

Data Asset Management and Data Compliance

Overview

- Introduction of data-driven digital economy in China
- Data asset management
- Data compliance

Digital economy

- To promote a more unified economy of fairness and efficiency, digital economy uses [data resources](#) as key elements, modern information networks as the main carrier, and the integration and application of information and communication technology and the digital transformation of all factors as important driving forces.



In 2020, “Opinions of the Central Committee of the Communist Party of China and the State Council on Constructing a More Perfect Institutional Mechanism for the Market-based Allocation of Factors” were released , **data** was listed as a new type of production factor alongside **land**, **labor**, **capital** and **technology**.

“Data 20 Articles”

- In December 2022, “Opinions of the Central Committee of the Communist Party of China and the State Council on Building a Data Basic System to Better Play the Role of Data Elements” (“Data 20 Articles” for short) was released, which is [China's first basic document specifically for data factor](#).
- It involves the establishment of a property system, a circulation and trading system, an income distribution system and etc..

National Data Administration

- In October 2023, China established the [National Data Administration](#).
- It will be responsible for advancing the development of data-related fundamental institutions, coordinating the integration, sharing, development and application of data resources, and pushing forward the planning and building of a digital China, the digital economy and a digital society.

National Data Resource Survey Report (2023)

- According to the National Data Resource Survey Report (2023), China generated 32.85 zettabytes of data in 2023, up 22.44 percent year on year.
- By the end of 2023, the scale of computing power across more than 2,200 computing centers nationwide had grown by approximately 30 percent year on year.

“Data Element X” initiative

- In January 2024, China launched the “Data Element X” initiative for year 2024 to 2026.
- The data use will be boosted in 12 sectors, from manufacturing and finance to technological innovation and green and low-carbon development.



times symbol

Best practice: an award of “Data Element X” case competition

- Data-Driven Collaborative Governance and Intelligent Control of Urban Waterlogging and Flooding



Shenzhen integrates meteorological, riverway, and other government public data, and develops systems for drainage management and hydraulic modeling to control the waterlogging the flooding.

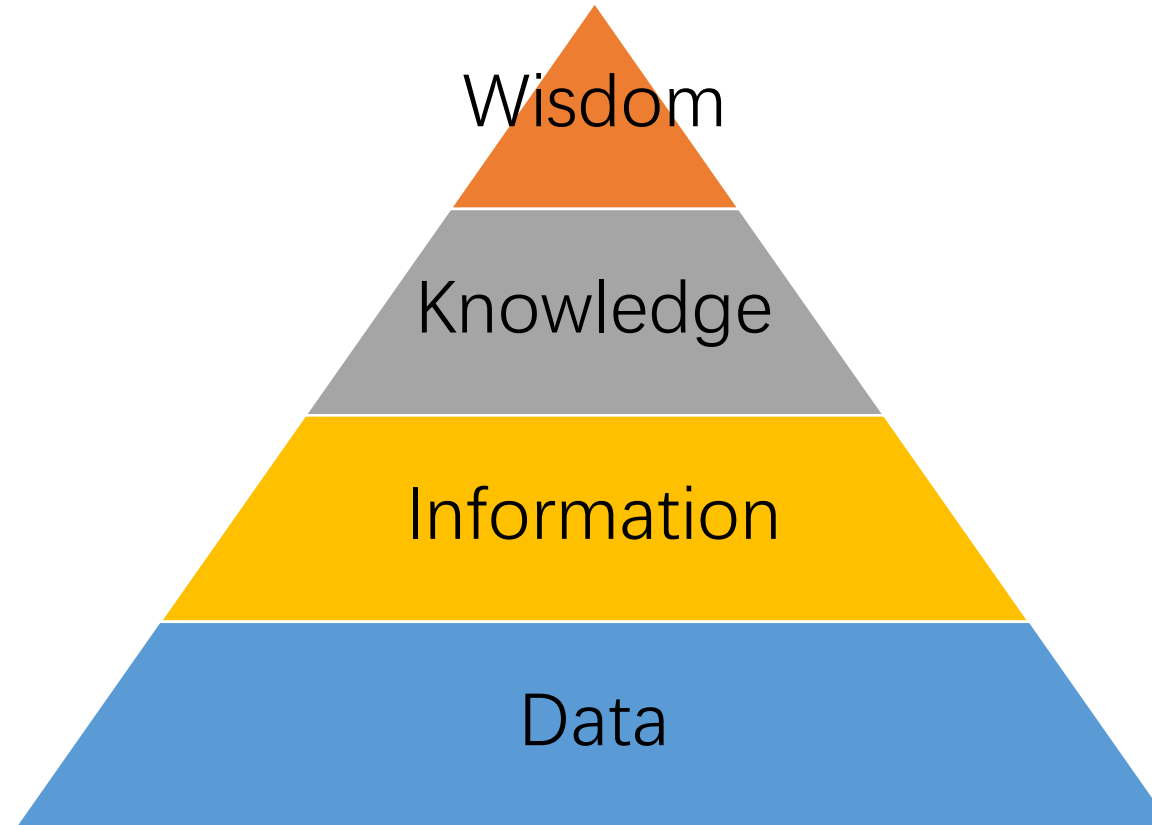
Data asset management

Regulations and standards:

- In December 2023, Ministry of Finance in China released “[Guidance on Strengthening Data Asset Management](#)”.
- In July 2024, the International Standards Organization released standard ISO 55013 – “[Asset management: Guidance on the management of data assets](#)”.

Data Asset Management

Data



Types of data

- We mainly focus on data in [electronic form](#).
- Structured Data: Data organized in rows/columns (e.g., databases).
- Unstructured Data: Emails, documents, images, videos.

How can we differentiate data and software?

- Software drives the processing and analysis of data, and data provides input and output to software.
- The parts that are used to control the computer, perform tasks, and something to implement functions, interfaces, and processes are identified as software. The stored text, images, audios, videos, etc., are recognized as data.

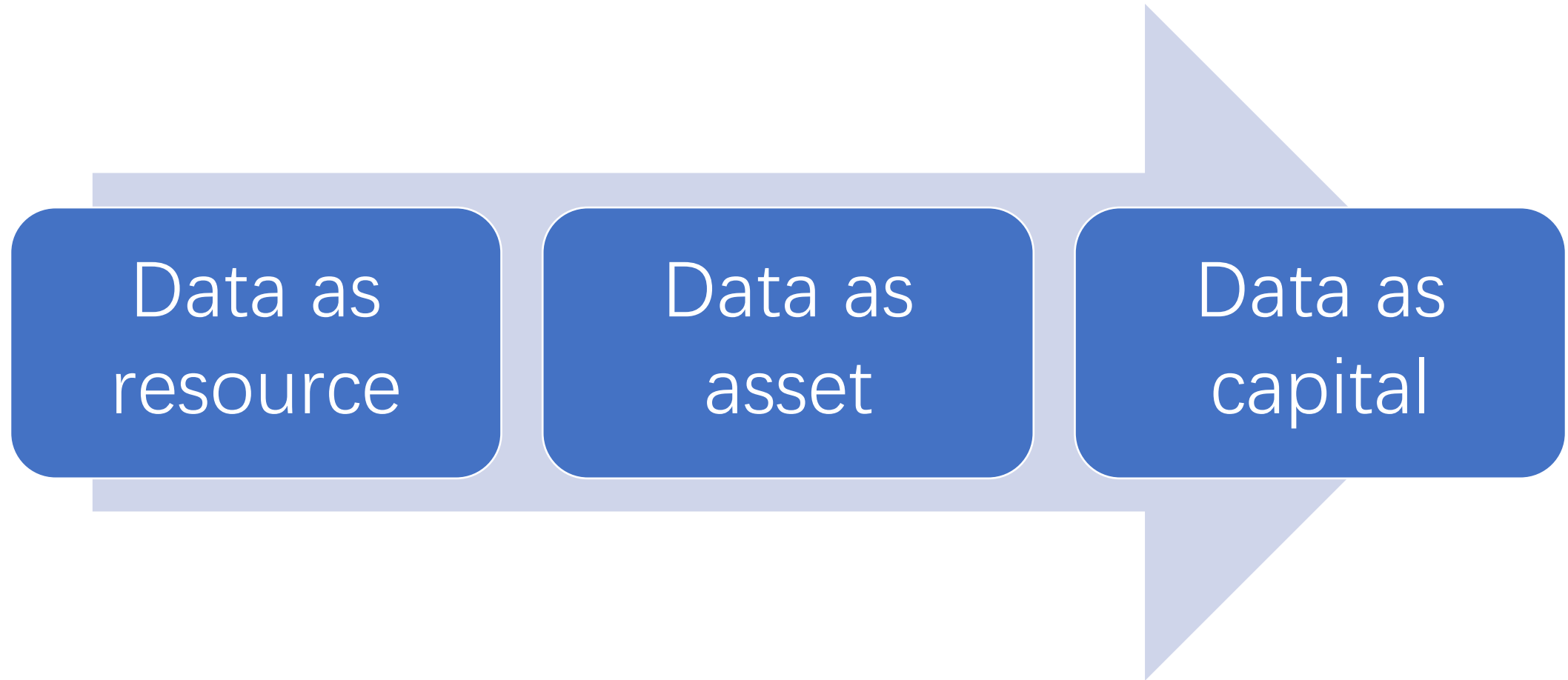
What is data asset?

- Data assets are data resources that are legally owned or controlled by a specific entity, can be measured monetarily, and can bring direct or indirect economic benefits.
- Data assets refer to collections of asset data that has the properties of an asset.

Difference between data and physical assets

- **Duplication:** data is easy to duplicate and transport, but not easy to recreate if lost or compromised.
- **Multiple uses and users:** data can be used by multiple people for multiple purposes simultaneously.
- **Volume management:** using data often leads to the creation of more data, all of which has to be managed.
- **Property rights:** very complex and the property rights protection needs strengthen.

Data value creation



Example: use data as resource

- By analyzing purchase history, browsing patterns, and other behavioral data, Alibaba develops the personalized recommendation system.



Example: recognize data as an asset



- China Unicom recognize data as assets in the financial statement in 2024.
- The data assets are databases and models that provide support for existing data products and services.
- The book value of data asset is about 85 million RMB.

Example: data asset-backed financing

- A listed firm called Rock Control Technology has valuable data on atmospheric environmental quality monitoring and service.
- The firm has obtained a data asset-backed financing loan of 10 million RMB.

Content of data asset management

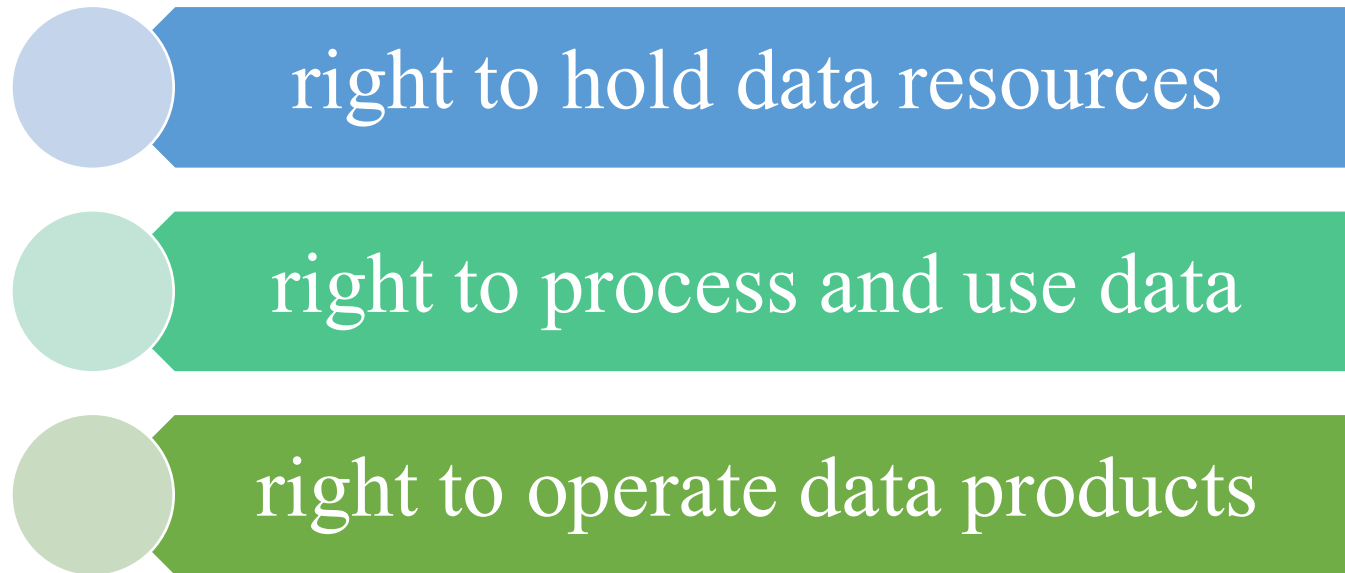
- Lifecycle of data asset
- Clarification of data property
- Recognition of data as an asset
- Data asset valuation
- Data asset exchange

Lifecycle of data asset

- Define: Establish form, structure and meaning of the data.
- Collect: Acquire and gather data.
- Store: Locate for retrieval, including virtual storage.
- Report: Analyze for decision-making.
- Decide: Make decisions based on evaluation, including those made through automation.
- Distribute: Circulate data externally – including formal reporting, as well as sale of data.
- Dispose/Archive: Remove obsolete data.

Clarification of data property rights

- Under “Data 20 Articles”, the data property rights covers three dimensions.



Right to hold data resources

- It refers to the right of data holders to independently manage and control the data resources obtained through legal means, in accordance with legal provisions or contractual agreements, and to have the right to exclude others from infringing upon this state of control.

Right to process and use data

- It can be further subdivided into the [right of data processing](#) and [the right of data usage](#).
- The right of data processing refers to the right to conduct processing activities such as refining, analyzing, and calculating data within the restrictions stipulated by law or agreed upon in a contract, provided that the data has a legal source.
- The right of data usage refers to the right of the data demander to use legally obtained data resources or data products within the scope stipulated by law or agreed upon in a contract, typically through methods such as data sharing and data trading.

Right to operate data products

- It refers to the right to engage in marketing, sales, and obtain profits within a legal scope for data products formed through the processing of data resources obtained through legal means, within the limits prescribed by law or agreed upon in a contract.

Data asset registration

- Data asset registration refers to the registration of data assets conducted by **government administrative departments** in accordance with the law, or the registration of data assets carried out by third-party institutions designated or entrusted by administrative departments in accordance with relevant standards.



Recognize data as assets

Regulations:

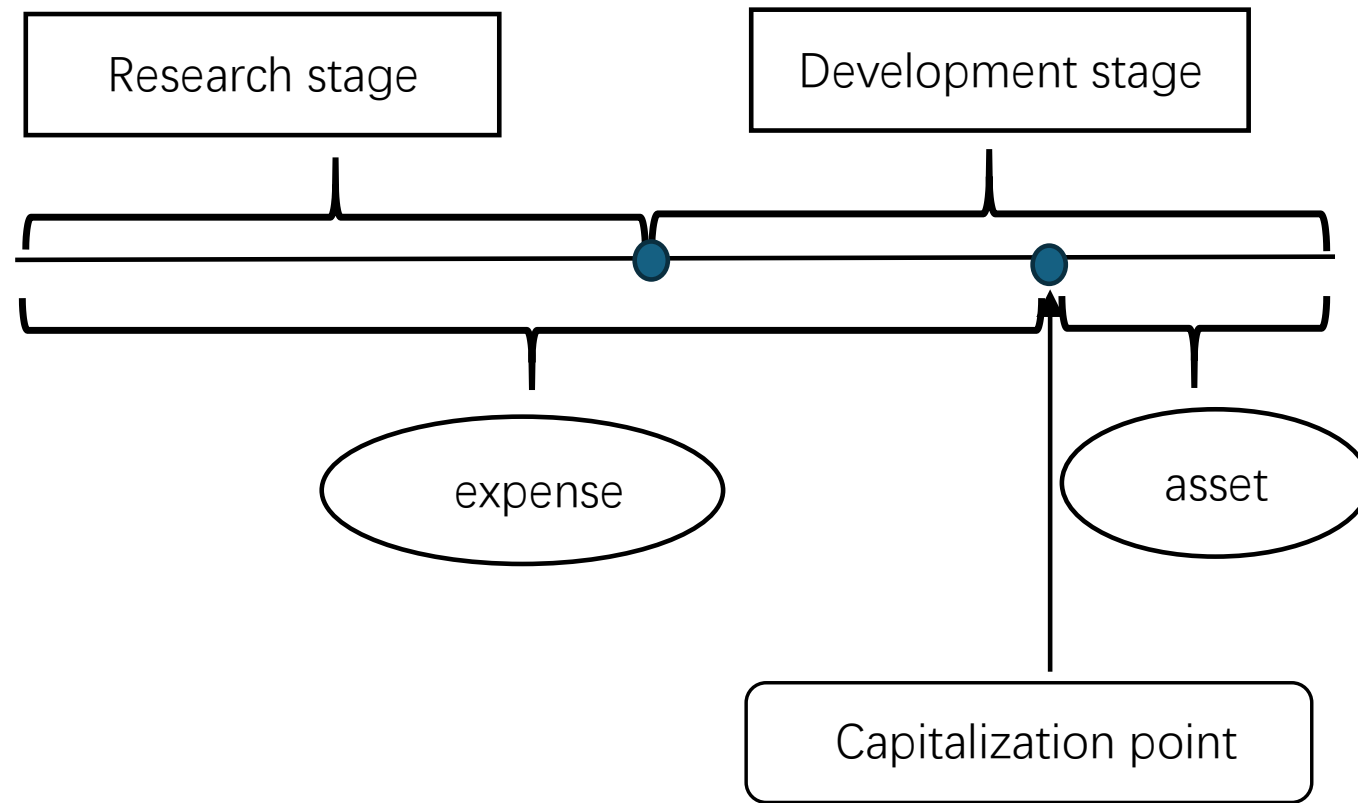
- In August 2023, Ministry of Finance in China released “ [The Interim Provisions on Accounting Treatment of Enterprise Data Resources](#)”.
- It stipulates the scope of application of the provisions, the principles of accounting for data resources, and the presentation and disclosure requirements on enterprises regarding their data resources.



Can enterprise recognize the following data as its asset?

Way of data collection	Content	Is it an asset?
Obtain data using hacking	The mobile phone number, home address, etc., of social networking site users	No.
Download open-source data for free	National laws and articles, judgments, etc.	No.
Log in to a database as an ordinary member	Macroeconomic data	No.

Capitalization of R&D expenditure



Cost of data asset

- Cost of acquisition
- Processing cost
- Storage cost
- Management cost

Data asset valuation

Document:

In September 2023, China Appraisal Society released “[Guidance on Data Asset Valuation](#)”.

Steps of data asset valuation

- **Clarifying the Assessment Target:** it is necessary to clarify the assessment target, assessment purpose, assessment base date, assessment scope, application scenarios, value type, and the users of the asset valuation report.
- **Understanding Data Asset Attributes:** The attributes includes informational attributes (e.g. data sources, structure, scale, etc.), legal attributes (e.g. data property, data permissions, etc.), and value attributes (e.g. data cost information, data application scenarios, etc.).
- **Select the proper methods of data asset valuation.**

Methods of data asset valuation

- Cost approach/Replacement cost approach
- Income approach
- Market value approach/Current market value approach

Cost approach/Replacement cost approach

$$\text{Value} = \text{Replacement Cost} * \text{Value Adjustment Coefficient}$$

- **Replacement Cost:** It includes upfront costs, direct replacement cost, indirect replacement cost, profits, and related taxes and fees.
- **Value Adjustment Coefficient:** This is a coefficient used to adjust for the differences between the expected condition corresponding to the total investment in the data asset and the actual condition of the data asset at the assessment base date. For example, it can be a coefficient used to adjust for the difference between the expected quality and the actual quality of the data asset.

Data asset exchange

- Data exchange is a platform or marketplace specifically designed for the interaction, integration, exchange, and trading of data.
- According to Digital China Development Report (2023), more than 20 provinces and cities in China have established specialized data trading exchanges.

Example: Shenzhen Data Exchange

- In December 2021, Shenzhen Data Exchange was established.
- It has developed service capabilities covering the whole chain of data trading from the four aspects, including compliance guarantee, circulation support, supply and demand linkage as well as ecological development.
- The trading volume on the Shenzhen Data Exchange has exceeded **14 billion** RMB, including 247 million BMB in cross-border transactions.

Importance of data compliance

- Meet data-related regulatory compliance requirements
- Protect reputation
- Builds trust with customers and stakeholders
- Safeguard privacy and security
- Ensures the protection of customer and employee data.

Law in China:

- Civil Code of the People's Republic of China (2020)
- Network Security Law (2016)
- Data Security Law (2021)
- Personal Information Protection Law (2021)

Regulations in China:

- Regulations on the Security Protection of Computer Information Systems (2022)
- Methods for Identifying Illegal and Irregular Collection and Use of Personal Information by Apps (2022)
- Regulations on the Protection of Minors Online (2023)
- Some other regulations

Data Compliance

Content of data compliance

- Compliance in data collection
- Compliance in data storage
- Compliance in data processing
- Compliance in cross-border data transfer
- Compliance in data publication

Compliance in data collection

Data resource	Activities
Data from internal use	Conduct compliance reviews mainly from the aspects of data independence, application independence, and enterprise qualifications.
Data from public	Conduct compliance reviews on the content, methods, and targets of data collection, as well as based on data collection strategies, data collection fields, the nature of collection targets, risk prevention measures, monitoring and management, etc.
Data obtained by agreements	Conduct compliance reviews on the authorized license content and qualifications of the partner.

- When collecting **personal information** in the process of providing products and services, we should adhere to the **principle of minimum necessity**, only collecting personal information that is directly related to the realization of the business functions of the product or service. If we need to use data collected in the process of providing products and services, they shall obtain the prior authorization and consent of the relevant data subjects.

- When using [web crawlers](#) to collect data, we must abide by laws and regulations, industry self-regulatory conventions, respect the crawler agreement and rules of the website being crawled, and assess beforehand the potential impact on the performance and functionality of network services, in order to avoid interfering with the normal functions of network services or impeding the normal operation of computer information systems.

Compliance in data storage

- Select storage devices and media with appropriate security performance, protection levels, and security grades.
- Standardize the use, operation, maintenance, and troubleshooting of storage devices and media.
- Establish control mechanisms such as approval processes and logging for the transfer and use of data storage devices and media.
- Strengthen the physical security and encryption management of storage devices and media.

- When using [third-party cloud platforms for data storage](#), we should require cloud service providers to regularly report information on the operational status and security condition of the cloud platform. Additionally, they should periodically audit the stability of the third-party cloud platform and the security measures implemented to ensure that it possesses sufficient data security protection capabilities.

- We should establish a **backup and recovery mechanism** for important data and personal information, determining the scope, frequency, methods, and procedures for data backup. They should also regularly conduct recovery tests and integrity checks on backup data to prevent risks such as accidental damage or loss of data.

How long should the enterprise store the data?

Data	Storage time
Personal information collected and business data generated by the online ride-hailing platform	More than two years
Electronic medical records for medical use	More than thirty years
Customer information held by securities companies	More than twenty years

Compliance in data processing

- Establish data models and data directories;
- Conducts data processing activities such as data conversion, aggregation, cleaning, and analysis;
- Formulated management measures for data cleaning and data analysis, and established technical measures such as a data processing evaluation mechanism, data operation log recording, monitoring, and auditing.

Compliance in data transmission

- When we provide, share, or entrust third parties with data processing due to legitimate business needs, we should conduct prior qualification reviews of the data recipients and assess their data security protection capabilities.
- If important or sensitive data is involved, corresponding log records should be retained.

Compliance in cross-border data transfer

Regulations:

- Regulations on Promoting and Regulating Cross-border Data Flows (2023)
- Measures for Security Assessment of Cross-border Data outflows (2022)

- We should identify and declare **important data** in accordance with relevant regulations.
- If the data has not been notified or publicly announced as important data by relevant departments or regions, the data processor is not required to declare it as important data for the purpose of the security assessment of data outflows.



Example: important data for the car manufacture

- Geographic information, personnel flow, and vehicle flow data from important and sensitive areas such as military administrative zones, defense science and technology industrial units, as well as party and government organs at the county level and above.
- Data reflecting economic operations, including vehicle flow and logistics.
- Operational data of electric vehicle charging networks.
- Exterior vehicle video and image data containing facial recognition information, license plate information, etc.

Apply for security assessment of data outflows:

- The **operator of critical information infrastructure** providing personal information or important data to overseas entities;
- Data processors other than the operator of critical information infrastructure providing important data to overseas entities, or cumulatively providing personal information of more than 1 million individuals (excluding sensitive personal information) or sensitive personal information of more than 10,000 individuals to overseas entities since January 1st of the current year.

Compliance in open data

- Open data may have significant impacts on national security, social and public interests, personal dignity, or the safety of life and property.
- The [government](#) establishes an open government data catalog, which categorizes government data into shared government data, openable government data, and government data that are not suitable for open.



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<https://data.xm.gov.cn>

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XIAMEN OPEN DATA



- Open data respects social morality and ethics, complies with business ethics and professional ethics, and does not infringe upon the legitimate rights and interests of the country, society, and others;
- The government should take corresponding technical measures to ensure data security and to protect the disclosed data;
- The government should conduct risk monitoring for its data open activities and whether it immediately takes remedial measures when discovering risks such as data security defects.

The end.