Modern enterprises leverage data and AI to keep up with the high dynamic of an ever-changing business world. On the way to achieve that goal almost all of our clients face the same challenge: To transform their strategy, operating model and way of doing business such that data is used to drive the corporate capabilities used in processes that generate value.

One of the recent concepts of achieving this is the data mesh, that shifts responsibilities towards the business to produce data products that are standardized in their creation as well as in their access. The data mesh paradigm, however, is not a purely technological invention, but rather a socio-technological endeavor that brings together technology, employees, and corporate processes. The classical Venn diagram of these three is given below. We have added the usually omitted descriptions of the links between the adjacent pairs: Employees possessing an intuition for the capabilities and limitations of technology (“technology literacy”), the enterprise being able to use technology in processes (“capability model”) and the employees working together along the process landscape (“collaboration model”).

Achieving literacy, data capabilities and collaboration are at the core of a successful transformation. Here, Deloitte presents a series of papers that explain key aspects how to achieve these three along the transformation towards becoming a data driven enterprise. The series is structured into strategic, tactical and operational aspects of data driven work.

Beginning with the strategy framework we are working along, we introduce our orchestrator for the data transformation journey. As the major tactical pillars of the transformation we focus on the required governance as well as the data-centric process landscape in two further articles.

These concepts are underpinned by operational tools such as data catalogs, data quality and IT platforms which we are also covering in an article. Since these developments need to be sustained by specialized change management, a separate article is dedicated to this topic.

The journey to a data-centric enterprise is a complex transformation that continues to bring new challenges and insights. We will continue to expand and add to our series of articles.
Data-fueled value generation as core accelerator for successful transformation

Enterprises are striving for growth, profit optimization and a value-driven portfolio mix - to sum it up: future competitiveness. In today’s world, the success of achieving these goals is highly influenced by a vastly dynamic environment, including changing paradigms and rising megatrends like connectivity, globalization, individualization, knowledge sharing, and security. The opportunities these megatrends provide for an enterprise’s processes, organization, and technological enablers can be fueled and proactively exploited by utilizing its data. This leads to the generation of insights, optimized efficiency, an extended value chain or new business and monetization models as well as sustainable planning.

Consequently, more and more enterprises declare data as one of their primary assets, triggering an evolution of data from a supporting to a value-adding role. In particular, organizations of various industry sectors and sizes highlight data-driven decisions as foundations to ensure their competitive advantages in the future, and potentially evolve as pioneers in data-driven ecosystems.

And yet, there are many pitfalls that hinder enterprises to transform their business successfully to generate value from data. Major changes usually are accompanied by an enormous complexity in combination with vast costs and uncertainty. Many of our client experiences prove that managing the dominant complexity and extensive amounts of data and information is a tremendous challenge for enterprises and, therefore, frequently data initiatives fail or do not leverage the expected value.

But why do most data initiatives fail?

- **Pitfall 1: Technology First rather than Business Value First**
  When landscapes are historically grown or new trends are adapted regardless of specific business needs, isolated technology-centric decisions can hinder the transformation towards a data-driven business. Rather, the enterprise should focus on value-driven enterprise-wide initiatives with a distinct business value centricity, within corporate-strategic boundaries. This fuels value and customer centricity combined with an integrated change and use case management process within the enterprise.

- **Pitfall 2: Inflated Data Initiatives rather than Manageable Use Cases**
  Enterprises are generally structured into logical clusters, business areas and processes, each having their own, partially contradicting, interests. As each of these organizational groups have dependencies amongst each other, it is crucial to avoid isolated initiatives, which optimize encapsulated silos rather than breaking them down. The guided operationalization and management of use cases following one cross-domain vision is key for a transformation towards a shared data ecosystem. The rationale behind this is to slice the massive complexity into smaller and manageable use cases, which are prioritized and implemented based on their value-add and feasibility.

- **Pitfall 3: People Delegation rather than People Integration**
  Practice proves that many enterprises are developing and communicating their data initiatives top down only, without considering employees’ needs and expertise. This can lead to confusion, demotivation, denial and refusal throughout the enterprise and transformation journey. A crucial factor for success evolves around the capabilities and skills of the enterprise and its workforce. Becoming data-driven enhances the need for updated roles, skills, capabilities, and a shift in the mind-set which need to be shaped and fostered throughout the enterprise via an early embedding of change management and holistic communication.

- **Pitfall 4: Legacy Applications rather than Scalable Technologies**
  Due to the historic growth of many companies, enterprise, and solution architects often operate in the brownfield and are facing diverse challenges, including technological feasibility, long-term license contracts, redundant applications, legacy data storage systems, and many more. Hence, technological enablers are rather chosen by criteria of price, legacy and manageability than by a focus on the business’ immediate and future needs.
This bouquet of challenges highlights the need of a guiding framework to enable organizations to map their journey towards what they, individually, want to achieve. Although the goal appears to be clear, the industry sector, ecosystem, current and planned data initiatives, the maturity and – most certainly – the culture of each enterprise differs. Consequently, the approach to transform towards a data-driven business needs to be tailored so that enterprises can exploit the opportunities hidden in their treasure troves of data to take the lead in their field.

The Deloitte Data Transformation Map
Deloitte has developed the Data Transformation Map framework, which supports enterprises to become truly data-driven, manage complexity of the transformation, and generate value from data.

**Figure 1. Deloitte Data Transformation Map**
*Navigate from hardware-driven to data-driven business*
As the transformation towards a data-driven business cannot be done with a finger clicking but rather resembles a transformation journey, the Deloitte Data Transformation Map visualizes a closely interwoven solution space of business, organization, and technology as a tube map. With seven tube lines, the 34 tube stops and the enterprise repository of a data-driven business, the framework enables enterprises to gain an overview over the ecosphere of a transformation. Further, the framework applies insights and boundaries from client projects, scientific research as well as commonly known norms and standards, such as DAMA DMBOK, ISO 9001, ISO 27001, TOGAF, and UNECE.

The seven tube lines in the Data Transformation Map represent the main pillars of a data-driven business. Their interconnectivity and interaction are essential for the success of the transformation. Each tube line of a data-driven business can be detailed into specific topics, which are illustrated as tube stops. These subsume a broad and deep asset pool, including methodological toolboxes, procedural models, and modular solution patterns. When tailored to the individual needs of an enterprise, the usage of the assets has successfully realized numerous Deloitte clients’ projects. The outcomes of applying the asset pool are aggregated, refined, and stored in the enterprise repository, which documents technologies, target architectures, roles, and processes.

Enterprises can decide, depending on their business needs and maturity level, which stops they want and should logically combine to achieve the desired output. Companies that are currently at the beginning of their transformation journey can, for example, use the framework to develop a data vision and data strategy. For enterprises that are more advanced in their transformation towards becoming data-driven, Deloitte uses the framework to realize the emerging paradigm of data mesh.

The data mesh is a domain-driven socio-technological approach for creating decentralized data architectures and governance structures as foundation for generating value with and through data products by merging data and people. Coherent roles and responsibilities enable the sharing of trusted and high-quality data via an enterprise-wide marketplace, resulting in a rise of re-usability and collaboration across departments. A possible rationale to strive for data mesh is that data is currently siloed and integrated point-to-point, which inevitably leads to high maintenance and implementation costs as well as operational complexity. Implementing a data mesh concept can therefore turn the challenges which arise from the existing megatrends and paradigms into the following tangible value drivers:

- **Business value first** driven by overarching data products in the data mesh, directly emerging out of use cases with a dedicated and proven business need
- **Manageable use cases** through dedicated use case management and data product lifecycle process which are steered by federated governance structures to break down data silos and establishing cross-domain transparency and accessibility of data products
- **People integration** by living the new roles of the data mesh concept (e.g. data domain managers, data stewards and data custodians) that require and encourage all employees to develop new capabilities and actively participate in data-related processes and activities
- **Scalable technologies** as an enabler for managing data along its lifecycle, as well as providing accessible and trusted data products to consumers via data catalogs and marketplaces

**After setting the scene – what’s next?**

Our previous experiences with various clients from different industry sectors have proven that the right strategy and a corresponding transformation paradigm (such as the data mesh) are crucial for a successful transformation towards a data-driven business and realizing the actual goal – to generate sustainable business value.

When it comes to operationalizing data initiatives to achieve the objective of becoming data-driven three main pillars backed by a comprehensive change management need to be considered: processes, organization, and technological enablement. As such, a transformation changes the way an enterprise operates, this directly impacts the company’s processes. Existing processes have to be refined in parts to achieve the goal of generating business value using data while other processes may become obsolete. Further, additional processes for e.g., use case management or data product lifecycles are created. In addition, if an enterprise changes the way it operates, its organizational structure needs to be adapted accordingly to ensure smooth execution of business processes. New roles and responsibilities emerge, a mindset shift towards a safe and compliant shared data ecosystem as well as new collaboration models need to be defined and implemented in an organization. To enable the interlink between both processes and organization technological solutions need to be evaluated, tailored and implemented. These solutions, e.g. data catalogs, data marketplaces, and data platforms are central vehicles to provide data-driven services, which unveil the business value of use cases for end users in their daily work.

For more insights and best practices regarding processes, organization, and technologies of a data-driven business as well as accompanying change processes, our upcoming articles will provide further reading.
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Christoph is a data strategy consultant and data scientist, combining the two in his endeavor to help enterprises transform into data-ready organizations. He has a particular focus on the CEO and CDO organization’s operating model design, data / machine learning governance, collaboration models and data literacy. In his opinion, data is a people business - technology is more readily available.

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Jan is a highly skilled data strategist with 8 years experience in designing & transforming companies to become value-data-driven. He is an expert in Data Governance & Operating Models. Jan’s project background is in a variety of AI & Data Strategy and Data Science projects at different maturity levels (PoC, PoV, MVP, MMP) including the design of cloud architecture and data operation units.
Data Mesh
The data mesh is a domain-driven socio-technological approach for creating decentralized data architectures. It is based on decentralized governance structures as a foundation for generating sustainable business value using standardized and re-usable data products. It relies on a flexible collaboration model across the entire enterprise.

Data Product
A data product is a set of data that is made available for the usage of employees or systems via a standardized API on a marketplace. Its purpose is to realize use cases and therefore to enable the implementation of data-driven services.

Data as a product
Synonymous to Data Product.

Use Case
A use case creates business value by fulfilling an explicit objective. Use cases are based on existing Data Products.

Data Catalog
A data catalog is the central inventory for all data assets within the company. It is made understandable via a glossary of frequently used terms and by highlighting the technical and business data lineage as well as transformation logic.

Data Governance
Data Governance is the discipline that connects data processes, and corresponding roles and responsibilities by formulating binding enterprise-wide policies.

Ontology
Ontologies are formalized descriptions that capture relations between business entities and their abstract realization as data.

Data Domain
A data domain takes ownership of data relevant to a common area of interest and implements roles that are responsible for expanding and maintaining the usability of this data.