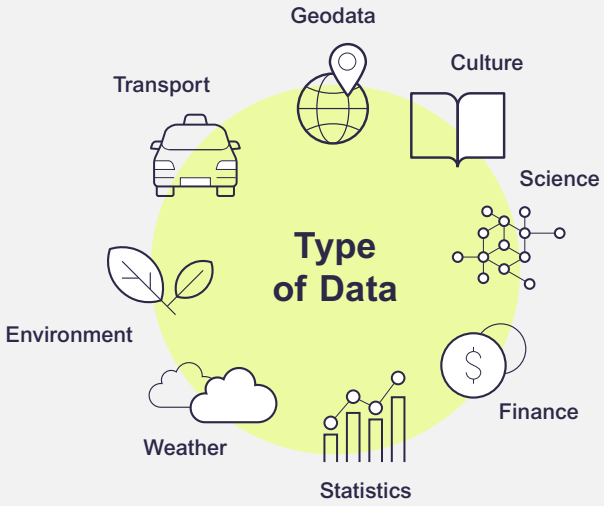
Open Data

What is Open Data?

Open Data is a practice which consists of making access to datasets public, allowing them to be used, reused and shared freely.

This data mainly comes from government agencies, private companies, international organisations and academic and research institutions. The practice promotes transparency, innovation, economic value creation and collaboration, by enabling the data to be reused across many areas.

Open data gives companies access to multiple types of data, allowing them to innovate and improve their competitiveness.



Every area is covered

- Administration
- Politics
- Population
- Legislation
- Education
- Statistics
- Crime and criminal law
- Science
- Law and public safety
- Energy
- Finance and economics
- Industry and services
- Trade
- Culture, media, news
- Sport
- Construction and housing
- Jobs
- Social protection
- Health
- Land and environment
- Geography
- Agriculture, forestry, viticul-ture
- Mobility and transport
- Tourism

« Access to open data is a real boon for businesses, providing valuable resources for them to innovate, create value and thrive. »

Laurent Niggeler, cantonal surveyor

REPUBLIQUE ET CANTON DE GENEVE
POST TENEBRAS LUX
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Learn more

Advantages for businesses

Open data creates many opportunities for businesses. Using open data, they can optimise internal processes, refine market studies, better understand their customers' expectations, and design innovative products and services.

Innovating and creating value

Access to open data drives innovation by allowing businesses to access and leverage data they could not collect themselves, to create new products, services and solutions. This creates economic value and promotes cross-sector collaboration which can be part of an open innovation approach.

Creating opportunities for growth

Open data can create and improve the customer experience, products and services, and contributes to improving the company's communication and image.

Developing new markets

Open data can help businesses identify new markets and better understand the economic, political, social and cultural contexts in which they operate.

Strengthening transparency and accountability

By making their data available, companies build trust with various stakeholders (such as customers, investors and regulators) through an approach based on digital (CDR) and social (CSR) responsibility, which in turn helps improve the company's reputation and performance.

Collaborating

Open data allows organisations from different sectors to share knowledge, practices and learnings. By making their data available, companies help enrich the data available to the community. Similarly, businesses benefit from the data available.

Sharing your data allows trust-based relationships to develop with customers and partners.

Be sure not to confuse open data with public data

Public data is information held by government or public entities, collected in the course of their activities and generally accessible to the public.
This data cannot always be reused. The conditions of use for public data should be checked before using it.

In summary: all **open data** is accessible to everyone, but not all **public data** is necessarily open.

How does it work?

1 Basic principles

Availability and access

Data must be distributed in open formats that a computer programme can read to guarantee access and interoperability. Ideally for the concept of open data, this data is usable, reusable and disseminated free of charge and without restriction, but in exceptional cases it be subject to an access fee.

Aggregation

Open data must be able to be associated with other data.

Universal use

Open data should be able to be used, reused and redistributed by everyone, without discrimination regarding people or usage purposes.

2 Data source

In Switzerland

The Open Government Data (OGD) strategic programme centralises the different data sources:

https://opendata.swiss

In Europe

The official European data portal brings together data from 35 countries, and provides access to 175 catalogues representing 1.5 million datasets:

https://data.europa.eu

International

The United Nations makes data available in areas including health, finance and research:

https://data.un.org/

3 Legal framework

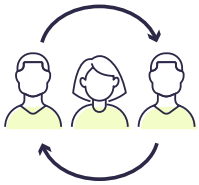
Open data is so called because its access, use, sharing and modification are authorised. However, open data falls within legal frameworks governed by specific laws depending on the country:

- In Switzerland, the “Federal Strategy for free access to public data” aims to promote open data, as well as the law on transparency (LTrans) and in some aspects the law on data protection (LPD).
- In Europe, it comes under the Digital Republic Act and certain aspects of General Data Protection Regulation (GDPR).
- In China, it comes under Personal Information.
- Protection Law (PIPL) and the Government Information Disclosure Regulations of the People’s Republic of China.
- In the United States, laws such as the DATA act (Digital Accountability and Transparency Act) and OPEN Government Data Act govern data provision.

Find out more

Find out about the laws in force in the countries that are providing the data you wish to use and make available.

Interoperability and standards



What is interoperability?

In open data, interoperability refers to the ability of different systems and technologies to work together, exchange and understand the same data. This is an essential characteristic for open data, as it allows data to be used and reused to maximise its accessibility, re-use and distribution.

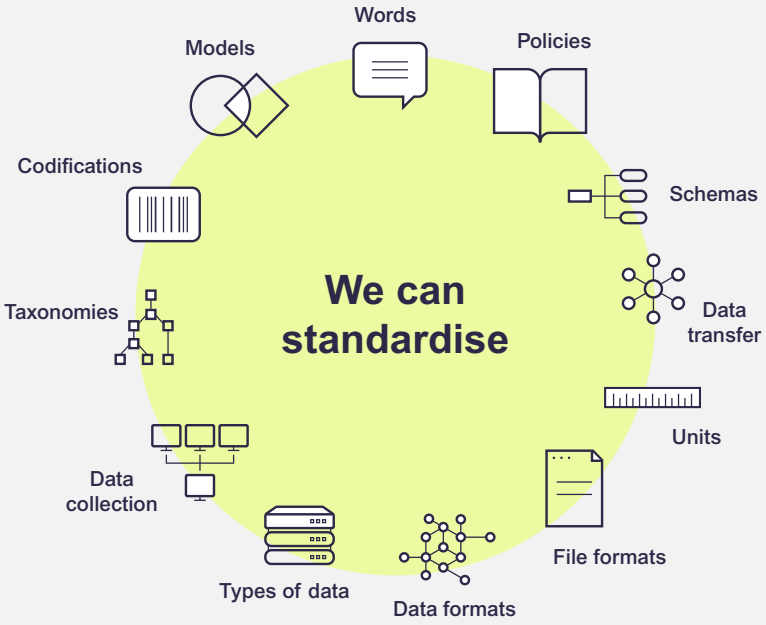
Users (companies and individuals) must be able to access data in standard formats that can easily be imported and used.

Suppliers should respect certain data exchange standards, such as the formats used (json, xml, csv, etc.), and consider using software communication interfaces (APIs) to simplify the data's integration, interoperability and accessibility. Open data that respects open standards is independent of any software and can be automatically used by a machine.

Using standards

Standardisation guarantees the quality, security and reliability of the processed data. It enables:

- Fewer resources for cleaning or reformatting data through automating and simplifying processes.
- Trust to be maintained among customers and business partners through the application of recognised standards and practices.
- Easier information sharing and collaboration, ensuring a better understanding of data within the company.
- Compliance with regulatory standards to be simplified at the level of industry and regulatory standards.



Which data can be useful for your business?

All economic sectors can benefit from open data. By leveraging open data, you can improve your company's strategic decision-making, transparency and operational efficiency. Here is a non-exhaustive list of examples for using open data:

Transport and mobility

Usable data: real-time traffic, traffic jams, accidents, parking availability, charging stations, people's movement flow, transport costs, public transport lines, public transport timetables, environmental impact of a trip, etc.

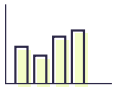
Example: a company specialising in waste collection optimised its trips by analysing historical traffic data and the road network to make trips with the best time and distance ratio.

Marketing and communication

Usable data: internet search trends, user engagement on social networks, consumption habits, demographic data, economic data, socio-cultural trends, people's movement flows, etc.

Example: a communications agency analysed people's movement flows and traffic in real time to optimise billboard locations and maximise their visibility.

Finance



Usable data: economic indicators for different countries, purchasing power, exchange rates, central bank data, financial securities data, availability of raw materials, companies' regulatory and financial data, etc.

Example: a start-up in finance developed an investment advice service based on central bank data and purchasing power data to offer an automated service providing personalised investment recommendations.

Insurance

Usable data: demographic data, public health data, weather data, geographic data, natural disaster data, traffic accident data, crime rates, etc.

Example: an insurance company uses demographic and geographic data along with hazard map data to establish insurance offers adapted to companies.

Health

Usable data: public health data, disease and epidemic data, medical research, demographic data, behavioural habits, healthcare costs, list of medications and package inserts, etc.

Example: a pharmacy leveraged disease and outbreak data, demographics by geographic area, and internet searches to anticipate demand for certain medications.

Which data can be useful for your business?

Energy

Usable data: consumption of electricity, gas and water by sector, energy production by country and by source, solar cadastre data, evolution and comparison of energy prices, CO_2 emissions, weather data, etc.

Example: a company set up a solar power plant on the roof of its buildings after analysing its building's exposure using the solar cadastre, as well as determining potential gains from reselling solar electricity and self-sufficiency based on electricity price variation data.

Production

Usable data: prices and availability of raw materials, data on machine performance, consumption trends, weather data, evolution and comparison of energy prices, etc.

Example: a company facing an increase in energy costs analysed variations in energy prices against its high production periods to determine the need to replace equipment with less energy-consuming options and anticipate cost spreading.

Tourism

Usable data: geographic data, weather data, hotel reservation data, hotel, restaurant and activity rating data, events calendar, public transport lines and timetables, museum opening times, etc.

Example: a hotelier anticipated busy periods by cross-referencing the events calendar for the year with data on the sector's occupancy rate in previous years.

Retail trade

Usable data: demographic data, business location data, data on activity types, consumption trends, logistics and transport data, people's movement flows, etc.

Example: an entrepreneur chose the location for her business by analysing demographic data and business location data to identify the best location in terms of ease of access, footfall and competitiveness.

Buildings

Usable data: geographic data, energy and building performance data, solar cadastre data, basement cadastre data, mobility infrastructure, data on subsidies and incentives, etc.

Example: a property developer used data on people's movement flows and land registry data to identify the best locations for new residential and commercial developments.

Food industry

Usable data: people's movement flows, geographic data, food price data, nutritional data, booking data, evaluation data, consumer preference data, etc.

Example: A restaurant owner cross-referenced weather data with changes in the cost of raw materials on the markets. This allowed him to anticipate price variations and buy his food at the best price, designing his menus based on weather forecasts. With this approach, he can ensure rapid product rotation and avoid food waste.

How to use open data

1 Explore the different data sources available

Consult datasets on portals such as Swiss Open Data ***(opendata.swiss)***, European Data ***(data.europa.eu)***, UNdata ***(data.un.org)***, etc.

2 Learn about data structures

Find out about the different data formats that are available and usable within the company, as well as the data file formats (such as .csv, .json, .xml, .db) that can be read by the company software. Learn about the specifics of different file formats, the granularity of the data available, and how the data is structured.

3 Determine your needs and objectives

Define the precise objective you want to achieve and target the relevant data.

4 Access the data

Download your selected datasets based on the available formats. Some websites provide direct download links for open datasets. These links allow you to download files in csv, json and xml formats, which can be used with tabulator such as Excel, Calc and Numbers, or with dedicated analysis tools.

It is also possible to automate data access and exchange through application programming interfaces or APIs. These interfaces allow you to connect your software and databases to other computer systems. Call on a specialist to help you if necessary.

How to use open data

5 Train your teams to use open data

It is essential that your teams are trained in using open data so that the company can fully benefit from its potential and identify areas for improvement.

Employees know the company's business processes, and will be able to contribute their expertise by taking advantage of open data and developing new opportunities.

Teams should be involved from the start of open data projects. This makes it possible to set up or develop a corporate culture based on innovation.

6 Clean and prepare your data

Remove unnecessary information and format it so that it's ready for use.

7 Analyse and visualise the data

To extract and visualise insights from data, specific data analysis tools, programming languages or software should be used, such as Metabase, Apache Superset, Knime and Tableau Public, PowerBi Desktop, Qlik, etc.

These tools not only make it possible to analyse the data in depth, but also to visualise and manipulate different types of information, for example data from maps such as customers' locations by address, post code or municipality.

8 Develop applications or projects

Open data can be used to enrich company software, maintain databases, and develop mobile apps, interactive dashboards, map tools and other innovative projects.

Helpful to know!

Organisations that make data available use licenses to indicate the data's terms of use. These can be "standard" licenses, such as

Creative Commons, or "tailor-made" licenses with reuse conditions.