate on and leverage data every day across a variety of business functions. Those organizations that take a holistic approach to adopting an enterprise-grade data strategy are able to optimize their technology investments and lower their costs.

Organizations that want a smooth transition to becoming data driven need a plan for advancing their business transformation journey and treating data as a corporate asset. Creating a data strategy is the first step toward defining and enabling such a plan.

The data strategy vision

All organizations make decisions about how they engage with, operate on and leverage their data — whether at an enterprise or project level. Companies that form a holistic point of view in adopting an enterprise-grade data strategy are well positioned to optimize their technology investments and lower their costs. Such a strategy treats data as an asset from which valuable insights can be derived. These insights can be used to gain a competitive advantage by being integrated into business operations.

Organizations that want a smooth transition to becoming data driven — aligning operational decisions to the systematic (and automatic, as much as possible) interpretation of data — need a plan for advancing their transformation journey and treating data as a corporate asset. Creating a data strategy is the first step toward enabling such a plan and increasing the organization's analytics maturity. This term refers to an organization's ability to deploy advanced analytics at every point of interaction — human as well as machine — to continuously improve decision-making quality and accuracy.

A data strategy ensures that all data initiatives follow a common method and structure that is repeatable. This uniformity enables efficient communication throughout the enterprise for rationalizing and defining all solution designs that leverage data in some manner.

Many organizations fail to prioritize defining a data strategy on the grounds that it's either a case of "boiling the ocean" or else an "infinity project" that will deliver little value. In both cases, they're incorrect. Creating a data strategy is both achievable and valuable. It's also an essential component of any organization's transformation journey.

Companies that embrace the constructs of a data strategy often define dedicated roles to own these strategies and policies. This ranges from augmenting executive staff and IT staff with roles such as chief data officer and chief data strategist, respectively, to expanding the responsibilities of traditional enterprise data architects.

All aspects of a data strategy should be agile and deliver frequent, iterative value to the business. Such agility enables the strategy to evolve over time, changing as the organization changes and allowing for input and recommendations from all levels of the organization.

Data strategy defined

A data strategy is a common reference of methods, services, architectures, usage patterns and procedures for acquiring, integrating, storing, securing, managing, monitoring, analyzing, consuming and operationalizing data. It is, in effect, a checklist for developing a roadmap toward the transformation journey that companies are actively pursuing as part of their modernization efforts. This includes clarifying the target vision and practical guidance for achieving that vision, with clearly articulated success criteria and key performance indicators that can be used to evaluate and rationalize all subsequent data initiatives.

A data strategy does not contain a detailed solution to use cases and specific technical problems. Nor is it limited to high-level constructs intended only for senior leadership. Sustaining a successful data strategy requires executive sponsorship and governance for alignment with corporate objectives and enforced adherence. As corporate objectives evolve, so should the data strategy — keeping up not only with how the business is operating but also with how supporting technologies and related innovations are maturing

Four common drivers

Though the impetus for creating a data strategy can vary from one organization to the next, there are four common drivers:

- **Unification of business and IT perspectives.** A common data strategy ensures that the business and IT organizations are positioned as joint leaders of the company's direction by understanding each other's needs, capabilities and priorities. In this way companies can adopt a "business-led/technology-enabled" approach for not only internal operations but also vendor and partner collaborations.

- **Enterprise-wide alignment of vision and guidance on leveraging data as an asset.** Such alignment, captured in a data strategy, ensures that different groups in the enterprise view data-related capabilities with consistency, which reduces redundancy and confusion. Repeatability, a key outcome of consistency, reduces operational cost and optimizes performance due to higher quality and reusability.

- **Definition of key metrics and success criteria across the enterprise.** The data strategy defines "success" and "quality," thus reinforcing consistency for how initiatives are measured, evaluated and tracked across all levels of interacting organizations.

- **Reduction of technology debt.** Current-state legacy implementations have often become "technology debt" — the existing investment in legacy technology that may be providing limited business value in relation to cost, performance or quality needs, or is hindering the adoption of innovative technology or business practices. These barriers to innovation are both costly and complex to alter. A data strategy takes the current state of the enterprise data environments and operations into account and provides guidance for applying innovation with minimal disruption to ongoing business operations.

By addressing these drivers in a data strategy, organizations can enable various initiatives at scale, which can yield a utility-like service that provides a "supply chain of insights." A utility in this context refers to a hardened solution delivered as an end-user-focused service, with the entire supply chain that produces and delivers the insights abstracted from the consumer. It is similar to the way electricity is delivered via a power outlet in the home, with the entire power industry infrastructure abstracted from the consumer.

A supply chain of insights is a production-grade workflow for the transformation of data to actionable insights; this workflow encompasses ingestion, analytics, consumption and operationalization (see **Figure 1**). A data strategy allows companies to abstract the technical and operational complexities from the end user of these utility services, further maturing the target visions for self-service.
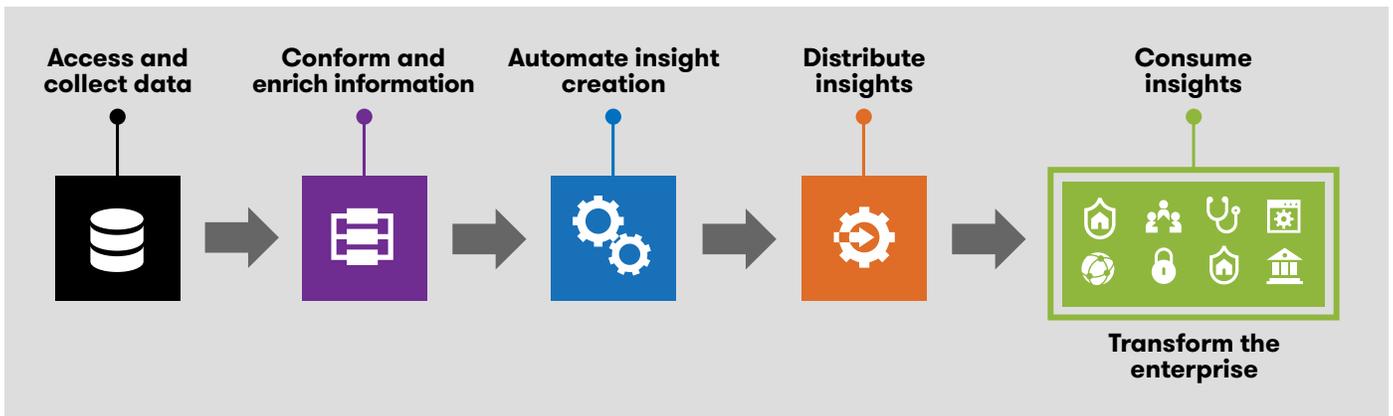

Figure 1. Supply chain of insights

Eight components of a winning data strategy

To ensure that a data strategy incorporates the full scope necessary to provide enterprise-wide guidance, organizations should include the following foundational components:

1. **Semantics.** A company-specific glossary of definitions for all terms and topics related to data, its handling and use.

2. **Goals/vision and rationalization.** A common explanation of the data strategy's importance and goals. Unique IT and business perspectives should be represented here, along with a clear correlation with the organization's strategic business goals. One of the most important elements to define is the data maturity model used to evaluate the current state. This model also will be used to structure the data strategy roadmap, a main tool in practical implementation of the strategy.

Organizations should include eight components in their data strategy:

1. Semantics

2. Goals/vision and rationalization

3. Strategic principles

4. Current-state documentation

5. Governance model

6. Data management guidance

7. Reference architecture

8. Sample and starter solution library

3. Strategic principles. Common standards and methodologies that an organization adheres to across all of its data efforts. These are typically business-focused principles but have a direct impact on the enabling technical design principles and functionality. Technical design principles are included in the reference architecture portion of the data strategy.

4. Current-state documentation. The business operations and technical implementations that capture how the organization's data operations function today. This content is used as the baseline for evaluating enterprise capabilities, their health and maturity in the context of the data strategy vision.

5. Governance model.

- ***Compliance and standards.*** Data standards, procedures and compliance criteria that the organization must adhere to for regulatory reasons, and those they voluntarily wish to adopt.

- ***Change management.*** Methods and standards by which change across the data strategy scope is introduced, evaluated, confirmed and conformed into the iterative evolution and communication of the data strategy iterations. This includes crowdsourcing contribution of edits, ideas and related communications from all levels of the organization. Change management also defines how deviations and exceptions to the strategy standards are identified, documented and handled.

- ***Workflow guidance.*** Procedures and methods for defining and managing the data and solution life cycles, including operational and support-control handoffs.

- ***Organizational structures.*** Guidance on how human resources and interactions should be defined, maintained and scaled within the scope of data-related activities. This also includes proper skill set definitions for all such resources.

6. Data management guidance. Standards and processes for managing data elements, their attributes and groupings, including:

- ***Data topics.*** Groupings of functionally related data that operate above the data model level of table/columns or file content. (Note: Data governance policies are often applied at the data topic level rather than to the raw data.)

- ***Metadata.*** Supplementary information about the data being managed and operated upon. This metadata is typically managed separately from the data it describes, even if some of the metadata may be sourced from the same systems in the same feeds as raw data.

- ***Data stewardship/curation/security/audits.*** Processes that ensure data is properly catalogued, of high quality and correctly secured for proper authorization by approved users.

7. **Reference architecture.** A good reference architecture takes into account existing or legacy standards and implementations, and allows for new standards and innovations to be integrated into a hybrid model that continues to support the organization as it evolves and grows. The key aspects of a data architecture include:

- *Architectural design principles.* Foundational technical goals and guidance for all data solutions. These principles help to ensure consistency across the domains that the data strategy influences.

- *Domain and function model.* The listing and definitions for core groupings of technical capabilities and their detailed definitions, including associated interactions supporting full data life cycle and use/exploitation, from discovery and experimentation to production-hardened operation.

- *Data usage patterns (with alignment to domain/functional mapping).* Groupings of solutions that share common functional and technical requirements, such as data discovery, data science or operational decision support.

- *Design patterns.* High-level solution templates for common repeatable architecture modules, such as ingestion for batch vs. stream, data storage in data lakes vs. relational databases, data harmonization for multiple sources and data access by different user profiles.

- *Tool mapping/function matrix.* A catalog listing of tools aligned across the functional capabilities model with preferences and primary-fit evaluations.

- *Tool rationalizations.* Documented guidance and points of view about when certain tools should be used, with supporting justifications. Such rationalizations include viewpoints and explanations of how different tools should be used in conjunction with other tools and with different design patterns.

8. **Sample and starter solution library.** A collection of predesigned solutions based on proactive assumptions and the harvesting of existing implementations. These are often leveraged as illustrative examples and accelerators for future solutions.

- *Logical solution models.* High-level solution patterns that can be applied in leveraging multiple tools and environments.

- *Physical designs.* Designs optimized for specific tool combinations and interactions that can be reused as standard accelerators.

- *Prebuilt code and intellectual property (IP).* Collateral that can be used for automation or accelerators.

- *Partner solution catalog.* A listing of prebuilt services, APIs and packages that are sourced from external vendors and partnerships.

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It is important to ensure that the first iterations of implementing the data strategy are achievable and deliver measurable value, before pursuing higher maturity goals.

Implementing, maintaining and evolving

A data strategy has to account for how an organization plans to mature its data-centric capabilities and enable new data- and analytics-based products and services to mature. A data strategy roadmap is a tactical short-term and long-term plan of initiatives to achieve this, captured by the data strategy in the target state vision. This plan is used to articulate the phases and iterations for each of the key data strategy components above. All data-related initiatives should align to the overall data strategy roadmap and, in turn, align to the overall data strategy an organization adopts and evolves.

It is important to ensure that the first iterations of implementing the data strategy are achievable and deliver measurable value, before pursuing higher maturity goals. Often, it is enough to start defining and implementing the data strategy across its components, without driving any of them to their ultimate state of maturity. To gain the greatest benefit, however, organizations should develop the following components to a well-defined state as a prerequisite to most tactical implementations:

- **Goals and vision** must be identified and documented up front. One of the simpler efforts, it is often neglected despite bringing the broadest consistency and credibility. Many organizations misspend millions of dollars and countless work hours developing solutions that are misaligned with their own core principles and goals.

- **Strategic principles** are high-level constraints to be captured before making any design decisions and implementations. These principles drive and validate every decision made with regard to the data strategy.

- **The reference architecture** should be well framed and communicated ahead of any technical decisions related to data. The reference architecture drives the technical point of view for tool selection and solution designs. It encourages the adoption of templates and structures for capturing and defining patterns and rationalizations so that they can evolve and be reused by a broader community of architects.

  The ability to operate across hybrid legacy and new technologies — which in turn can be deployed across on-premises, cloud and geographic instances — is heavily dependent on proper reference architecture definitions from the start, with vigilance toward continued innovation and evolution.

- **Governance** is not only important to deploy as early in the transformation journey as possible but is often compulsory. Companies need the ability to monitor, audit and control their data and its use to ensure proper liability management and communication management throughout the entire solution life cycle. The detailed content may evolve over time, but the structures, trigger controls and ownership responsibilities need to be defined and set up as early as possible. This will ensure that proper roles and checklists are in place as the data strategy and data solutions evolve and mature from one iteration to the next, with minimal disruption to business operations.

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Next steps:

- Take the *Analytics IQ self-assessment*.

- Learn more about *DXC Analytics*, and *contact us* about a data strategy and architecture advisory effort, including review of your current efforts.

- Engage in an internal data strategy initiative to formulate a holistic strategy point of view and harvest available collateral.

Many other aspects of the data strategy are certainly important, and they can be iterated as need and maturity dictate. But they typically follow a more organic process, one that requires less upfront effort. Instead, these aspects typically involve a harvesting effort in which previous iterations are turned into repeatable and reusable guidance and collateral.

Harvesting is a common approach. The key prerequisite for successful harvesting is to establish document templates that can catalog approaches for capturing what has been learned and collateral information. In this way, a data strategy becomes a "living document" and evolves through continuous improvement, with well-defined change-management governance.

As with any business or technical process, a data strategy has its own life cycle of continual evolution, maturity, change and scale. Aspects of the data strategy — including its principles, tools and technology definition — will need to be revisited periodically and kept aligned with market trends, new technologies and changing business priorities. The key is to recognize, interpret and react to such change quickly and efficiently when it happens.

Defining an operating model and a cadence of checkpoints for the business and IT to stay informed and engaged is a powerful governance approach to making a data strategy effective. Every major transformation — for example, modernizing a data warehouse — will need both a roadmap plan and an operating model before it can get started.

An architecture review board is often created by the data governance organization to monitor whether all projects are properly adhering to the standards and tool guidance, and to oversee proposed changes to such guidance.

A holistic approach

Managing the dynamic, ever-growing landscape of data technology and fluctuating business operations requires clear and consistent communication and guidance. To drive continuous improvement in your data strategy as you evolve it for each technology and business initiative, we recommend taking these steps:

- Take the *Analytics IQ self-assessment*.

- Learn more about *DXC Analytics*, and *contact us* about a data strategy and architecture advisory effort, including review of your current efforts.

- Engage in an internal data strategy initiative to formulate a holistic strategy point of view and harvest available collateral.

Organizations that adopt a holistic data strategy are able to manage the challenges of adopting and adapting innovation efficiently into existing operations. Without a holistic data strategy, organizations risk internal miscommunication and inefficient use of data technology, delayed time to market and poor-quality solutions. Accelerate your business transformation and define your data strategy now.

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Learn more at www.dxc.technology/ analytics

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