ADX
ASTANA DATA EXCHANGE

DATA ECONOMY CONCEPT

From raw data to an economic asset

Regulated infrastructure that turns data into a product, a deal and a measurable asset.

This document explains why a market for data products is emerging in Kazakhstan, the role ADX plays in it, and how data suppliers and buyers can take part.

ASTANA
2026

WHY IT MATTERS

Data is now a factor of production, but the market has not taken shape

Artificial intelligence, credit scoring, risk management, logistics and government decisions all run on data. Data is becoming a factor of production on par with capital, labor and knowledge. Unlike them, though, it still has no working market of its own.

Labor	Land	Capital	Knowledge	Data ?
labor exchanges, contracts	cadastre, registries	banks, exchanges, funds	patents, licenses	no institution yet

Labor, land, capital and knowledge each have their own market institutions. Data still needs them: a defined rights holder, price, quality, security and access rules.

FOUR SYSTEMIC BARRIERS

01

The market is fragmented

Deals go through personal contacts, closed data dumps and one-off swaps. It is hard for a supplier to turn data into a repeatable product.

02

Low trust in provenance

Buyers struggle to verify the source, quality, timeliness, rights holder and permitted uses.

03

Compliance risks

Opaque trading raises the risk of regulatory breaches, rights disputes and reputational damage.

04

Data security

Leaks, unauthorized access and weak control over how data is used undermine trust in the market.

A data market appears once these barriers fall. When a product has a source, documentation, rights, quality, a price, a buyer, trust and a deal history. That takes a trusted venue, shared rules and a track record of real deals.

GLOBAL CONTEXT

The world is shifting from accumulating data to trading it

Major economies are already shifting from digitizing data to capitalizing on it: data is being accounted for, licensed, moved through regulated spaces and used to build AI.[1]

China

Is moving to account for data as an economic resource: corporate data can be reported as intangible assets or inventory.[2]

Europe

Is building regulated data spaces where sharing rests on trust, interoperability and owner control.[3]

USA

Is growing a market for licensing data and content to generative AI. Platforms and media houses are signing deals with AI companies.[4]

FROM OPEN DATA TO DATA PRODUCTS

The global AI race has sharply raised demand for data. Open data gave research and model training a base layer, but that layer is running out. Open datasets often lack updates, an owner, documented quality and a clear legal status.

There is growing demand for unique, legitimate, industry-specific and regularly updated data. This shift is called **Great Data Products**[5]: data brought to product level, with documentation, quality and a clear use case. Only commercialized, maintained data products hold real value as an asset.

2026–2032

According to **Epoch AI**, on current trends, models may use up the stock of high-quality, human-made public data between 2026 and 2032.[6]

That drives demand for niche, commercial datasets: unique, industry-specific and regularly updated.

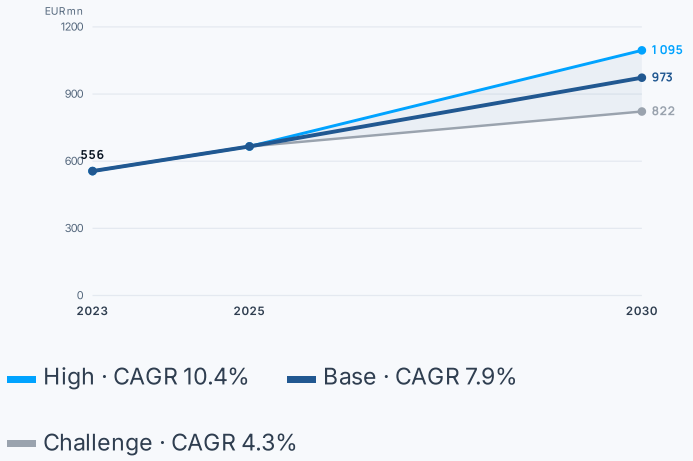
> A data market is coming either way. What matters is joining the global data economy and finding a niche in commercializing and capitalizing on data.

KAZAKHSTAN DATA MARKET

The market is already measurable and steadily growing

IDC puts Kazakhstan's data market at EUR 556 mn in 2023, and it keeps growing.[7] The wider data economy is estimated at EUR 2.7 bn, about 1.3% of GDP against ~5% in the EU, which shows both today's scale and the room to grow.

Data-market growth scenarios to 2030

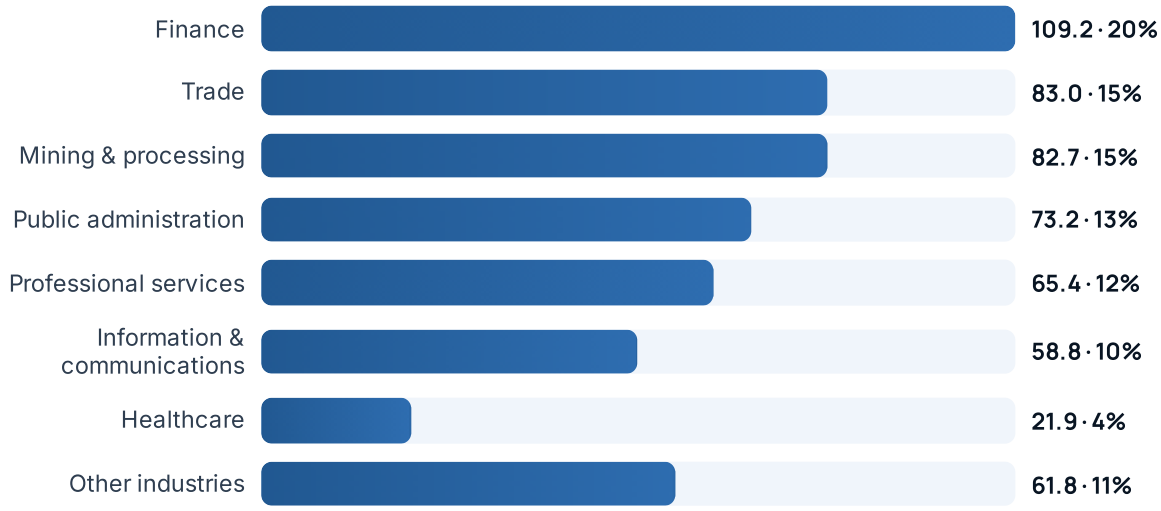


EUR 556 mn → EUR 973 mn
Kazakhstan market growth by 2030 (base case, IDC).

2 750
data suppliers
0.7% of companies (EU: 2.8%)

4 813
data consumers
1.1% of companies (EU: 3.7%)

MARKET STRUCTURE BY INDUSTRY · 2023, EUR mn



Source: IDC Kazakhstan Data Market Study, 2024.

WINDOW OF OPPORTUNITY · DIGITAL CODE

The Digital Code institutionalizes the data market

Kazakhstan has invested for years in e-government, state systems and Smart Data Ukimet. Those platforms handle government data inside the state. Commercial trading of data products among all market players needs a new kind of regulated platform, and the Digital Code lays that foundation.

The Digital Code brings data products into the legal framework[8]

For the first time, digital data products have a legal regime: a legitimate route to trade, own, transfer rights and circulate them. The state sets the rules (standards, norms and data protection), and the private sector builds the market infrastructure.

IN FORCE SINCE 12 JULY 2026

1 — Registry of platforms

The Digital Code sets the legal basis for trading digital data products and for the platforms that host them. ADX is listed in the state registry of data-product platforms.

2 — Registration and listing

Data products are documented, checked for quality and compliance, and listed as tradable units.

3 — Measurement and market policy

The regulator (ASPIR) sets data-market policy and tracks trading volumes, demand and prices.

4 — Data as an asset

Where legal and accounting conditions are met, data products may be recognized as assets.

WHAT THIS GIVES THE MARKET[9]

Monetization
lawful data-product trading and income for market participants

Value accounting
valuation of data products → basis for value accounting

Financing
data products can support financing where legal and accounting conditions are met

Measurability
a foundation for market policy and investment

PROSPECTS OF THE DATA ECONOMY

Kazakhstan can become a next-generation data market

Picture an economy where data works as a real asset, creating new products, companies, jobs and value.

01

Data becomes part of company value

Data products may be recognized as assets where legal and accounting conditions are met.

02

Government decisions become faster and more precise

Big data and digital footprints add to surveys and reporting, so changes show up in near real time.

03

Data owners gain new revenue

Companies, platforms and industry operators share data on controlled terms for analytics, scoring, AI, healthcare and finance.

04

New AI companies emerge

Unique industry datasets become the basis for AI products in medicine, agriculture, finance and industry.

05

Data works across industries

Farming brings together satellite, weather and logistics data. Fiscal data helps retailers read demand and spot niches.

06

Data-product trading becomes more transparent

Source, rights, access terms and update history are logged in a trusted environment, leaving less room for grey-market data dumps.

07

Jobs and value are created

New demand for analysts, data engineers and AI specialists. The OECD estimates the effect at up to 2.5% of GDP in newly created value.[10]

08

People take part in the data economy

The digital footprint shifts from a liability to a protected asset, used only with consent, clear rights and a share of the revenue.

DATA MARKETPLACE · DATA EXCHANGE

ADX: a platform for trading, recording and valuing data products

ADX is a data-product exchange platform, built together with government, business and technology partners.

- ADX is listed in the state registry of data-product platforms

MISSION

To help data owners turn their data into products, and help buyers use it safely and legally for decisions, AI and new services.

Think of a stock exchange. Just as an exchange gave capital rules, a price and trust, ADX brings the same to data products. One-off deals can still happen directly, but a real market needs a venue, listing and a process you can verify.

THE DATA-PRODUCT JOURNEY

Raw data › Product › Listing › Valuation › Deal › Use › Raising financing

A typical marketplace just shows a catalog. **ADX does more.** It runs four market functions and earns from supporting deals and services, without competing with data owners:

Data-product exchange platform

- listing data products
- searching and comparing offers
- running pilot projects
- deal support

Data lab

- identifying potential products
- packaging data into a product
- describing use cases
- preparing for listing

Deal-structuring center

- finding buyers and suppliers
- designing access models
- supporting pilots
- building best practices

Recording and valuation infrastructure

- history of listings and deals
- demand analytics
- market benchmarks
- valuation of data as an asset

HOW IT WORKS

Two modes of a deal on ADX

The data market works both ways: supply can come from a provider, or form around a specific buyer request. ADX supports both and brings the parties to a deal. (illustrative scenarios)

MODE A · SUPPLY-DRIVEN

Supply-driven

1 **Supplier lists data**
A bank or telecom lists an anonymized dataset, aiming to turn it into a repeatable product.

2 **Packaging into a product**
ADX documents the source, quality, rights and use case, producing a dataset, data service or data application.

3 **Listing and demand**
The product is published in the catalog; buyers find it, compare and request a pilot.

MODE B · DEMAND-DRIVEN

Demand-driven

1 **Buyer formulates a request**
A bank or retailer needs a specific data product, say for scoring or demand analysis.

2 **ADX finds a source**
The platform finds a supplier and sets up an access model and terms to fit the buyer.

3 **Tailored delivery**
The product is built and delivered to order, from a storefront or API to a full industry application.

ADX supports the deal through the platform

In both cases ADX helps the parties agree terms, manages the contractual workflow, supports delivery and confirms the deal is done.

Data-product certificate
Where needed, an asset certificate that reflects the assessed value and quality.

Licensing without resale
Data is licensed for an agreed use case, with no right of resale.

TYPES OF DATA PRODUCTS

Dataset: a set of data with description, quality and rights.

Data service: access via API or storefront without transferring the dataset.

Data application: a ready solution, index, rating, geoanalytics.

WHAT IS TRADED ON THE DATA MARKET

Planned product directions on ADX

Data markets are already running worldwide, from business registries and geoanalytics to industry indices and AI datasets. Below are typical products and real deals from data exchanges.

Business registry and legal-entity data
Counterparty checks, scoring, leasing, due diligence.

Fiscal and transactional data
Demand analysis, SME dynamics, industry indices.

Mobility and geoanalytics
Flow assessment, tourism, site selection, development.

Transport and logistics analytics
Routes, traffic, freight flows, network planning.

Medical and anonymized health data
Research, pharma, insurance, public health.

Electricity and utilities consumption
Energy efficiency, load forecasting, tariff policy.

IoT and sensor/device data
Industrial monitoring, smart city, telemetry.

Industry indices and AI datasets
Models, forecasts, R&D, specialized AI products.

INTERNATIONAL EXAMPLES OF DEALS ON DATA EXCHANGES

Shanghai Data Exchange · Smart City
Comprehensive city data from Daqing was listed on the Shanghai Data Exchange at a valuation of about USD 26 mn.

Shenzhen Data Exchange · Electric Power
Ningbo Bank approved a loan to an electronics maker based on electricity-consumption data via the Shenzhen Data Exchange.

Beijing Data Exchange · ESG
Environmental-sensor data was sold to companies for compliance monitoring and sustainability reporting.

Shenzhen Data Exchange · SmarTag
A foreign hedge fund bought SmarTag, a product that turns Chinese-language news into machine-readable metadata.

Sources: ADX materials; «Unleashing the Economic Potential of Data in Kazakhstan» (ASPIR, QAZSTAT, Shanghai Data Exchange, 2025).[9]

PRACTICAL VALUE

Why companies benefit from working through ADX

Data supplier

Access to buyers, support in packaging the product, a pilot listing, deal support and a record of demand.

Data buyer

One place to search, clear product descriptions and terms, the option to pilot, and a short path to use.

Government and quasi-public sector

A managed way to circulate significant data and turn it into standardized products.

New data-market companies

A growth channel: industry indices, analytical storefronts, API services and datasets for training AI.

WHAT A COMPANY GETS ON ADX

Transparent deals

Deals run on a platform registered under the Digital Code.

Clear provenance

Each product's source, rights and quality are documented and can be verified.

Data as an asset

Data products may be recognized as assets where legal and accounting conditions are met.

Financing

Where legal and accounting conditions are met, valued data products can support recording and future financing.

WHY ADX

Legal basis

ADX is designed to operate under the Digital Code within the state registry framework.

Partnership model

Built with the state and the private sector: suppliers, buyers and partners.

International ties

Shanghai Data Exchange is an official project partner; membership in the World Data Organization (WDO).

Team expertise

Hands-on experience in data monetization and management, from product to deal.

TRUST AND SECURITY

Security — a priority for ADX

A data market cannot grow without trust. Personal data is not freely traded: it may be used only within the law, within set limits and, where required, with the owner's consent.

Part of ADX's job is to shrink opaque and unlawful data trading, through a legitimate environment, clear rules and a visible usage history for every product.

TRUST IS BUILT THROUGH MECHANISMS

- a clear product source
- documented usage rights
- transparent access terms
- control over sensitive data
- verification of use cases

ADX PRINCIPLES

Legitimacy
Lawful grounds for listing and use.

Trust
Clear provenance, terms and limitations.

Control
The owner retains control over the data product.

Usefulness
Each product solves a specific task.

Fairness
Value goes to creators, owners and users.

Innovation
The platform helps new services and AI emerge.

WHERE WE ARE GOING

Signs of a mature data market

Over the medium term, ADX aims to become Kazakhstan's main platform for buying, selling, accounting for and valuing data products, with private, state, quasi-public and international suppliers.

Data-product description standard

One structure for metadata, usage terms, quality, updates and use cases.

Deal history by category

A base for comparing demand, price, reuse and market trends.

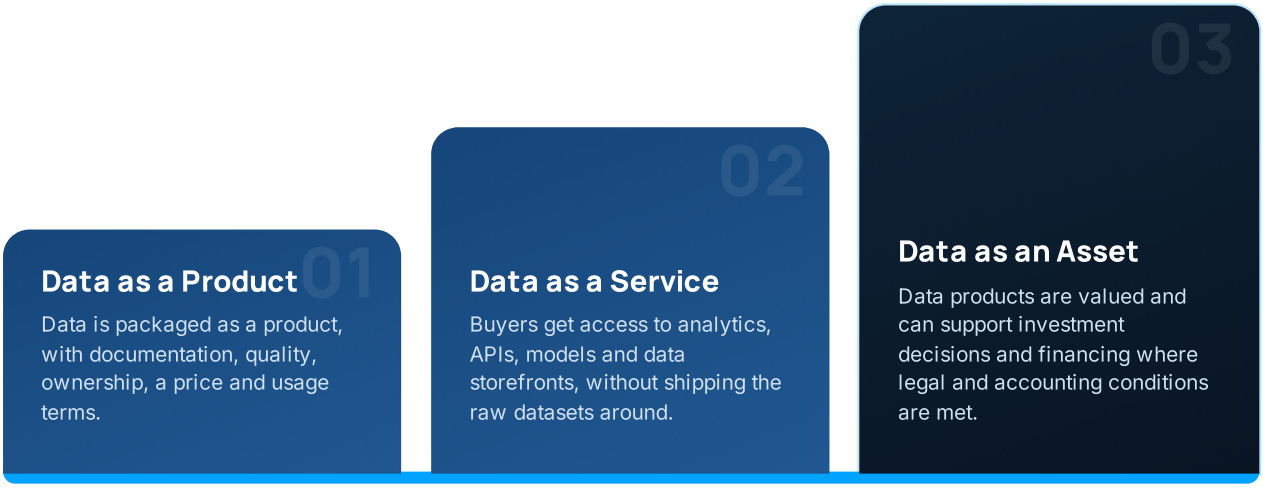
Product certificates and valuation

Confirm provenance, quality, rights and value, giving a basis for financing.

International compatibility

Kazakhstan can set a new standard for data markets: clear rules and legitimate products.

STAGES OF MARKET DEVELOPMENT



ADX
ASTANA DATA EXCHANGE

JOIN THE DATA MARKET

Become a participant of the ADX platform

A partnership model for building the data market with suppliers, buyers and institutional partners. List data products and data requests, and help set the standards and a trusted way of trading.

YOU CAN

- become a data supplier
- become a buyer of data products
- launch an industry pilot
- become a technology or industry partner
- take part in shaping data-market standards

WHAT PARTICIPATION GIVES

- a legitimate channel for working with data
- reduced reputational and operational risks
- new revenue streams
- access to verified data products
- a role in shaping the data market

Get started at astanadx.com

List a data product or a data request, and become a market participant.

astanadx.com ›

Astana Data Exchange
From raw data to an economic asset

astanadx.com
info@astanadx.com
t.me/dataeconomyKZ

SOURCES

References used

01 **OECD** — Enhancing Access to and Sharing of Data in the Age of AI, 2025. The role of data reuse and access as AI develops.

02 **IFRS EEG** — Accounting of Enterprise Data Resources. China's approach to accounting for corporate data resources as assets.

03 **European Commission** — Data Governance Act & Data Act. How the EU regulates data access, sharing and reuse.

04 **News Corp × OpenAI** — Partnership announcement. An example of licensing current and archival content for AI.

05 **Radiant Earth** — Great Data Products. Treating data as products built around the user, quality and use.

06 **Epoch AI** — Will we run out of data? 2024. A forecast that the stock of human-made public data could run out between 2026 and 2032 on current trends.

07 **IDC** — Kazakhstan Data Market Study, 2024. The size and growth scenarios for Kazakhstan's data market, and the industry breakdown of demand.

08 **Kazakhstan** — Digital Code and Platform Rules. The digital data product, exchange and trading platforms, and requirements for security, quality and metadata.

09 **ASPIR · QAZSTAT · SDE** — Unleashing the Economic Potential of Data in Kazakhstan, 2025. Analytical report of the authorized body: stat.gov.kz/initiatives/data-exchange.

10 **OECD** — Enhancing Access to and Sharing of Data, 2019. Estimates of the gains from wider data access, benchmarked at up to 2.5% of GDP once private-sector data is included.

ADX
ASTANA DATA EXCHANGE

Astana Data Exchange Ltd.
Astana, 2026 · astanadx.com
Based on the Digital Code of the Republic of Kazakhstan