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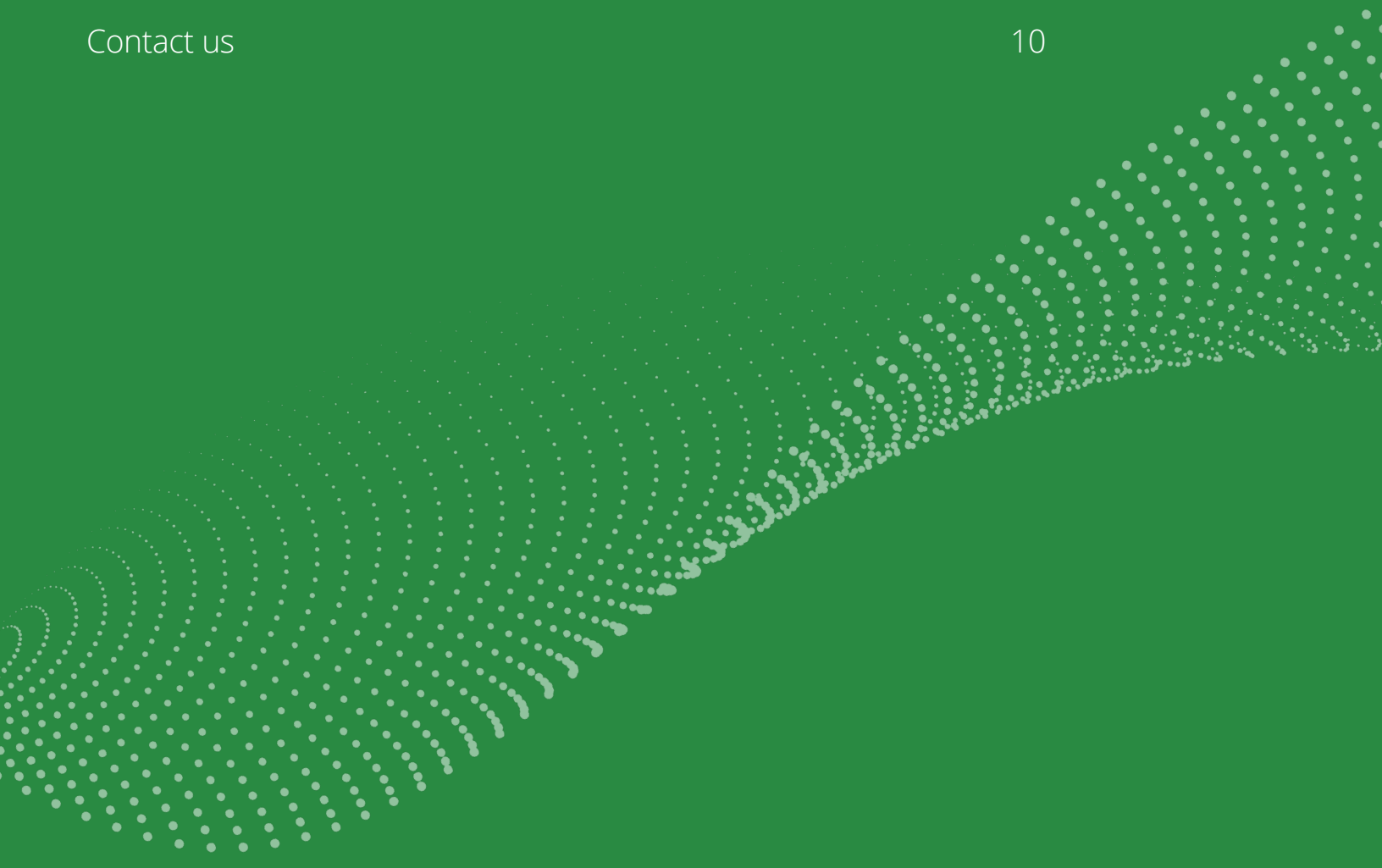
Containing the chaos in your data ecosystem

How enterprise data products and an integrated platform can help organizations reduce data sprawl and unlock scalable business value

Contents



Key takeaways

- Data and technical sprawl are a common struggle in many organizations. The push and pull of business priority and managing technical debt (i.e., reliance on legacy assets and systems) often lead to the creation of new one-off solutions that are not aligned with the long-term goals of an organization's data and technology architecture.

- An integrated platform can provide a common business user experience, as well as reduce cost and technical debt. It can also provide enhanced capability through new tooling and vendor capabilities, drive the standardization of capabilities across business teams, provide elasticity and scalability ready to meet new business demands, and drive cost reduction through active monitoring and reduction of federated technical assets.

- To achieve these benefits, an established data architecture should be in place that is designed to drive the need for data services and capabilities and outline prioritized business needs. Your data architecture should be managed and maintained, in coordination with your business and technology architecture, to meet a changing business environment.

- Data architecture can be effectively implemented through the design and build-out of enterprise data products, focused on streamlining business consumption of core enterprise data. Enterprise data products provide business teams with high-quality, conformed data sets that help enable teams to develop new use cases in an agile, scalable manner.

- Building an integrated platform is a multiyear journey that requires one to two years of foundational migration work before business value can be achieved. During a migration, it is important to focus on core business use cases, as a minimum viable product, to assist in driving platform adoption and establishing core data capabilities and services before expanding to meet broader business needs.

Migration presents a tremendous opportunity to take a fresh look at your organization's data ecosystem.

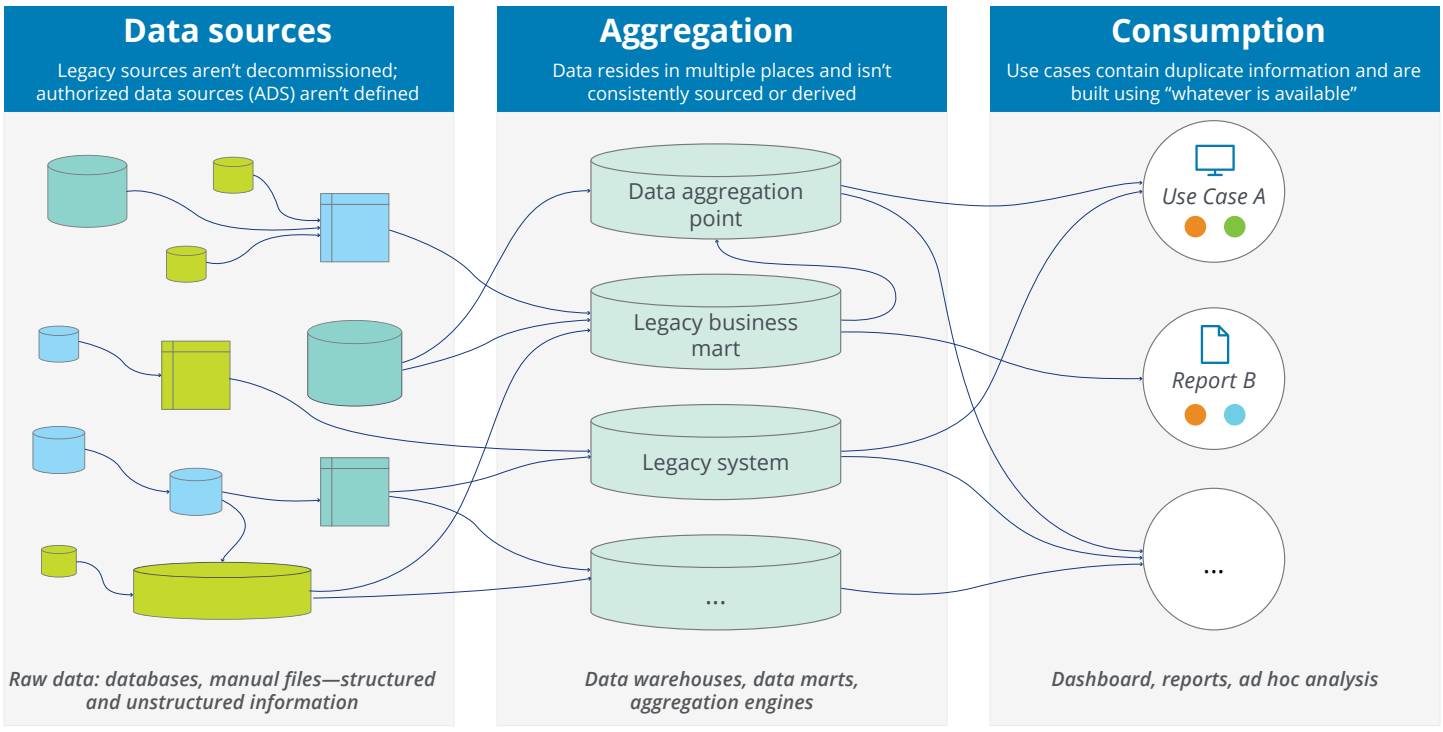
Where will data and technical sprawl lead you?

The digitization of work in recent years has caused a surge in the volume and complexity of data created, captured, transformed, and leveraged by organizations across industries. Business needs often prioritize speed to market (e.g., new builds and new systems) and reduce emphasis on long-term operational costs, technical debt, or ongoing governance and maintenance. As a result, costs to maintain a data ecosystem, including governance, decommissioning, and modernization, are often de-prioritized. And over time, the data ecosystem begins to exhibit sprawl—increasing data risks and technology-carrying costs, while jeopardizing innovation and agility. Sprawl can exhibit itself in many ways; however, it is most often defined as:

- **Data sprawl:** The proliferation of data and non-strategic assets across the organization—generally leading to inaccurate, inconsistent, and low-quality data—being leveraged to make business decisions. This coincides with a higher maintenance cost and increased complexity of the data environment.
- **Technical sprawl:** The proliferation of data capabilities and tools across an enterprise, generally leading to inoperability between business units and homegrown solutions, and adding to the complexity of supporting business priorities.

Data sprawl leads to more complex ecosystems, increased data risks, and increased operating costs for maintaining legacy data environments. Rationalization of data, systems, and capabilities is critical to maintaining harmony between business, data, and technical architectures.

Figure 1: Representative current-state environment



How migrating to an integrated platform can be your catalyst for change

Organizations are increasingly migrating to an integrated data platform as a solution to help optimize their data supply chain and reduce decades of data or technical sprawl across the enterprise. The migration presents a tremendous opportunity to take a fresh look at your organization's data ecosystem; evaluate how to construct a platform that simplifies your data ecosystem while proving resilient to evolving business needs; and implement leading practices for data provisioning, such as enterprise data products, standardized tooling, and centralized data governance services. Once established, enterprise data products are intended to promote concepts, such as data reuse, that accelerate the development of future use cases and provide a quicker time-to-market for business priorities going forward. If done well, the migration will assist in enabling the businesses to tap into a scalable platform, which will help provide tremendous agility, scalability, and cost savings compared to a distributed data ecosystem.

Integrated platforms offer a greenfield of new data capabilities and technical benefits compared to legacy systems and technology stacks that are often riddled with homegrown systems and a "jigsaw puzzle" of vendor technologies. Some examples of enhanced capabilities within an integrated platform include:

- **Enterprise data products:** They provide business teams with trusted, conformed data sets that are designed to enable agile and scalable use case development and promote concepts, such as data reuse that often provides a quicker time-to-market for business priorities.
- **Data governance as a service:** Centralized data governance capabilities give business users access to high-quality data while simultaneously reducing the level of effort to remediate data issues across the enterprise.
- **Enhanced tooling and vendor capabilities:** With the cloud, organizations have a suite of tools to choose from to meet the needs of the business, including tools for data storage, business intelligence, and visualizations.
- **Standardization of technology and data capabilities:** Standardization of technology and data capabilities, in a platform, provides consistency in technology and user experiences, and consolidates the need for controls across the data supply chain.
- **Elasticity and scalability:** Flexibility enabled by a scalable technology architecture assists organizations in meeting the changing demands of data consumers.
- **Cost reduction and monitoring:** Cost tagging assists your organization to organize its resources and track costs across lines of business at a granular level, allowing you to bill the costs back to the enterprise users.

How a sound data architecture can help reap the benefits of an integrated platform

A well-defined data architecture helps facilitate a meaningful overlay of data assets on core business processes, delivering business value to customers and ultimately driving the design and build of enterprise data products. To capitalize on the benefits and promise of a new platform, an enterprise data architecture must be in place to reasonably ensure that business, technology, and data objectives are in alignment. A well-built data architecture connects your data strategy to the business needs, defines relevant services and capabilities, and simplifies and classifies your ecosystem of data assets.

What does a data architecture do?

Figure 2: Enterprise data architecture objectives

Connects data strategy to business needs	Defines relevant data services and capabilities	Simplifies the ecosystem of data assets
• Prioritized data uses and requirements • Defined accountability for data across the life cycle • Data operating model aligned with business structure	• Common enterprise infrastructure and technologies • Specialized tooling and business capability • Enterprise data management services	• Rationalized data supply chain • Authorized data sources • Enterprise data products • Common business platform

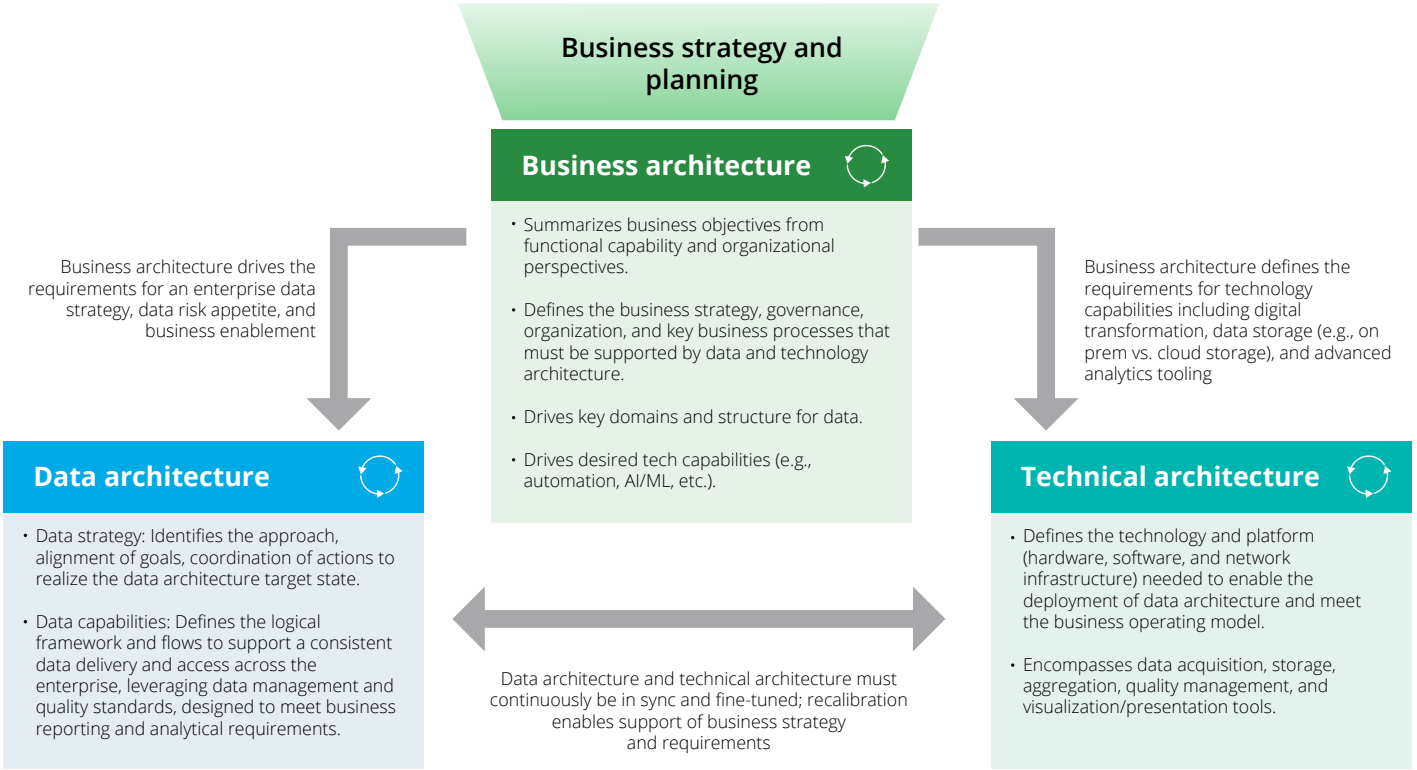
In tandem: Business architecture and data architecture

The integration of business, data, and technical architecture is an ongoing activity designed to reasonably ensure that business priorities and strategies are known and supported by data and technology teams. A business architecture is the "North Star" intended to drive changes and evolution of data and technical capabilities.

A critical part of establishing a data architecture is articulating business goals, objectives, and processes that will drive the need for different data and technical capabilities for an organization. Business strategy and goals will drive the requirements and inputs into an organization's enterprise data strategy, data risk appetite, and data programs. Similarly, business architecture will also help define requirements for technology architecture components, such as digital transformation, data storage, and advanced analytics tooling. A data architecture is made up of two components:

- **Data strategy:** Strategy identifies the approach, alignment of goals, and coordination of actions to realize the data architecture target state.
- **Data capabilities:** Capabilities define the logical framework and flows to support consistent data delivery and access across the enterprise, leveraging data management and quality standards, to assist in meeting business reporting and analytical requirements.

Figure 3: Integration between business, data, and technical architecture



Once defined, an enterprise data strategy and capabilities will drive clear requirements for the development of an integrated data platform. The definition of core data capabilities (e.g., data management services, data sourcing and ingestion, data storage and compute functionality, data consumption and distribution capabilities, and advanced artificial intelligence) is intended to drive design of data and technical components during the initial stages of a migration program.

Figure 4: Key considerations

What types of source data are required?

- Manual files
- Mainframe systems
- Unstructured data
- Streaming
- External
- Relational database management systems

How does my data need to be stored and accessed?

- Operational data store
- Data lake
- Enterprise data warehouses and data marts

What data services will meet my enterprise needs?

- Master and reference data
- Metadata management
- Data quality
- Data protection

What end capabilities does my business community need?

- Data search and discovery
- Advanced analytics
- Natural language processing/ chatbots
- Streaming analytics

How does data need to be consumed and distributed?

- Business intelligence reporting
- Application programming interfaces and management
- Semantic layer
- Consumer and other applications

The four phases of migrating to an integrated platform

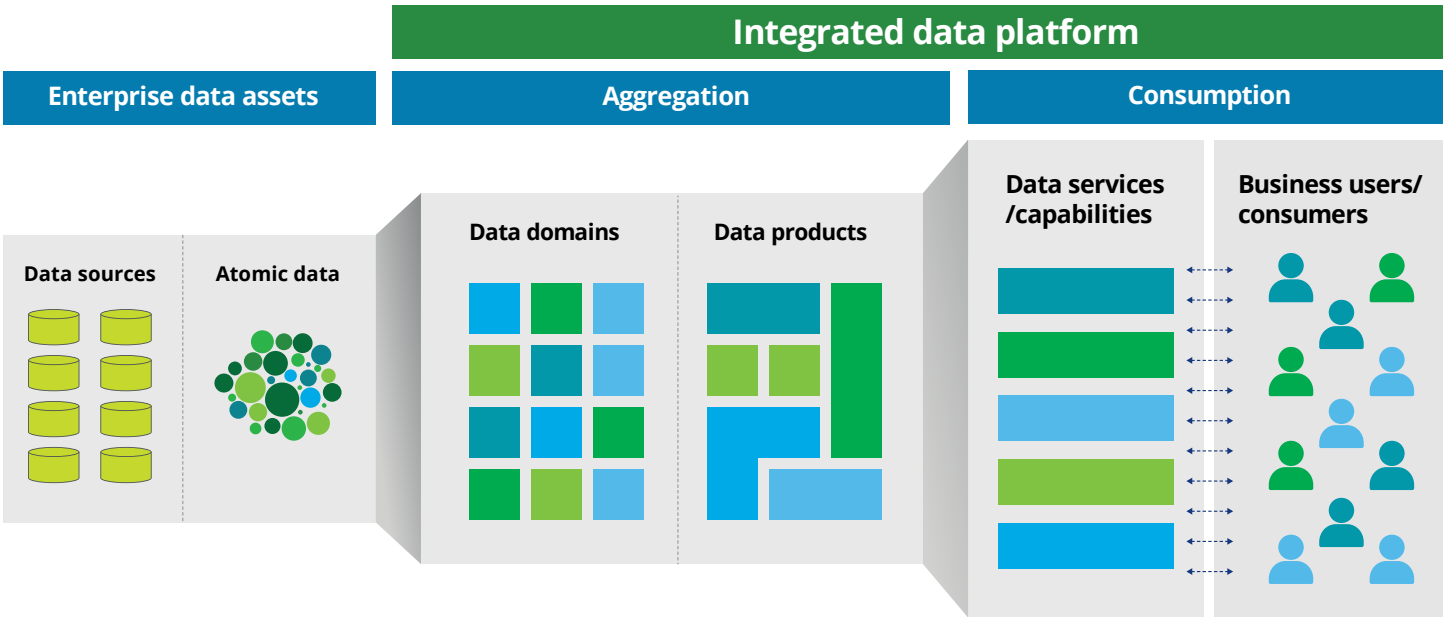
The migration to an integrated platform can be a multiyear journey, and it may take years to present a significant return on investment. However, it can be your golden opportunity to build a cohesive data and technical architecture to meet your business needs. And successful implementation of your organization's data architecture can be achieved through the build-out of enterprise data products that support the provisioning of data from multiple domains across many lines of business.

There are four main phases when aligning data, system, and technical capabilities to a target-state integrated platform:

1. **Design and architect:** Design a common data platform and enterprise data products based on a set of high-priority use cases identified in tandem with the business. Business engagement and buy-in are critical to reasonably ensure alignment on required capabilities and adoption for analytics and data science.
2. **Migrate sources and build platform:** Define and set up the data platform infrastructure and enterprise data products, migrate critical data sources and assets, and establish foundational data tools and capabilities.
3. **Migrate business use cases:** Migrate prioritized use cases to enterprise data products for targeted business users, and look to expand the use of the products across the enterprise to new use cases.
4. **Decommission legacy assets:** Migrate all business users from legacy assets to new enterprise data products, and decommission legacy data assets to unlock fixed costs and resources.

If designed and executed appropriately, business users will likely be provided a significant improvement in tooling and capability with better access to higher-quality, more complete enterprise data.

Figure 5: High-level view of an integrated data platform



Summary

Ultimately, your organization will find that migrating to an integrated platform will help drive simplification in your data ecosystem and enhance the data services and capabilities offered to business users. Focused effort in these areas will assist in building the foundation for a nimble data platform that is responsive to new data and technology needs, designed to proactively address a changing regulatory and compliance environment, and resilient during change.

An Integrated platform presents a golden opportunity to build a cohesive data and technical architecture that meets your business needs.

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