opendatasoft

Ebook

Data Portal

The essential solution to maximize impact for data leaders

Introduction

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The need to create value at scale from data

Whatever sector they are in, all organizations understand the vital importance of data to success. In a world full of data, easy and rapid access to the right datasets, in the right format, at the right time is crucial to decision-making, efficiency, collaboration, innovation and transparency. It decreases costs, builds new revenue streams, and mitigates risk.

On the positive side the availability of data has grown exponentially. However, matching data supply and demand is proving complex for Chief Data Officers and Data Leaders to deliver at scale. Essentially, they are often unable to industrialize access to data assets in ways that are simple and secure for all users, not just data experts with high levels of technical skills. They lack the tools to scale and encourage data sharing, holding back data democratization and hampering the conversion of data into value.

Solving the “last mile” of data access and matching supply and demand therefore requires a new approach. Organizations need to create collaborative, secure spaces where data assets, from datasets to visualizations, can be easily found and reused by everyone. This is the aim of a data portal, whether used internally, with partners or open to all. Access needs to be as simple as an ecommerce website, through an intuitive interface that encourages users to interact with data and thus builds a vibrant data culture across the ecosystem. Management must be straightforward and seamless, maximizing efficiency and demonstrating tangible impact and ROI.

Whoever your users are, your data portal therefore has to meet key requirements around accessibility, data quality, data discovery, and encourage data reuse. Effective data portals help users find and understand the data they need, giving them confidence that it is accurate, up-to-date and relevant to their needs. They underpin the transformation of how your organization operates, innovates, and creates value through data.

This ebook provides a comprehensive introduction to data portals at both a strategic and tactical level. It aims to help you embrace data democratization and unlock the value of your data – I hope you find it useful, wherever you are on your data journey.

1

What is a data portal?

A data portal is a web application or website that brings together data assets from different sources and makes it available to users, i.e data consumers.

It provides organizations with **a convenient and secure one-stop shop for the rapid discovery and use of trusted data assets**. Essentially it acts as a gateway to your organization's data, democratizing access and its use and reuse. It connects data supply and user demand in a single, accessible location.

Data portals can be **internal** (used solely by employees), **shared with specific audiences** (such as partners or customers), **open** to use by all, as with open data portals or a **hybrid** of one or more of these types.

Internal Data Portal
(restricted)

Partner Data Portal
(shared between organizations or neutral data spaces)

Open Data Portal
(open data platform, public portal)

Hybrid Data Portal

Integrating your data portal into your data stack

The data portal sits within the organization's data stack, centralizing data from multiple internal and external sources. These could be:

- Individual business systems (such as CRM, accounting or GIS)
- Data warehouses / data lakes
- Cloud-based storage (such as Google Drive or Microsoft SharePoint)
- Datasets provided by third-parties, including partners and customers

The data portal allows you to centralize all data assets from these tools and solutions (including data, datasets, APIs, visualizations and connected services) and make them available to all. Data administrators can easily prepare, process, enrich and publish this data so that it can be quickly accessed and used, either through visualizations on the portal itself without requiring technical skills, or fed into other applications, such as business intelligence (BI) tools and apps, via APIs.

Data assets are prepared data which has business/professional value (the data has undergone a transformation which makes it usable/reusable by people within the organization. It has become consumable by a business professional (e.g.: raw data transformed into reports, provided in formats from a CSV file to an API or a visualization which allows data to be explored and reused by as many people as possible).

What is the difference between data catalog, business intelligence tools and data portal solutions?

Technology is central to turning data into value and driving data democratization by understanding data assets and making them available to all. As part of this many companies have implemented data catalog solutions, which use metadata to provide an organized inventory of all data assets and business intelligence (BI) tools to allow analysis and reporting on data.

However, both of these solutions require skilled, expert users to operate and manage them. That means they concentrate data within a small group of trained analysts. In contrast data portals are designed to democratize data and make it available to everyone, without requiring technical skills. Consequently, it is important to understand the differences between data catalogs, data portals and BI tools as they provide different capabilities, and are used by different groups, as explained in the graphic below.

	Data Catalog	Business Intelligence Tools	Data Portal Solution
Purpose	Used to inventory metadata	Used to analyze and visualize data	Used to create one-stop-shop **for all your data**
Users	Data experts	Data experts	**For everyone**
Benefits	Documents all metadata and centralize it in the same place	Analyzes and understands performance and uncovers new opportunities, especially due to AI capabilities	Provides access to data itself from a single, **central location**, and allows everyone to reuse it
Capabilities	Enables data governance rules to be applied to data	Enables datasets to be visualized by experts	Enables data to be enriched, processed, combined and **reused at scale**

2

The different types of data portal

Data portals can be aimed at different audiences, meaning that while the underlying platform remains the same the experience is finetuned to meet specific user needs. Essentially this leads to four different types of data portal:

Internal data portals

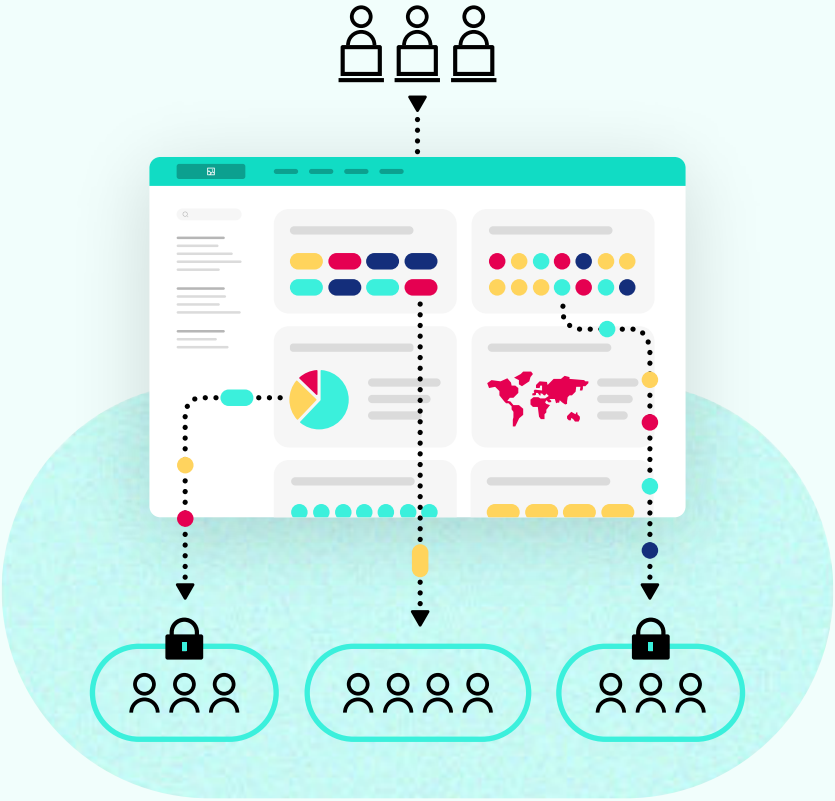
Partner portals

Open data portals

Hybrid portals

Internal data portals

These centralize and share data inside an organization, with all employees. This provides everyone with access to the information they need to do their jobs, based on specific access management to guarantee the security and the confidentiality of the data and the user experience. Successful internal data portals improve decision-making and increase collaboration through better use of data, enable innovation, and inspire users to create new reuses of data.



Examples include:

Construction materials company Saint-Gobain, which created its internal data sharing portal to provide a single, centralized location for its employees in 66 countries around the world. Featuring strong governance capabilities, it also allows users to intuitively find and access datasets and visualizations from across the group.

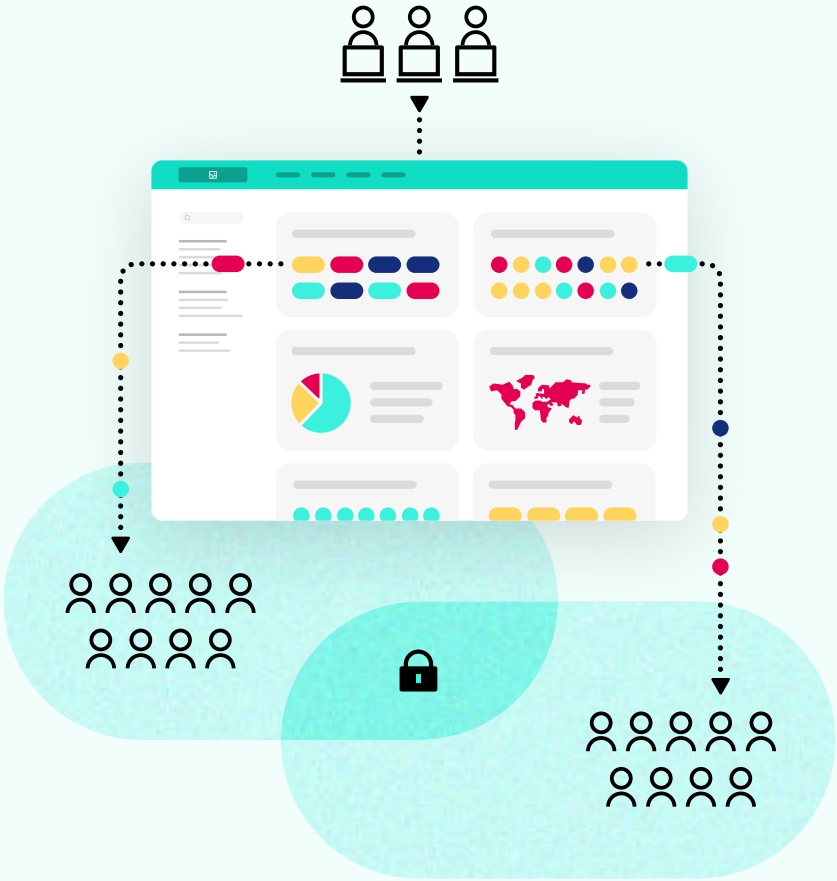
Real estate company ICF Habitat, which is responsible for managing a portfolio of 95,000 homes across France. To enable all its employees to benefit from the advantages of data, it has launched an internal self-service data portal. Featuring a range of intuitive dashboards, this enables employees to better understand the organization's goals, take more informed decisions and provides greater transparency over its operations.

Insurer Lamie Mutuelle, which provides health and property cover to 85,000 people. It wanted all of its data to be reusable and usable by staff so created a centralized data portal. This feeds multiple decision-making dashboards, provides 360° customer views, and drives its CRM solution, and customer apps such as its web-based member area. This is helping the insurer become more data-centric, efficient and responsive to customer needs.

There are a wide range of use cases (and names) for internal data portals, with many organizations branding their portals to increase engagement and to match corporate objectives and messaging. It can be a self-service data portal or app, internal data marketplace, or data hub, for example.

Partner portals

Data can be too valuable, specialized, or sensitive to share openly with all external audiences through an open data portal. In this case a partner portal allows data to be shared across a specific ecosystem. It can either be led by a single organization, sharing with its its partners/customers, or where every partner contributes data on an equal basis. This enables greater collaboration, improved efficiency, and can be used to monetize data in the form of new data services.



Examples include:

Telecoms company SFR, which collects and makes available anonymised geographical data based on the movements of its users. Dashboards created with Opendatasoft are provided as a paid-for service to organizations such as local authorities, travel companies, event organizers and retailers, helping them better understand their customers, design infrastructure, and evaluate performance. Using a partner data portal, SFR delivers tailored, graphical visualizations and dashboards to its customers, creating a new source of revenue for the business.

Internet of Things (IoT) product provider Birdz by Veolia supports the sensing and monitoring needs of cities, regions and industries in areas as diverse as analyzing the quality of drinking and river water, and monitoring pipeline networks and biodiversity. Its partner portal provides each of its customers with personalized, interactive dashboards and visualizations based on the data that their sensors are collecting. This enables customers to increase operational efficiency by monitoring usage data, improving management of their assets and making better decisions, without requiring technical data analysis skills.

Technology company Schneider Electric, is focused on harnessing data to help its customers and partners drive greater energy efficiency and sustainability. To enable this it has launched Exchange, a data services marketplace for its partners. This brings together a wide variety of resources, including datasets, APIs, analytics and digital tools, while partners can also share ideas and access a network of solution providers. The platform has become a collaboration space for Schneider Electric and its partners. Multiple data offerings and products are now available via Exchange, allowing Schneider Electric to easily work with its ecosystem to create value and spread energy efficiency ideas and best practice.

This category of data portal covers a diverse variety of use cases. They can be partner data portals, data marketplaces, client portals, or industry data hubs, for example.

Open data portals

Open data portals share all or part of an organization's data freely with all audiences. Data can be accessed by anyone via the internet, and be easily reused by following standard license conditions. Open data portals began in the public sector to share legally-mandated government information in order to increase transparency and accountability. They have now spread to leading private-sector organizations, who use them to increase stakeholder engagement, particularly around areas such as monitoring sustainability performance. Users benefit through instant access to relevant information, while the provider is able to demonstrate their openness and (in the case of public bodies), reduce incoming information requests.

Examples include:

State agency, the North Carolina Office of State Budget and Management (OSBM), which is responsible for providing demographic information and analysis about the state. Its comprehensive LINC open data portal provides datasets covering areas as diverse as population (including census data), labor force, education and agriculture. Users are equally diverse, ranging from researchers and data scientists through elected officials and public employees to citizens. Its data portal meets all of their needs through an engaging, easy-to-use interface combined with the ability to quickly create powerful data experiences.

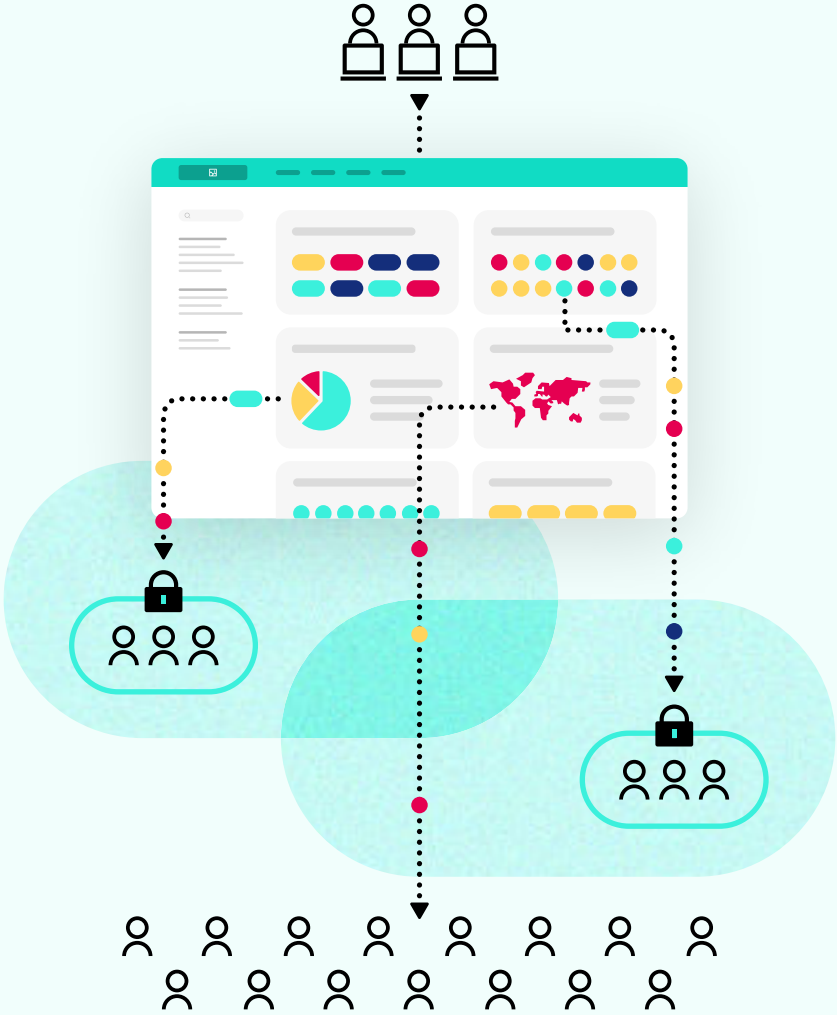
Energy company UK Power Networks (UKPN), which distributes power to 8.3 million homes and businesses in the UK. As it moves towards a Net Zero future, UKPN wanted to build an open community around its data, sharing it seamlessly with stakeholders, which include local authorities, developers, researchers, citizens and customers. To maximize use of its data portal it worked closely with stakeholders to deliver an optimized experience and has created a range of tailored use cases and dashboards to provide them with the information they need.

US city, Long Beach uses its open data portal to build trust with its 470,000 citizens as well as increasing efficiency and engaging with stakeholders. It shares data on its activities, from diversity information and police stop data to an inventory of city trees. It aims to engage users through easily understandable visualizations and dashboards. For example, it uses an interactive map to share information on all service requests received through the city's 311 app, covering areas such as incidents of graffiti, potholes or dumped items.

Open data portals cover a wide array of audiences and use cases. They can be open government portals, energy portals, open data platforms, hubs, observatories, public information portals, citizen information applications and services, or transparency hubs, for example.

Hybrid portals

Often organizations want to be able to run a single portal and partition access so that specific audiences or partners are able to view certain datasets. This makes administration and data management easier, while providing flexibility in terms of which data is shared with specific audiences.



Examples include:

Railway company Infrabel, which has created a single portal for all of its 10,000 employees and external stakeholders, who include the public, media, and regulators. The majority of its data, which covers everything from rail punctuality and the location of level crossings to progress against CSR goals, is available to all users, and is delivered through tailored dashboards, visualizations and APIs. Datasets that are commercially sensitive or which have no public interest are restricted to internal users. This increases openness and efficiency while providing staff with the information they need to improve decision-making.

Leicester City Council in the UK is focused on using data to better serve its residents and increase efficiency by digitizing processes. It has therefore created a hybrid data portal which makes relevant data available to citizens, staff and councilors, automating sharing while increasing engagement. The data portal currently has 330 public datasets and a further 50 that are available internally, all accessible through a range of maps, dashboards, and data visualizations. This hybrid approach increases internal collaboration between departments, ensures data-driven decision making, and informs the public and other stakeholders of council activities.

The City of Namur in Belgium aims to facilitate Information access through a hybrid data portal, better informing employees, residents and local stakeholders. Internally, sharing data helps increase efficiency and make better, fact-based decisions, while externally it improves transparency and engagement. To share data internally, Namur has implemented a granular access management system, enabling more than 170 employees to consult specific internal datasets, while protecting confidentiality and meeting regulatory requirements. Overall, the hybrid portal has improved efficiency while increasing public transparency and enabling partners to innovate and seize new opportunities.

3

What are the essential components of a data portal for your users?

To drive usage, the essential guiding principle behind your data portal must be to make it as easy and seamless for every user to access and benefit from data, without requiring detailed training.

It must deliver the same, straightforward user experience as an ecommerce marketplace, combining simplicity, comprehensiveness, ease of access and interactivity. To achieve this, make sure your data portal has the following features:

Accessibility

Advanced search capabilities

Offers a full range of reuse and sharing options

Accessibility

Device agnostic: accessible through any device or web browser without needing to download or install any additional software.

Integrated: perfectly integrated with other data solutions so that employees can use their preferred tools to find, access and reuse data on your portal.

Multilingual: depending on the needs of your users, your portal should also be available in different languages

Easy to navigate: your portal should have a clear structure and layout, with all assets organized into relevant themes. Provide every asset with a full description and make it easy for users to bookmark and favorite particular datasets. For internal portals look to automatically suggest relevant datasets based on someone's role and previous usage.

Accessible in multiple ways: enable people to interact with data in the way that best meets their needs (raw data, visualizations, dashboards, maps). Ensure your portal makes it easy to create visualizations and offers the tools for users to build their own visualizations.

Advanced search capabilities

Comprehensive, responsive search: available through an advanced navigation bar with the ability to use filters to refine results and the flexibility to let users search on data asset names and metadata. Results should help users see exactly what the data asset covers, including previews of datasets and associated visualizations down to the level of metadata.

Producer/consumer interaction: users should be able to request access to particular datasets with a single click and be able to easily leave comments and feedback that is automatically shared with the data producer, and rate datasets in terms of quality and usefulness

Offers a full range of reuse and sharing options

Sharing options: from standard file formats such as CSV, and JSON, to APIs, widgets and shareable, clickable links for social media. Make sure your data portal solution can generate all sharing options, including robust APIs, automatically from every one of your datasets.

Other resources: help them make the most of your data through information, support, tutorials and examples to inspire them.

4

How do you maximize the impact of your data portal?

Your data portal clearly has to be built on the right features and technology to deliver a compelling experience to your users. However, successful adoption and data sharing is about more than technology, no matter how well-designed it might be. Three factors are vital to deliver maximum impact:

1

Strong governance

The data in your portal has to be accurate, reliable and high-quality. It has to be clear to users what it covers, how frequently it is updated and who the responsible data owner is. All of this relies on strong data governance policies created and applied across the organization. This framework must be agreed by everyone involved with data to ensure they buy-into it, but has to be led by a senior data professional, such as the Chief Data Officer (CDO). The CDO should also be responsible for the data portal itself at a strategic level, explaining its value to other senior leaders and communicating its benefits to the wider organization.

A data culture

2

Sharing data, and using data as part of their roles, may be very new to employees. They may not be confident in understanding data and be unclear how it can help them. At the same time, data sharing brings change, breaking down departmental silos and creating a new, open organization where everyone can access information from across the business, and decisions are made based on data, rather than gut feel or previous experience. All of this can be very daunting to employees, and managers at a departmental level, meaning they don't embrace the opportunities that a data portal brings to their roles. Changing culture is therefore vital to ensure that everyone understands the positive benefits of your portal, and receives the training and support to encourage them to use it. Take the time to educate all employees, talking to users to suggest areas where data could help them, inspiring them to get involved. This will drive increased usage of your data portal, more reuses of your data and improve your overall business performance.

Collaboration with the ecosystem

3

One of the key benefits that a data portal brings is to increase collaboration with both internal and external ecosystems. Teams can work together more closely, using data to solve problems, and innovate to create new products, services and ways of working. To maximize collaboration, you need to understand which data is being used across your ecosystem, and how it feeds into different applications and services. This makes data lineage a core part of your data portal strategy. Monitor which datasets are being accessed most, and which visualizations and services they are part of, as well as those that aren't being used as much. This allows you to finetune your strategy, for example by adding more datasets on popular themes and revisiting underused datasets to see if they require technical improvement or could be better publicized. Monitoring through data lineage helps to steer and develop your data portal, ensuring it is always responsive to the needs of users.

5

How to create and maintain your data portal - best practice for administrators

In many ways a data portal is like an iceberg. Everything that users see and interact with is supported by a deeper platform that ensures that they have an engaging, effective experience.

To be successful over the long-term your data portal must meet certain basic requirements - following these best practices helps ensure it delivers maximum value:

Data quality

Unreliable or poor quality data will either not be trusted or may lead to the wrong decisions being made. Either way, it will undermine confidence in your portal and mean people do not use it. It is vital to ensure that your data is high-quality, with strong data governance processes in place to monitor every dataset.

Covers a variety of formats

While datasets are the foundation of any data portal, they are just one type of data asset. Engage users by providing data assets in a variety of formats, such as visualizations, dashboards, services and APIs, all easily searchable and accessible via your portal.

Automate processes

Administrators shouldn't have to be experts in design or content management to run successful portals. Save time and increase focus on meeting user needs with data by working with a solution that allows you to automate as much of administration as possible.

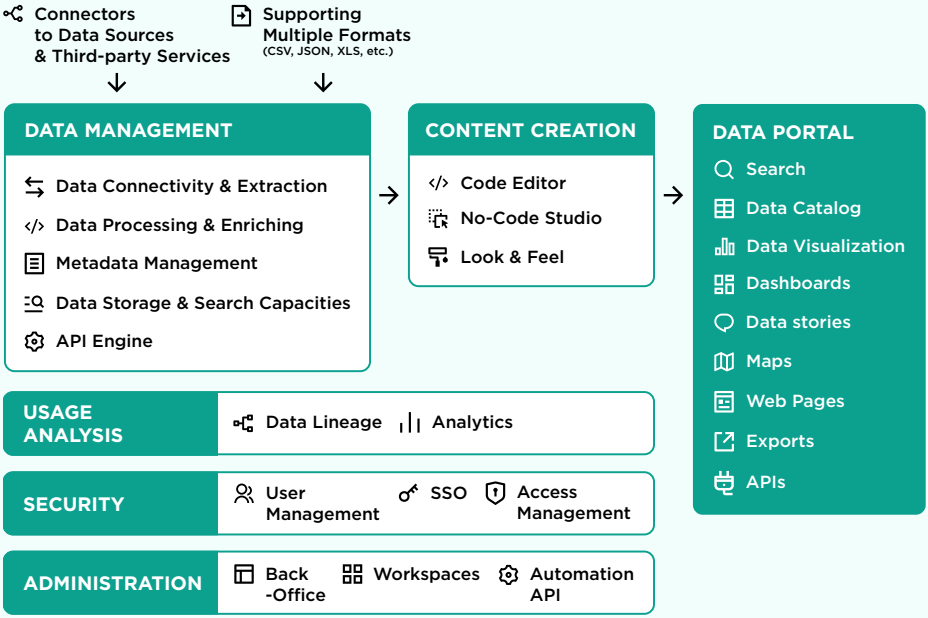
Constantly improve through lineage

Data lineage enables you to better understand how your data is being used. However, it can also be used to automatically aggregate key information to instantly analyze and manage the dynamics of your portal as well. By understanding relationships between data you can better manage maintenance (such as when a dataset changes), enforce your data sharing strategy, and create and share KPIs that help you demonstrate the impact and ROI of your portal.

6

What are the essential capabilities and features for your data portal solution?

Data leaders are responsible for their organization's entire data strategy, and have a key role in maximizing the use of data, but also protecting it and ensuring it flows seamlessly around the business.



Features checklist for you data portal

You need the right technology to create your data portal and ensure it is used effectively by relevant audiences. Your data portal should therefore include these data management features:

Connectors to all internal and external data sources, including publicly available data hubs

Comprehensive data preparation, enrichment and metadata management features

The ability to **publish data and content in multiple languages**

Data crowdsourcing to collect feedback and data from your audiences

Advanced low-code/no-code visualization tools to quickly create visualizations

A wide range of data sharing options (APIs, websites, apps) with granular management of access rights

Data workspace functionality

Intuitive content management system (CMS) to create text, pages and resources

Data lineage to provide powerful tracking of data reuse

Automation API to automate portal management and data publication

Powerful capabilities to manage your data projects

Your data portal solution has to be built on key capabilities to ensure it is an effective component of your data stack:

Security

Protecting data, particularly personally identifiable information (PII), is a regulatory and reputational responsibility for all businesses. Data has to be protected from unauthorized internal and external access, and anonymized if required. Your data portal therefore has to be secure and protected against cyber attack, as well as enabling data access to be controlled based on user permissions and job roles. Look for a data portal that provides the highest levels of security, and is cloud-based to deliver additional specialist security knowledge and protection.

Scalability

The volume of data being created is ever-increasing, as is its importance to business. Your data portal has to be always-available, and robust enough to cope with enormous volumes of data from disparate systems. This requires a cloud-based platform that scales to meet changing needs, and can seamlessly contain and organize thousands of datasets with millions of data points and make them available to hundreds of thousands of users. Your data portal platform has to be reliable and available to all, 24x7.

Interoperability

Data portals are not standalone applications - they are at the heart of your data strategy. They therefore need to be interoperable to easily connect with all of your and your partner's potential data sources, now and in the future. To maximize reuse they also need to be able to publish and share data in all common formats and via APIs that integrate directly with business applications, such as BI tools, apps and websites.

User centricity

No matter how much data your portal contains, or how strong it is technically, if it is not built on the needs of your users it will not be a success. Your portal has to be visually appealing, provide an intuitive user experience akin to a top ecommerce website and encourage engagement, sharing and reuse. Look for a platform that can be tailored and personalized to your users' needs and company design guidelines while being easy to update if requirements change.

Multipurpose

Your data portal strategy might encompass an internal, employee-focused portal, an open portal for external stakeholders and multiple portals for specific partners or ecosystems. Ensure that the data portal platform you invest in can cover all of these use cases, and makes it easy to manage multiple portals from the same back-end solution to maximize efficiency.

Sovereign cloud

Organizations have increasing regulatory responsibilities when it comes to how (and where) their data is stored. For example, many countries have now introduced sovereign cloud regulations, requiring information to be stored in data centers within that country or region. Ensure your supplier is able to accommodate sovereign cloud requirements through partnerships with the right cloud infrastructure providers.

Data portal: Make or buy?

When assessing how to deliver your data portal, you have two clear options - you can build the underlying technology internally or partner with an external provider.

While developing your own solution does mean it should be a close fit for your requirements, it is resource-intensive both to create and support. Additionally your developers are unlikely to have created similar solutions before, meaning they'll be on a learning curve which can slow the project down. All of this adds considerably to cost and time, meaning your project could be hit by delays that impact your wider data strategy.

By partnering with a specialist data portal software provider you can overcome these issues. They'll have a deep understanding of the market, and experience to help you create your portal as quickly as possible, combined with robust software that's proven to deliver value. Ensure you partner with a company with strong expertise, an engaged customer community and a clear development roadmap to future-proof your data portal and enable future innovation.

Conclusion

Getting started with your data portal

In today's data-driven world, harnessing and sharing data with key audiences is a business imperative. Data access and use needs to be industrialized to deliver maximum value, providing everyone with the information they need, in an intuitive, user-friendly way.

Data portals deliver this seamless experience, providing a range of benefits, including better decision-making, increased transparency, and greater collaboration, along with the ability to launch new services and meet regulatory requirements. They connect users with the data they need in a simple, intuitive way that aids discoverability, access, and reuse.

Data portals are therefore an essential part of any effective data strategy. However, success isn't simply about collecting some data and launching your portal. You need to engage your user audiences and meet their needs by providing trustworthy data in formats that they can readily use without in-depth training.

Start by listening to your users and then build a portal based on their feedback that delivers an intuitive experience that encourages them to explore and reuse data. Work with data owners to provide high quality, relevant and well-governed data assets to ensure users trust the information shared on your portal. Make data compelling through tailored data visualizations that bring information alive via dashboards, maps, and data stories. Minimize administration and maximize impact by automating the collection, enrichment, and publication of data and continually analyze and improve portal performance.

To become truly data-centric organizations have to free the value currently locked in their data – effective data portals are essential to delivering this at scale across your ecosystem.

opendatasoft

Opendatasoft is the leader of data democratization and provides a Data Portal solution that empowers organizations to scale personalized and seamless data experiences in record time. Opendatasoft is the essential data solution to decrease costs and digitize services, increase and build new revenue streams, mitigate risks and manage crises.

Opendatasoft serves 350 customers in 25 countries, powering more than 3,000 data portals. Based on this experience, we've developed a unique expertise in data management, which we use to provide our customers with premium services to help them deliver use cases that meet their specific needs.

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