

# THE DATA DEMOCRATIZATION HANDBOOK



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# Introduction

The notion of data democratization in the enterprise has evolved alongside other relatively new data stack designs such as Data Fabric and Data Mesh. The goal of data mesh and data fabric architectures is to overcome the constraints of traditional data stacks, break down data silos and make data easier to share and be more available to data consumers – be they applications, functions teams or lines of business. The notion of data democratization is a core element of implementing both data mesh and data fabric architectures.

The Data Democratization Handbook explains what data democratization is, and where it fits, in relation to other approaches that have emerged to address the lack of data accessibility in the enterprise.





## Data democratization explained

As a concept, data democratization involves making data more accessible and available to a wide range of people within an enterprise. Data democratization aspires to enable stakeholders who rely on data to be able to access it so that they can utilize it more easily, allowing them to develop the data-driven services that are the foundation of modern business applications. Data democratization involves breaking down the organizational, behavioral, and technological barriers that typically create data silos and prevent data from being shared among teams and applications.

## The need for data democratization

Ultimately modern services rely on data. The COVID pandemic accelerated the digital revolution, pushing the need for online services, operational analytics and real-time alerts. It also speeded up cloud adoption. Data-driven organizations have come to realize that the inability to easily share data is stunting growth and chipping away at their ability to compete.

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# Barriers that prevent data democratization

The very concept of data democratization results from the fact that current enterprise data stacks can no longer keep pace with the need to provide enterprise-wide data in an efficient, accessible way to data consumers. Obstacles include:

## Technological barriers

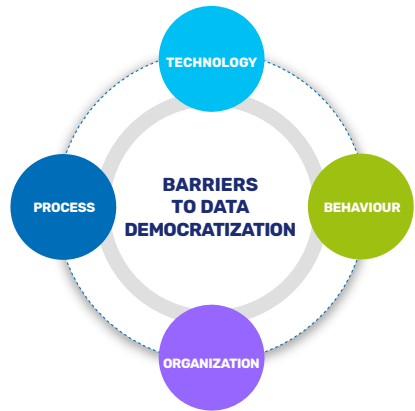
Data stacks that have taken shape over many years may no longer meet the needs of forward-looking data-driven organizations. Often, in mid to large sized enterprises, data is stored in multiple separate systems, departments, and business units, making it difficult to integrate and access across the organization. Data silos can result from the use of different software solutions, incompatible data formats and reliance on legacy systems that lack interoperability. Organizations also have challenges utilizing IoT data.

Complex data stacks, disparate data sources, and specialized tools frequently lead to barriers for non-technical users who may lack the necessary skills or knowledge to navigate and analyze data effectively.

Scalability and performance are another technological barrier to data democratization. Inadequate scalability or slow response times can constrain data democratization efforts.

## Behavioral barriers

Data democratization – the ability of a wide range of people in an organization to access data – relies on data literacy. Many IT teams rely on highly specialized technical solutions which make it difficult for less technical people to develop data-driven services. A behavioral barrier to broader data across the enterprise may be resistance among teams to adopt new technologies, processes or approaches which could be perceived as threatening to their existing roles, responsibilities, or expertise.



## Organizational barriers

Organizational barriers may also impede data sharing. The lack of coherent data standards and access controls combined with fuzzy data ownership makes it hard to share data.

Security and privacy concerns over who can access data, how it is shared, and regulatory compliance are important issues that need to be addressed for data democratization to be realized.

Hierarchical or complex organizational structures which may constrain effective inter team communications are also liable to impede mechanisms for sharing data.

# Achieving data democratization with an operational data hub

Data democratization is a key element in becoming a data-centric and data-driven organization. But where to start and how to begin? Below are three areas which can help data leaders on their data democratization journey using an Operational Data Hub – a real-time unified data platform that resides at the intersection of data and application integration.



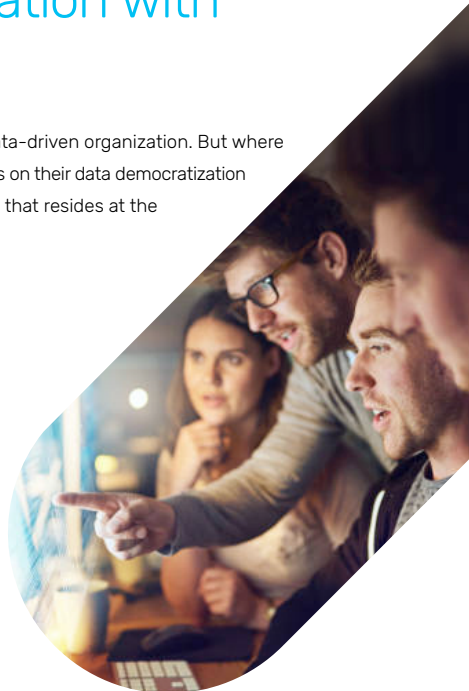
**Break down data silos**



**Set up a mechanism to share data access services**



**Introduce a new mindset to data ownership**



## Step 1: Break down data silos

Modern applications rely on data. Frequently, this data resides in multiple systems of record, and is managed by different teams or lines of business. Several new approaches have emerged to tackle the problem of inaccessible siloed data. These include Data Fabric and Data Mesh. Data democratization is a principle in both these approaches. Data Mesh is a process driven approach, while Data Fabric relies on technology that utilizes active meta data. Moreover, applications and analytics related to situational awareness, real time alerting and decision-making rely on event-based architecture to provide fresh, continuous near-real time data.

Data democratization is a key principle of both Data Mesh and Data Fabric design

An Operational Data Hub is designed to enable access to data that resides in multiple diverse systems and deliver it as data services in real-time to consuming applications. It breaks down data silos by utilizing event-based architecture and batch loading to replicate data into a highly performant data layer, which exposes the data via microservices.

## Step 2: Set up a mechanism to share data access services

Accessing data from siloed systems is one challenge. Delivering that data to consuming parties is another. Data lakes & data warehouses store vast amounts of structured and unstructured data. Historically they addressed issues relating to data consolidation. However, today enterprises must manage unprecedented amounts of data. Centralizing this data makes it even more difficult to access and share efficiently.

An Operational Data Hub addresses this problem by replicating data from multiple systems into a highly performant data layer, exposing the data as microservices to consuming services and apps. Each line of business or functional team can expose data services at their discretion through a collocated hub. In this way, other teams – be they data teams, development teams, or application integration teams – can request and consume real-time data from multiple systems simultaneously as APIs.

## Step 3: Enable a new mindset to data ownership

As noted above, an Operational Data Hub enables data accessibility and data sharing. In many cases, however, the ability to share data is stymied by the human factor: Teams may not want to share their data. They may feel threatened by handing it over to other teams. They want to maintain control. Frequently, data owners are also best equipped to manage their own data since they are most familiar with it.

