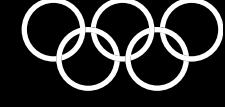


# 数据智能驱动治理能力现代化

Data Intelligent Drives the Modernization of Governance

阿里巴巴 刘松  
Song Liu Alibaba

# 大科学，大技术，大产业，大社会进入大交叉时代

阿里云 |   
奥运会全球指定云服务商

## The Big Cross-connection Era between Science, Technology, Industry and Society



# 产业升级“三叠浪”

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## The Triple Tides of Industry Upgrade

### 信息时代 Information Age

世界500强  
大企业  
Fortune 500



ERP  
数据库  
操作系统  
Database  
Operating System

### 消费互联网 Internet Consumption

技术极客  
创业公司  
Tech Geek  
Start-ups



"App Store"  
大数据  
云计算  
Big Data  
Cloud Computing

### 产业智能化 Industrial Intelligence

产业极客  
社会协同网  
Industrial Geek  
Social Collaboration



AIoT  
区块链  
芯片  
Blockchain  
Chip

# 小前端大平台富生态----阿里巴巴生态体系

Alibaba Ecosystem: Small Front-end, Large Platform, Rich Ecology

## 电子商务 E-commerce



## 数字娱乐

Digital Entertainment



## 本地生活 Local Life



## 支付与金融服务

Payment and Financial Service



## 智慧物流

Smart Logistics



## 全域营销

Uni-Marketing

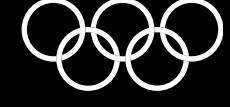


## 云计算

Cloud Computing



# 网络协同和数据智能是数字经济发展双螺旋

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## Network Collaboration and Data Intelligence are the Double Spiral of Digital Economy Development

数字化通常带来同业态四倍速的替代能力

Digitalization = 4 x Replacement Capability

数字经济新增量  
Digital Economy  
New Growth

科学研究

Science Research

信息技术

Info Technology

产业转型

Industry Transformation

经济增长

Economy Growth

社会治理

Society Management

驱动数字经济  
发展的双螺旋  
Double Spiral  
of Digital  
Economy  
Development

网络协同

Network Collaboration

构建平台模式

Platform Model

数据智能

Data Intelligence

释放数据的价值

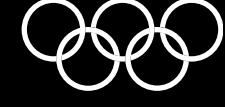
Uncover Data Value

云计算  
Cloud Computing

数字经济的基础设施

Digital Economy Infrastructure

# 网络协同 —— “双十一” 诠释的社会化协同

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## Network Collaboration at 11.11

1.042

Billion Logistic Orders

智能物流骨干网正式进入  
Intelligence Logistic Network

10亿时代

213.5

Billion Turnover

生物支付占比  
Biological Payment

68.3%

230

Countries and Zones

180 , 000  
Retailers

本地生活服务  
Local Life Service

饿了么和口碑联动100万本地  
商家24小时外卖不打烊  
1 Million Local Retailers  
Working for 24hr with Eleme  
Koubei



盒马鲜生 Hema

订单增长325%  
全国门店总数近百家  
Order Increased by 325%  
with nearly hundreds of  
domestic stores

生态力量全面集结 Rich Ecosystem

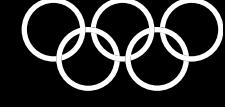
居然之家 EasyHome

仅13小时全国266家门店销售  
额突破100亿元  
266 Stores 10 Billion  
Turnover for 13 hours

线上线下联动  
Online-offline

全国100个天猫新零售商圈迎接  
数轮“红包雨”  
亿万人边逛边“摇”给优惠  
“Red Envelope Activity” for  
100 Tmall Business Group  
Billions of people shake  
phones for discount benefit

# 数据智能 —— 在阿里，算法成为数亿用户的“能力代理人”

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## Data Intelligent: Algorithm Becomes Customers' Super-Agent

### 用户兴趣洞察 Customer Interest Insight

基于新闻内容、用户属性、  
用户行为三类数据，进行特  
征提取，输出用户兴趣画  
像、品类画像、新闻画像

Input: news content + user  
attributes + customer behavior  
Output: User Interest, Object and  
News Profiles



### 千人千面推荐 Personalized Recommendation

通过阿里云提供的海量用  
户人群特征提供最精准的  
推荐服务

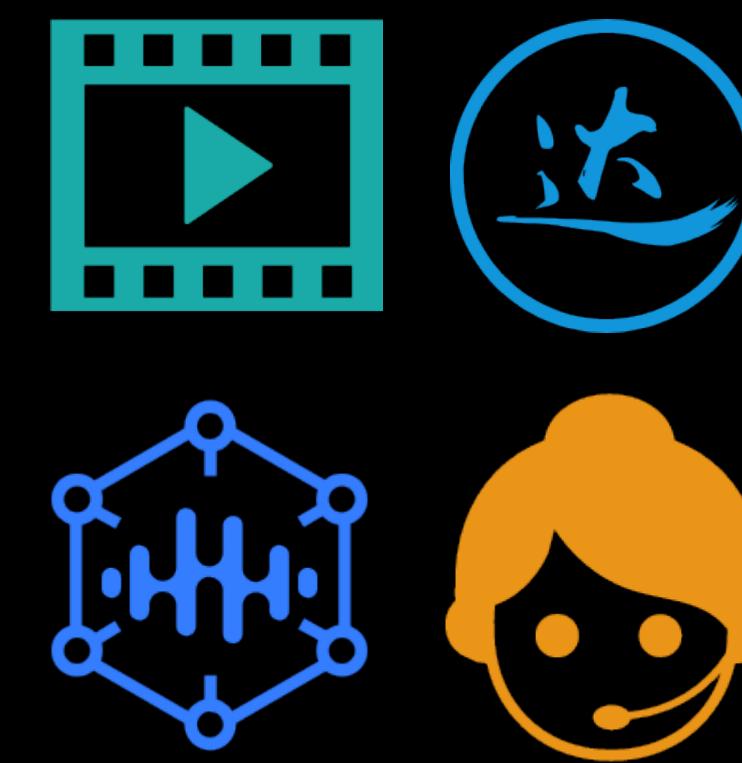
Through Alibaba cloud, User  
feature data used for extract  
the precise info for the  
recommendation service



### 智能客户服务 Intelligent Customer Service

通过自然语言处理（NLP）、  
深度学习实现7\*24小时的客  
户服务体系

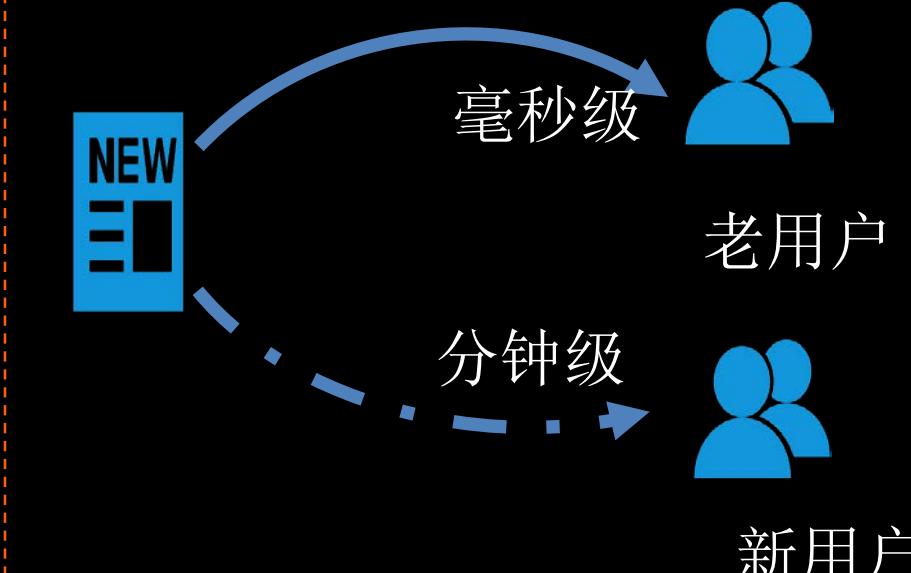
Deep learning and NLP aid the  
Performance of Customer Service  
for 7\*24



### 新闻实时推荐 Real-time News Recommendation

新闻毫秒级推荐  
老用户毫秒级推荐  
新用户2~3分钟推荐

News in ms  
Existing Members in ms  
New Member in 2-3 min

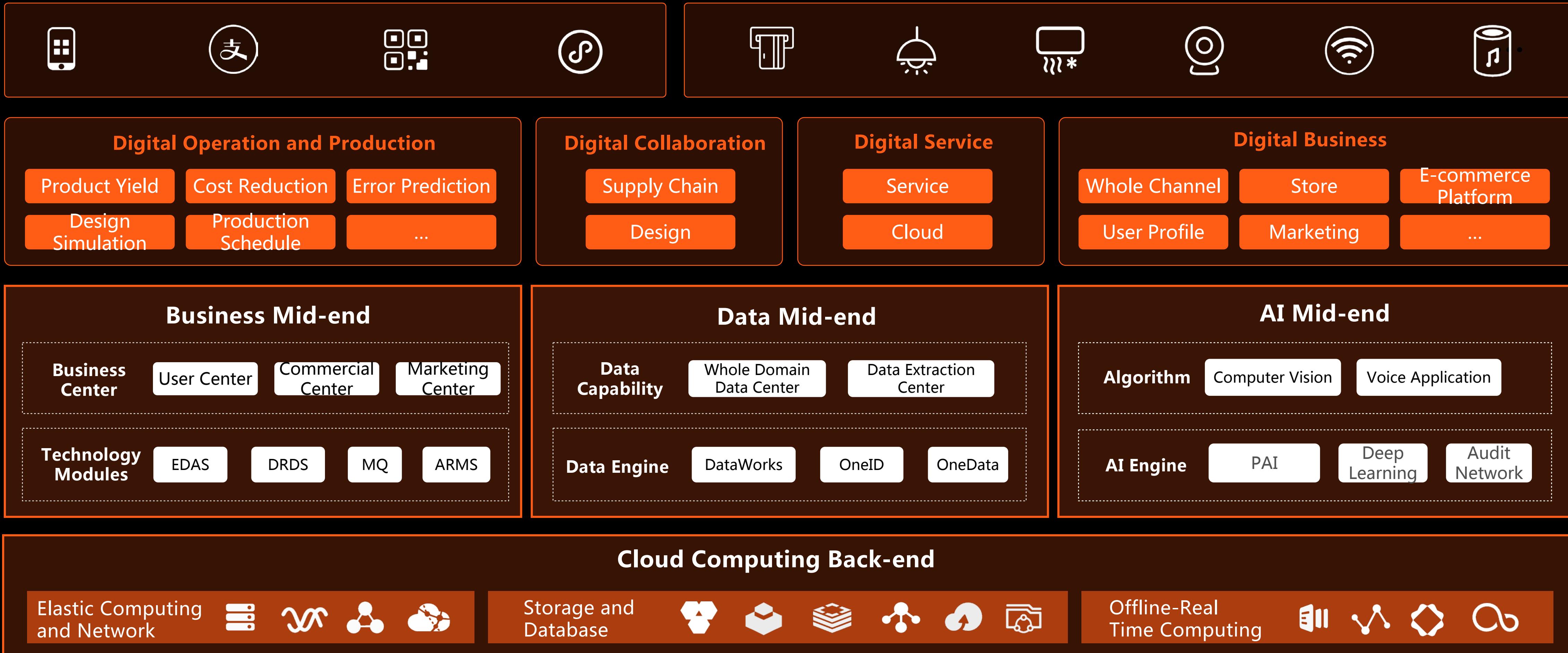


# 阿里巴巴的数字化转型总体方案：中台成为“创新容器与能力广场”

阿里云 | 

奥运会全球指定云服务商

## Mid-end Becomes the Incubator of Innovation and the Time-square of Capability



更高效的网络协同

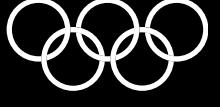
*Network Collaboration More Effective*

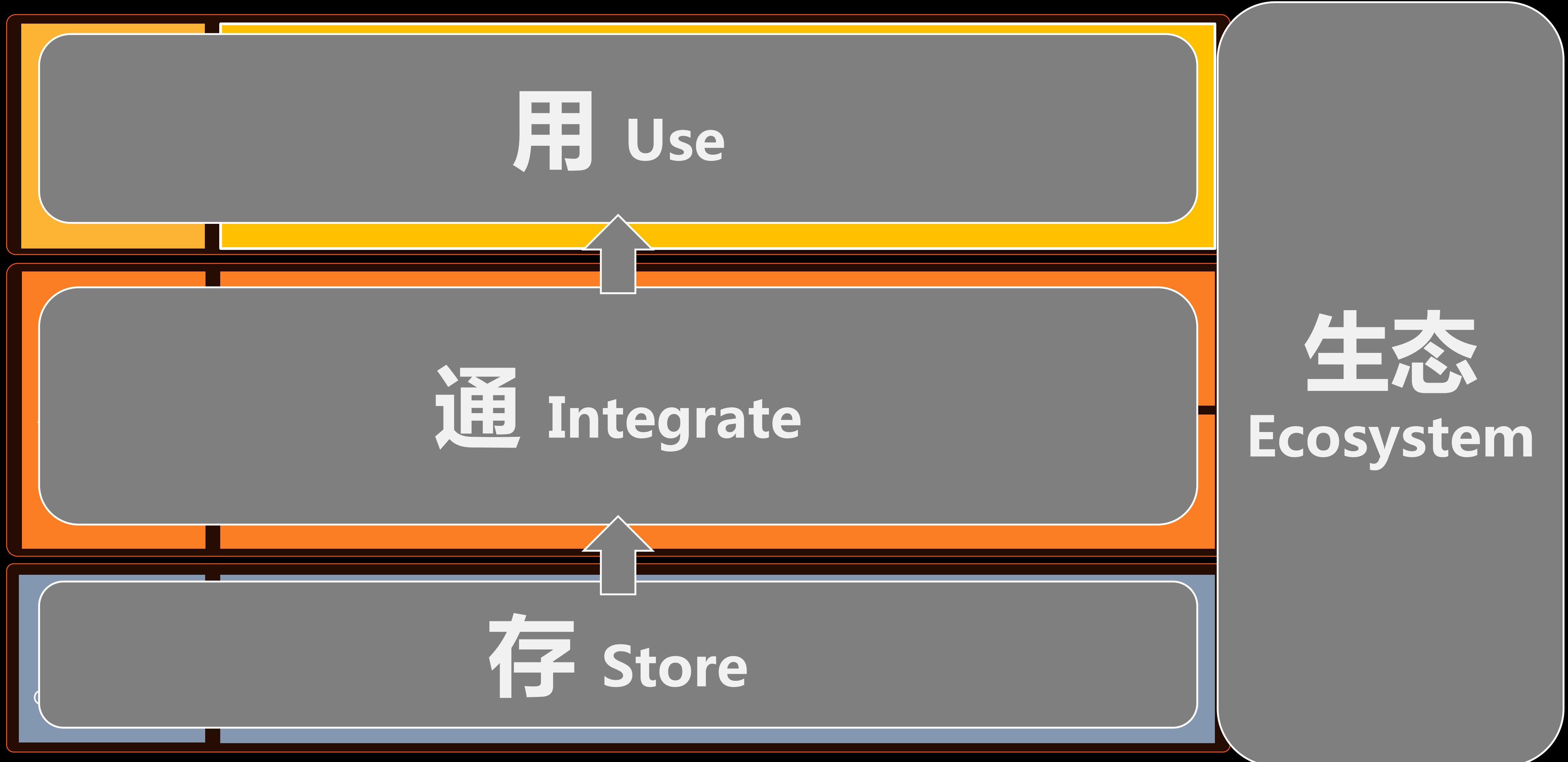
更精准的数据智能

*Data Intelligence More Accurate*

# 阿里巴巴的大数据体系

## Alibaba Big Data System

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# 阿里大数据管理体系职责：规划、管理、服务

阿里云 | 

奥运会全球指定云服务商

## Alibaba Big Data Management System Responsibilities: Planning, Management, Service

为数据管理的长期建设过程，指定建设方向和原则和建设策略；

Specify the direction, Principles and Strategies for the Long-term Construction Process of Data Management

保障数据管理机制常态化运转所需的制度、组织、流程和工具，是基础手段。

The system, organization, process and tools needed to ensure the normal operation of the data management mechanism are the basic approaches

### 数据战略 Data Strategy

三大关键管理内容

3 Key Management Content

数据成本  
Data Cost

数据质量  
Data Quality

数据安全  
Data Security

数据  
治理  
Data Management

运营  
和服  
务  
Operation And Service

One data

元数据 Meta Data

数据管理的基础，是对企业数据资产的描述。并且通过对基础元数据的丰富（数据分级分类），实现对管理体系的全面支持。

The basis of data management is the demonstration of enterprise data assets. Through the enrichment of basic metadata (data classification/categorization), it can fully support the management system

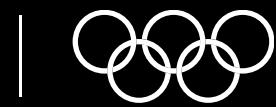
从企业全局统一规划的角度，对大数据平台内数据模型、数据对象的规范以及数据加工开发规范的定义。

From enterprise data unified planning perspective, define data models, data object specifications, and data processing and development specifications in big data platforms

保障数据管理机制高效运转所提供的面向所有用户（管理人员、开发人员、业务人员等）的运营和服务功能。

Ensure the operation efficiency of the data management mechanism, which provides operation and service functions for all users (managers, developers, business personnel, etc)

# 组织：强有力高层领导支持和业务部门的参与

阿里云 | 

奥运会全球指定云服务商

Organization: Strong Support and Participation from Senior leaders and Business Departments

## 数据管理委员会

Data Management Committee

首席数据官组织 ( CDO )

业务单元接口人 (BUPOC)

## 数据管理执行委员会

Data Management Executive Committee

数据技术部 Data Technology Department

数据安全部  
Data Security Department

数据质量  
Data Quality

数据成本与元数据  
Data Cost & Meta Data

One Data

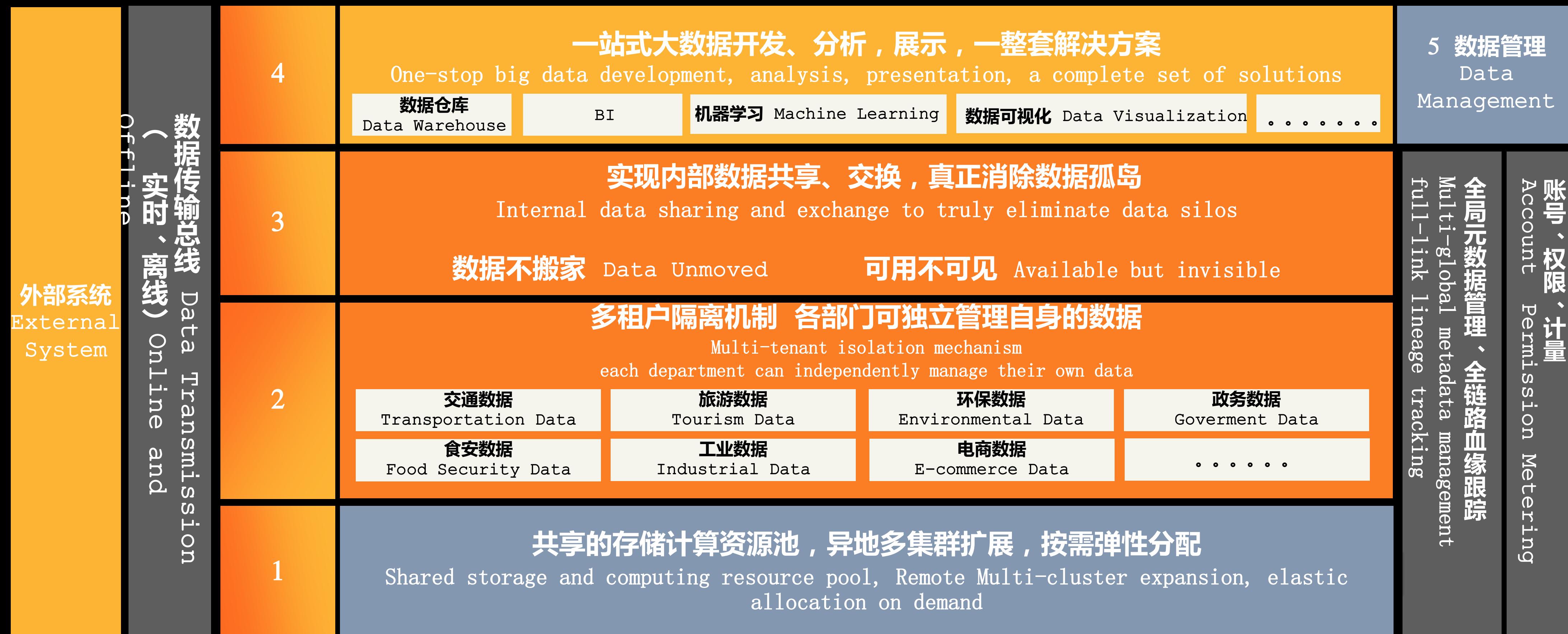
BU1

BU2

BU...

# 大数据的操作系统

# Big Data Operating System



## The Key Elements of a Unified Platform

1

**统一平台，数据大集中**

**Unified platform and centralized data**

统一的存储，统一的计算引擎，统一的数据开发平台

Unified Storage, computing engine, data development platform

2

**资源共享，弹性分配**

**Shared resource, elastic allocation**

基于ODPS多集群技术，由数以万计的服务器提供超级计算能力，按需弹性分配给各数据开发团队

Based on ODPS multi-cluster technology, tens of thousands of servers provide

supercomputing capabilities, distributed flexibly to Data Development teams on demand.

3

**数据隔离，分权管理**

**Data isolation and decentralized management**

基于ODPS多租户机制，各部门可独立管理自身的数据，独立做数据授权

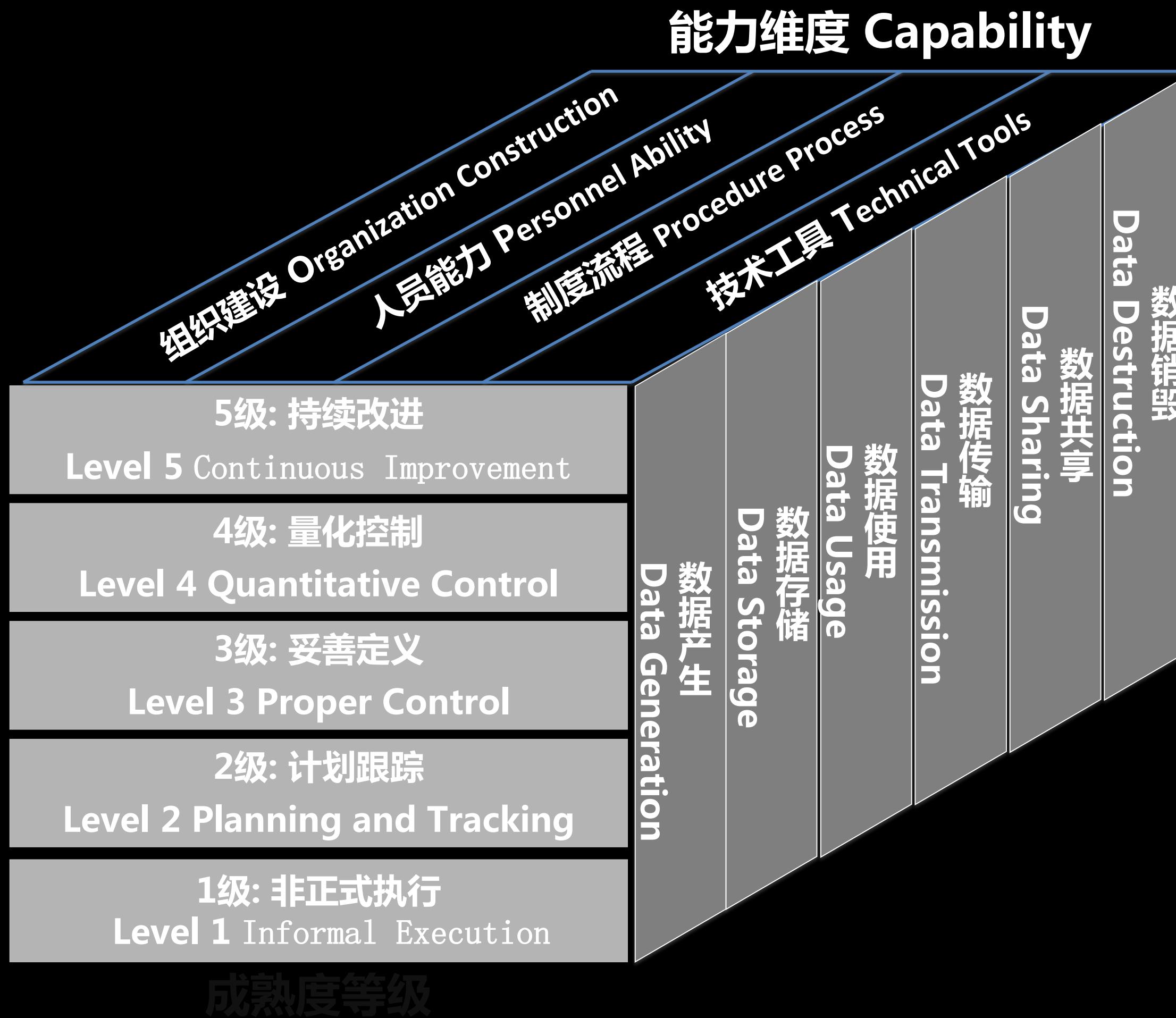
Based on the ODPS multi-tenant mechanism, each department can independently manage its own data and perform data authorization independently

# 阿里大数据安全实践：数据安全能力成熟度

阿里云 | 

奥运会全球指定云服务商

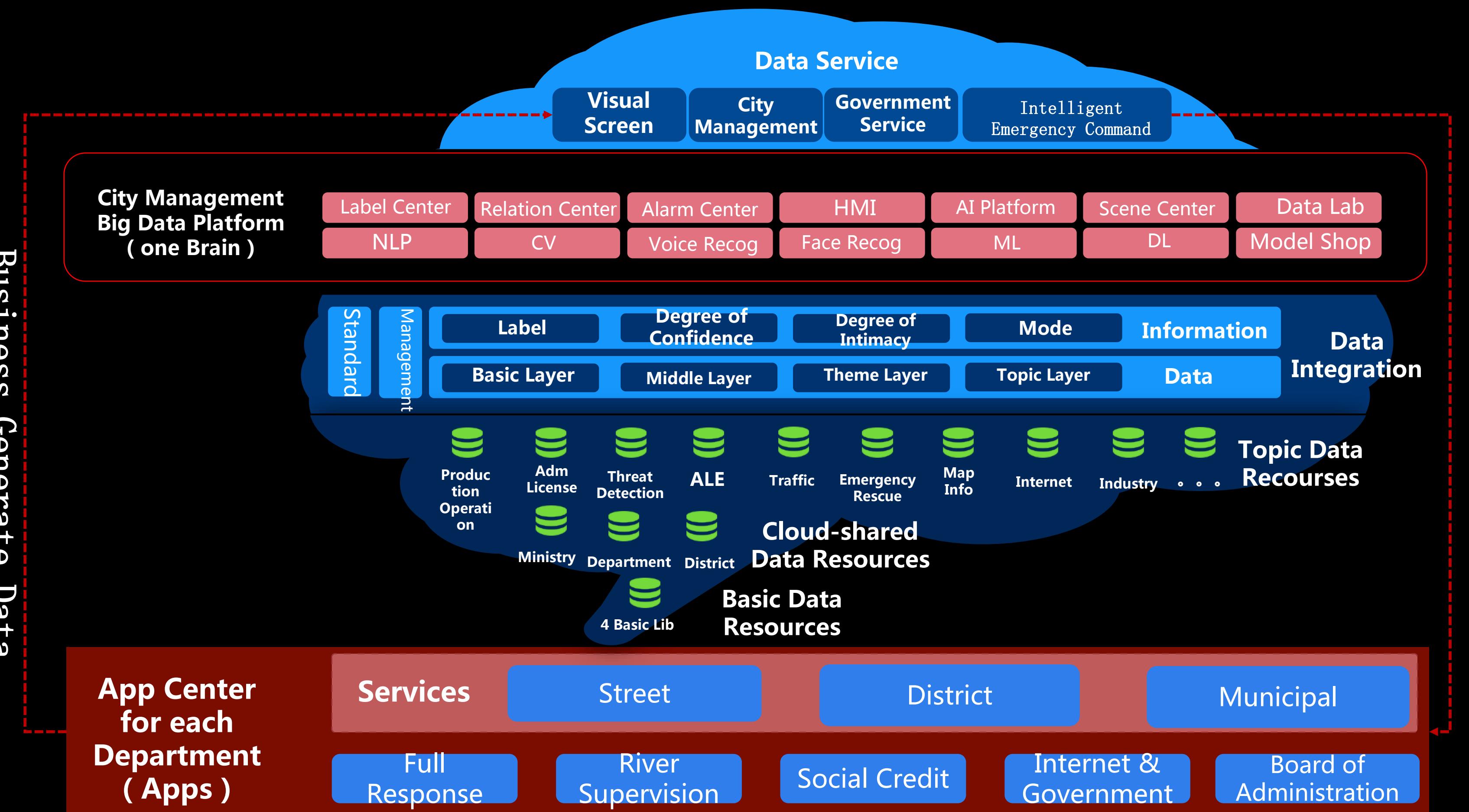
## Alibaba Big Data Security Practices: The Maturity Data Security Capability



- 借鉴 DMM思想，通过成熟度等级对组织在数据管理上的能力进行标准化的定义和区分。阿里借鉴DMM开发了数据安全能力成熟模型，以帮助自身及合作伙伴组织评估和实施数据安全管理实践，并作为数据共享的风险评判依据之一。Based on DMM ‘s idea, the organization’ s ability in data management is defined and distinguished by maturity level. Alibaba has developed a mature model of data security capabilities to help itself and its partners organize the assessment and implementation of data security management practices, the model as one of the risk assessment indicators for data sharing
- 针对 阿里数据生态圈下的相关方 For relevant parties in the Alibaba data ecosystem
- 围绕 数据生命周期 For the data lifecycle
- 覆盖 组织建设、人员能力、制度流程、技术工具四个能力维度 Cover four capacity dimensions: organization construction, personnel ability, institutional process and technical tools
- 聚焦 组织在数据上的安全管理能力 Focus on the organization’s data

# 参考架构：“1+N”城市治理服务模式

## Referenced Architecture: "1 + N" City Management Service Model



一切业务数据化：未来所有的数据都要落在大数据平台上

All business produce data: all data stored in the big data platform in the future

一切数据业务化：未来所有大数据应用都要通过平台来提供服务

All data used in business: all big data application provides services through platform in the future

“1”即“一个数据大脑”，城市治理数据大脑基础设施，基于数据实现动态感知、数据融通、全域智能、全局指挥、高效协同，提供统一汇聚、存储和计算、融通、数据服务；

‘One’ being a data brain, which is the infrastructure of city management, based on the data to achieve dynamic perception, data integration, whole session intelligence, global command, efficient collaboration, provides unified data service such as data aggregation, storage, computing and integration.

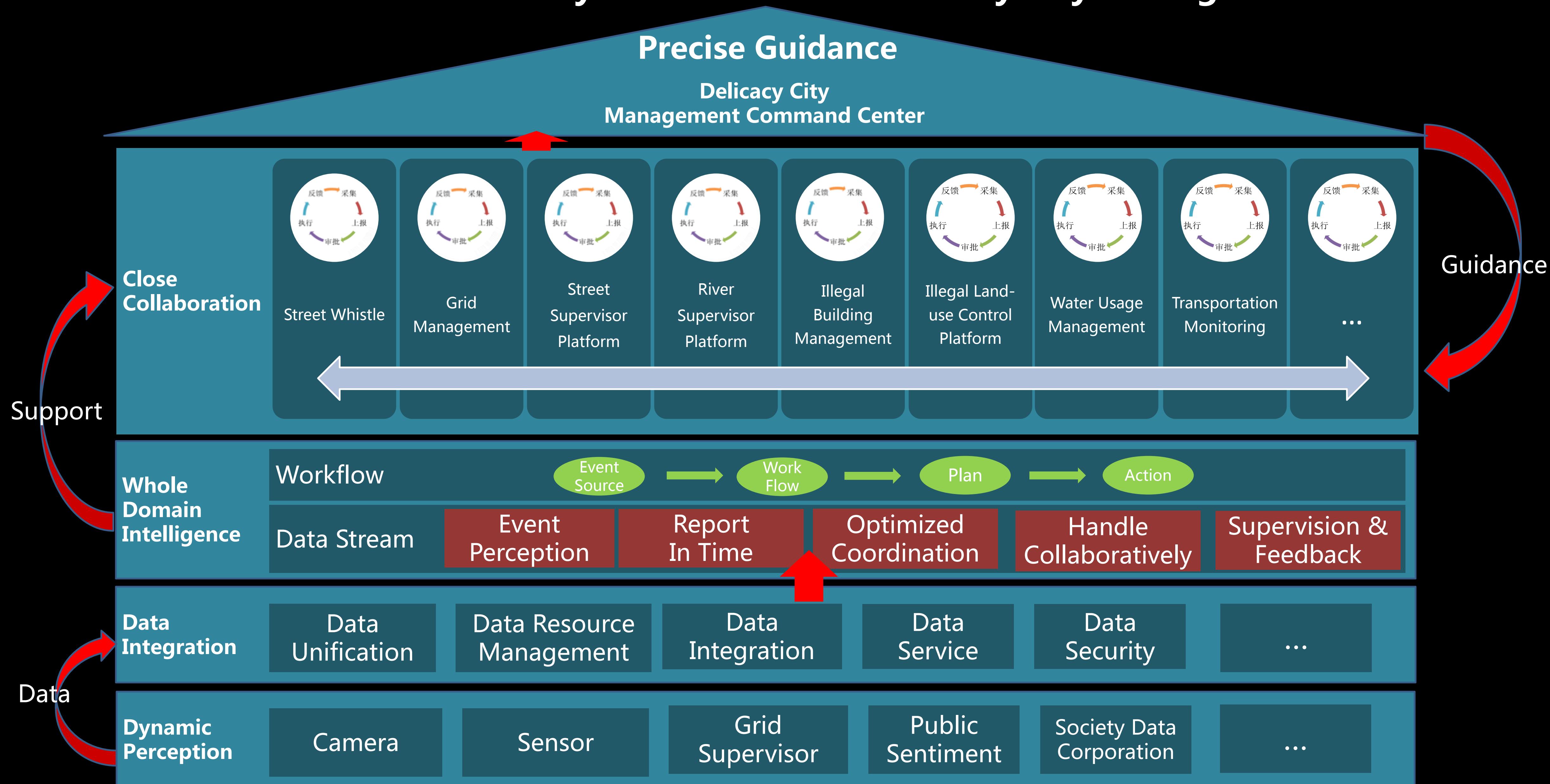
“N”即N个城市治理专班成员单位的大数据应用，重点以街巷长、河长制、全响应、街道等开展规划，建设城市（社会）精细化治理智能服务、面向全市（区）各级领导构建可视化终端服务

“N” refers to the big data application of the member units of the special group of city management, which focuses on the street and river supervision, full response and so on, the aim is to build the city (society) delicacy intelligence management services and build visualization services for leaders at all levels of the city

# 总体思路：以数据为核心，构建城市精细化治理“大闭环”

General Idea : Data as the Key Driven Force of Delicacy City Management

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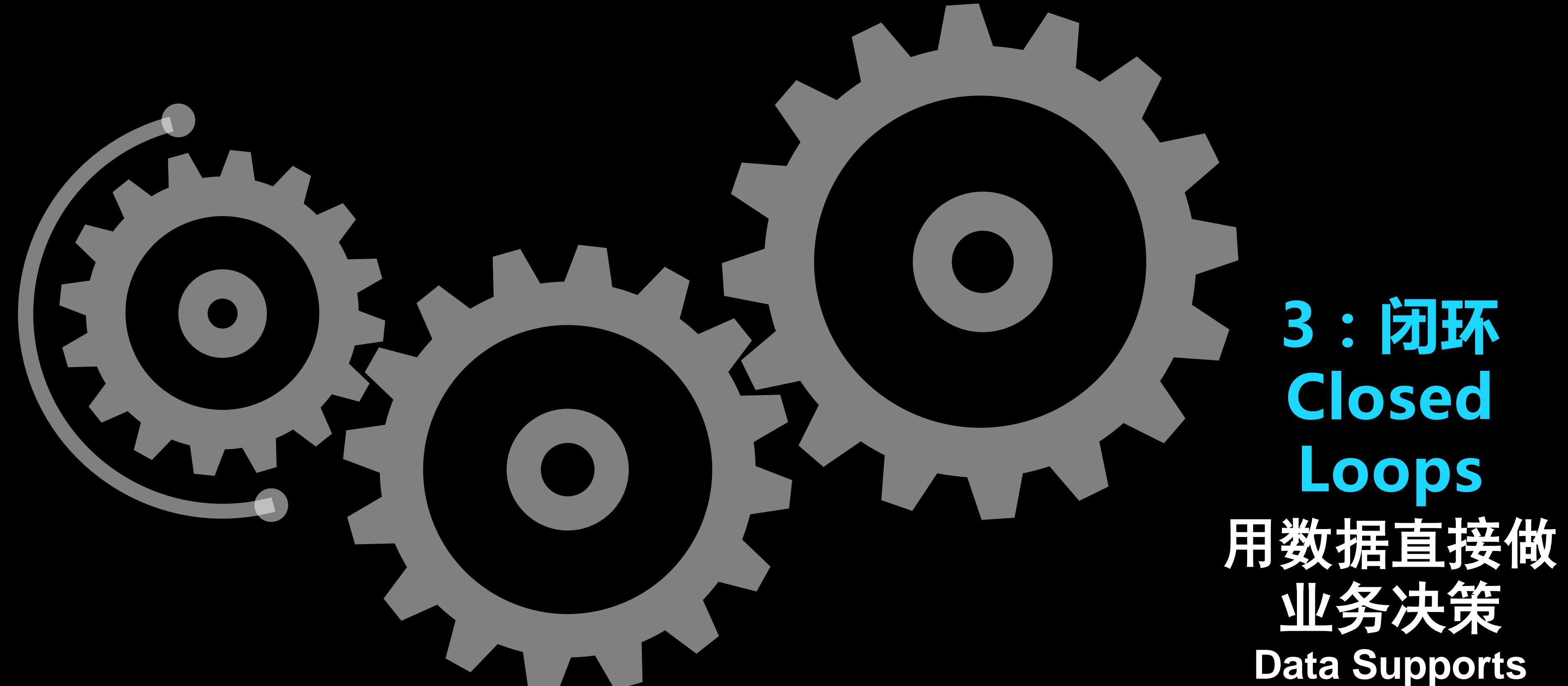


# 数据智能技术如何驱动政府数字化转型？

Data Intelligence Technology Drives Government's Digital Transformation

1 : 在线  
**Online**  
可随时被  
使用

Can be Used  
Anytime



2 : 活用 **Flexible**

需要被消化、处理、增值

Content Digested, Info Processed  
Value Uncovered

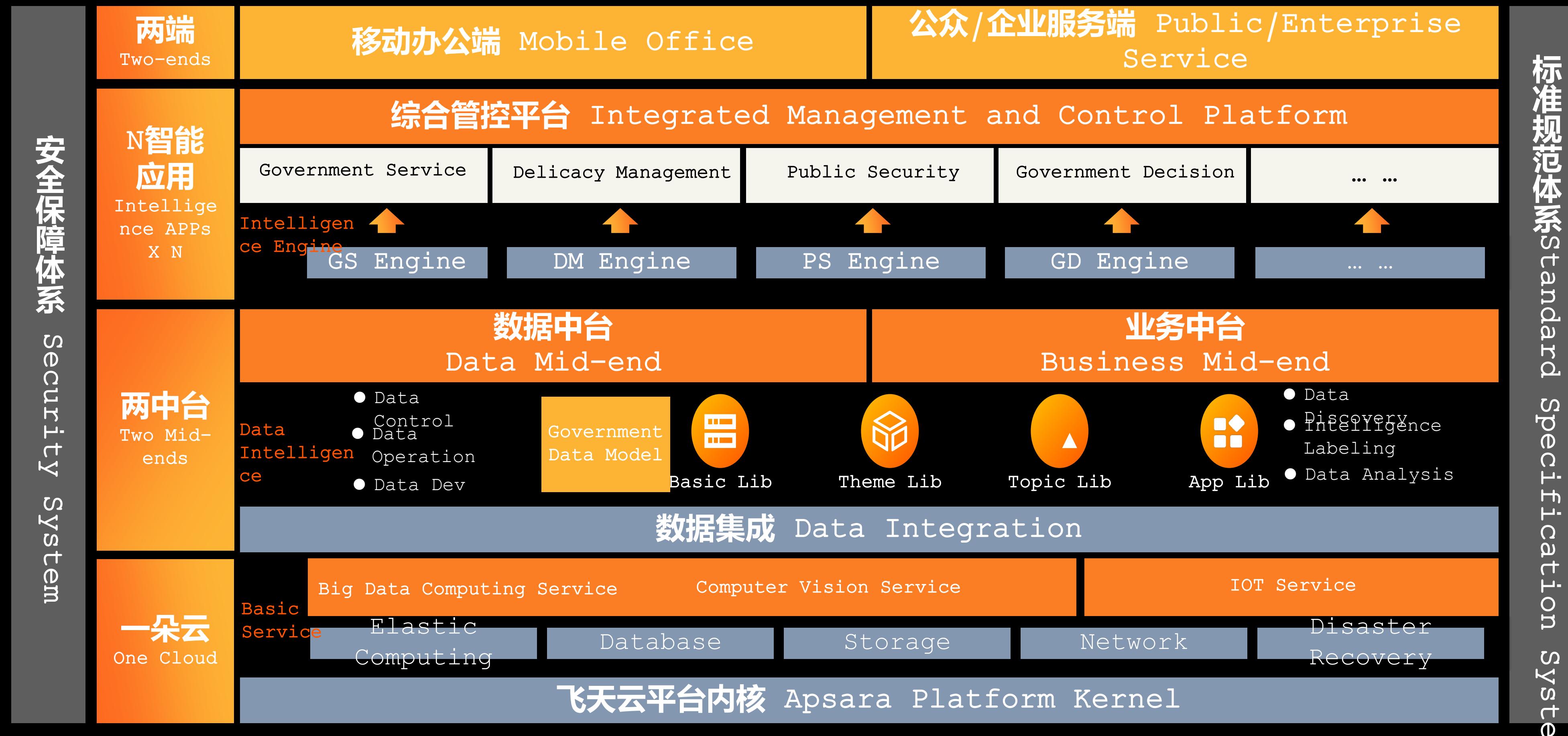
3 : 闭环  
**Closed Loops**

用数据直接做  
业务决策

Data Supports  
Business Decision

# 阿里数字政府解决方案架构

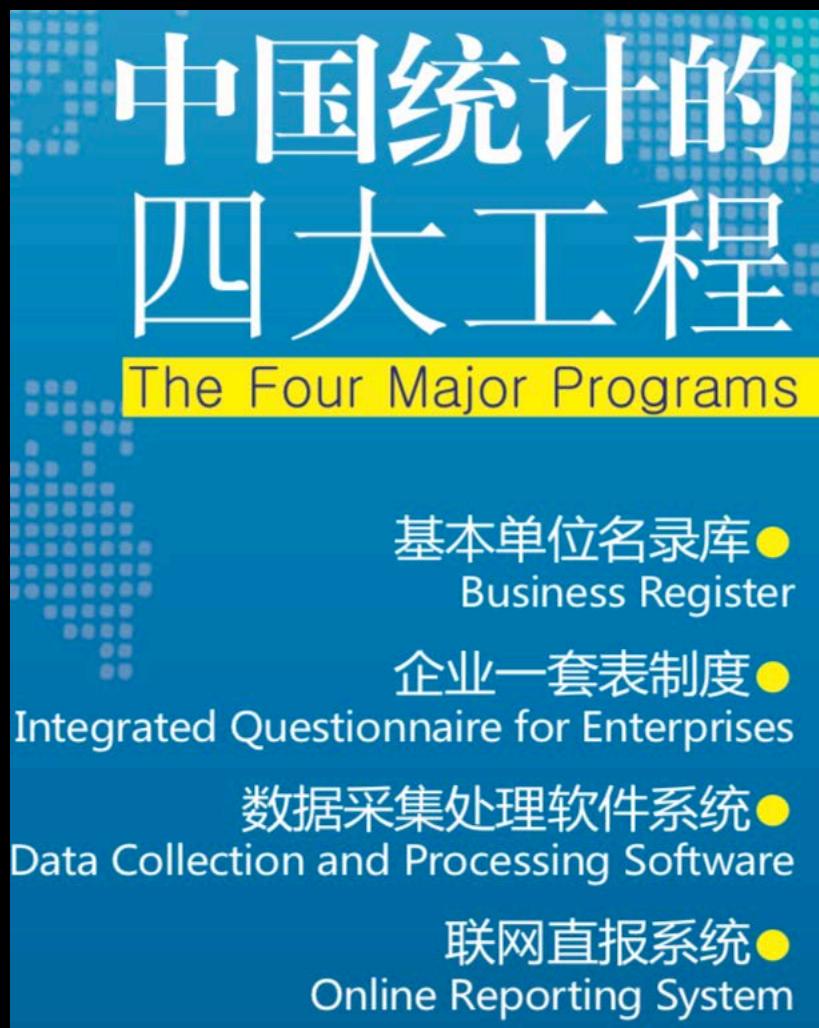
Alibaba Digital Government Solution Architecture



# 统计行业数字化转型展望

## The Prospects of the Digital Transformation of Statistical Industry

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今天  
Now

- **事后统计**  
**Post-event Statistics**
- **部分抽样**  
**Partial Sampling**

“精准化，在线化”升级  
Precision, Online and Dimension Upgrade

明天  
Future

- **事中监控**  
**In-process Monitoring**
- **全量数据**  
**Full-volume Data**
- **在线预警**  
**Online Alert**

数据智能将带来统计工作，统计资料，统计科学的变革  
Data Intelligence will Reshape Everything Related to Statistics.

## Multi-challenges of Statistical Work: Workload, Effectiveness, Efficiency and Accuracy

### Challenges

- 信息系统需具备横向扩展能力  
**Information System needs to have scaled-out capabilities**
- 各个业务IT系统数据不通  
**Data of each BU IT System are not well connected**
- 对象的经营活动频繁、线上线下，IT系统复杂化  
**Frequent Operational Activity, On/Off-line, Complexed IT system**
- 非结构化数据急剧增多  
**Unstructured Data Increased Tremendously**
- 数据证据社会化多渠道来源  
**Multi-source Data Collection**



### Solutions

- 云计算平台提供计算、存储、网络的便利扩展  
**Cloud Computing Platform provides computing, storage and network service**
- 构建数据中台：一个统计大数据中心  
**Build Data Mid-end, Which is a Statistics Big Data Center**
- 基于统一数据中台和业务中台，各业务部门、合作伙伴开发特色应用  
**Based on unified Data and Business Mid-end, each BU and partner develop their own specialized application**
- 机器产生的数据要靠机器来读：大数据算法  
**Big Data Algorithms: Machine-generated Data Machine to Read**
- 重复、固定规则的工作交给机器  
**Machine Handles Repetitive and Rule-based Work**

提高效率，时效更强，更加精准

Improve Efficiency, Effectiveness and Accuracy

# 数据智能打造智慧统计解决方案

## Data Intelligence Drives the Success of Smart Statistics Solution



采集

Collection



融合

Integration



分析

Analysis



预测

Prediction



预警

Pre-alarmed



服务

Service

1、数据化——“一张表” 全局实时数据管理，实现数据融合；

Data

One Table

Global Real Time Data Management, Data Integration Implementation

2、在线化——“一张网” 国家、省市县、企业多端联通，数据在线化；

Online

One Network Nation, City, County and Enterprise Multi-connections, Enables Data Online and Live

3、智能化——“一盘棋” 经济普查数据分析、多样化的经济统计指标；

Intelligence

One Chess Game Intelligent Analysis of Economic Census Data, Diversified Economical Statistical Indications

# 统计大数据平台：构建多源数据获取能力

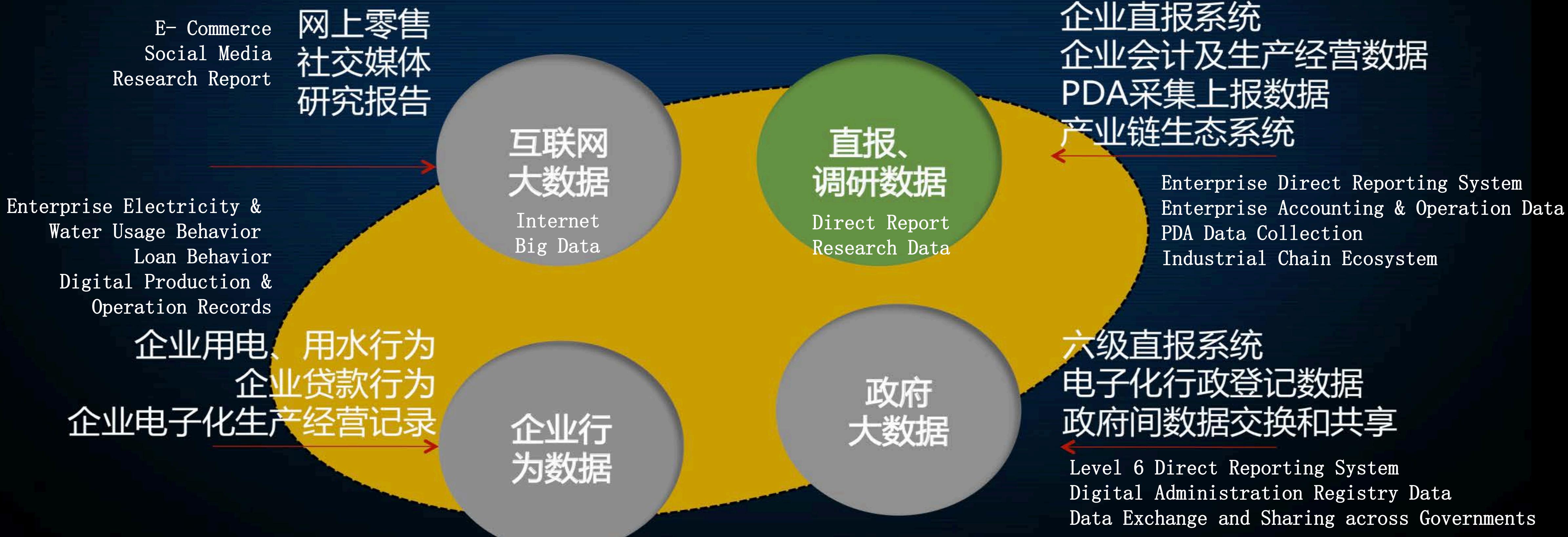
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Statistics Big Data Platform : Multi-source Data Acquisition Capability

实现统计设计、任务布置到数据采集、处理、分析的全流程现代化

The Automation and Modernization of the Whole Process

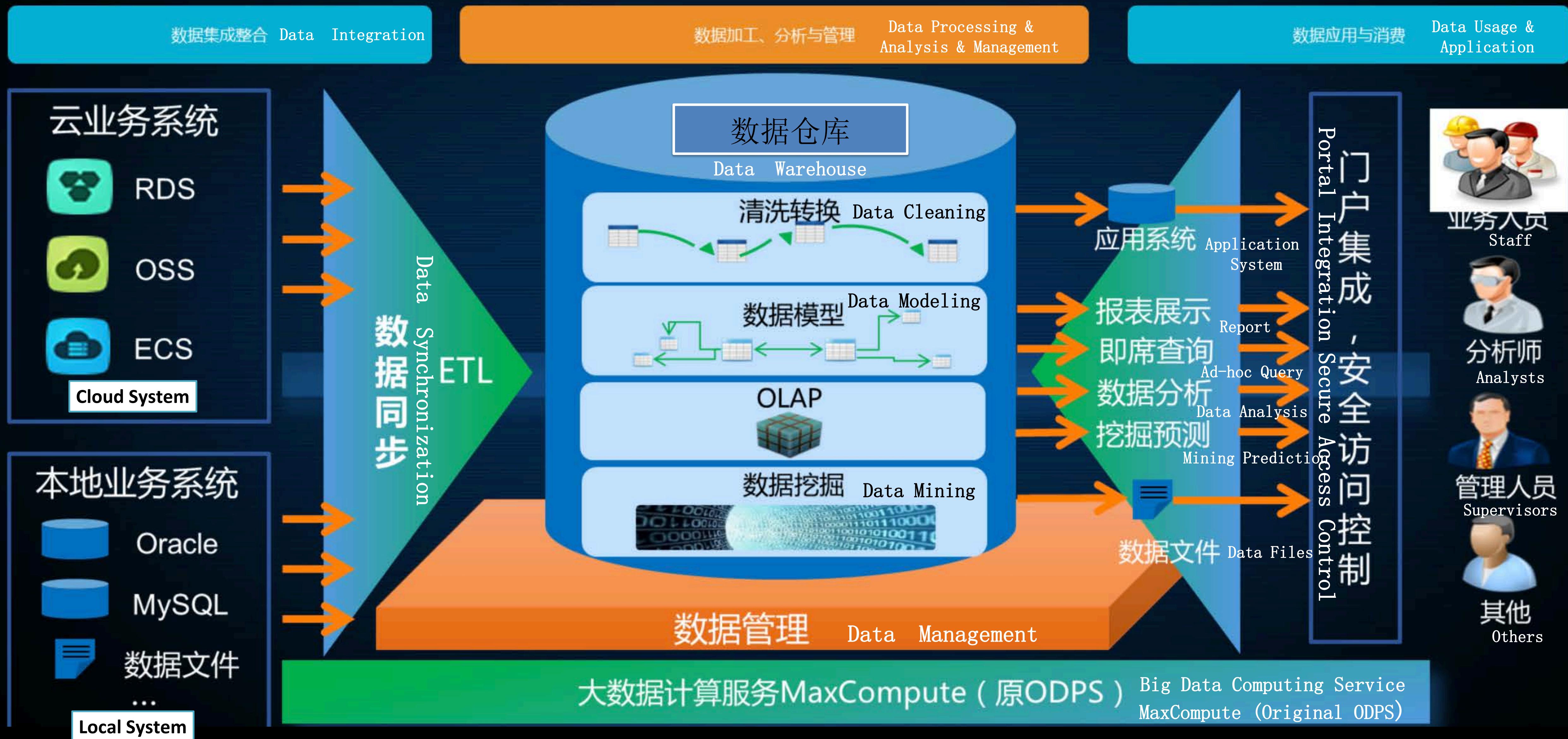
from Statistical Design, Task Deployment to Data Collection, Processing and Analysis



# 统计大数据平台（融合+分析）：数据中台

Data Mid-end: Statistics Big Data Platform (Integration & Analysis)

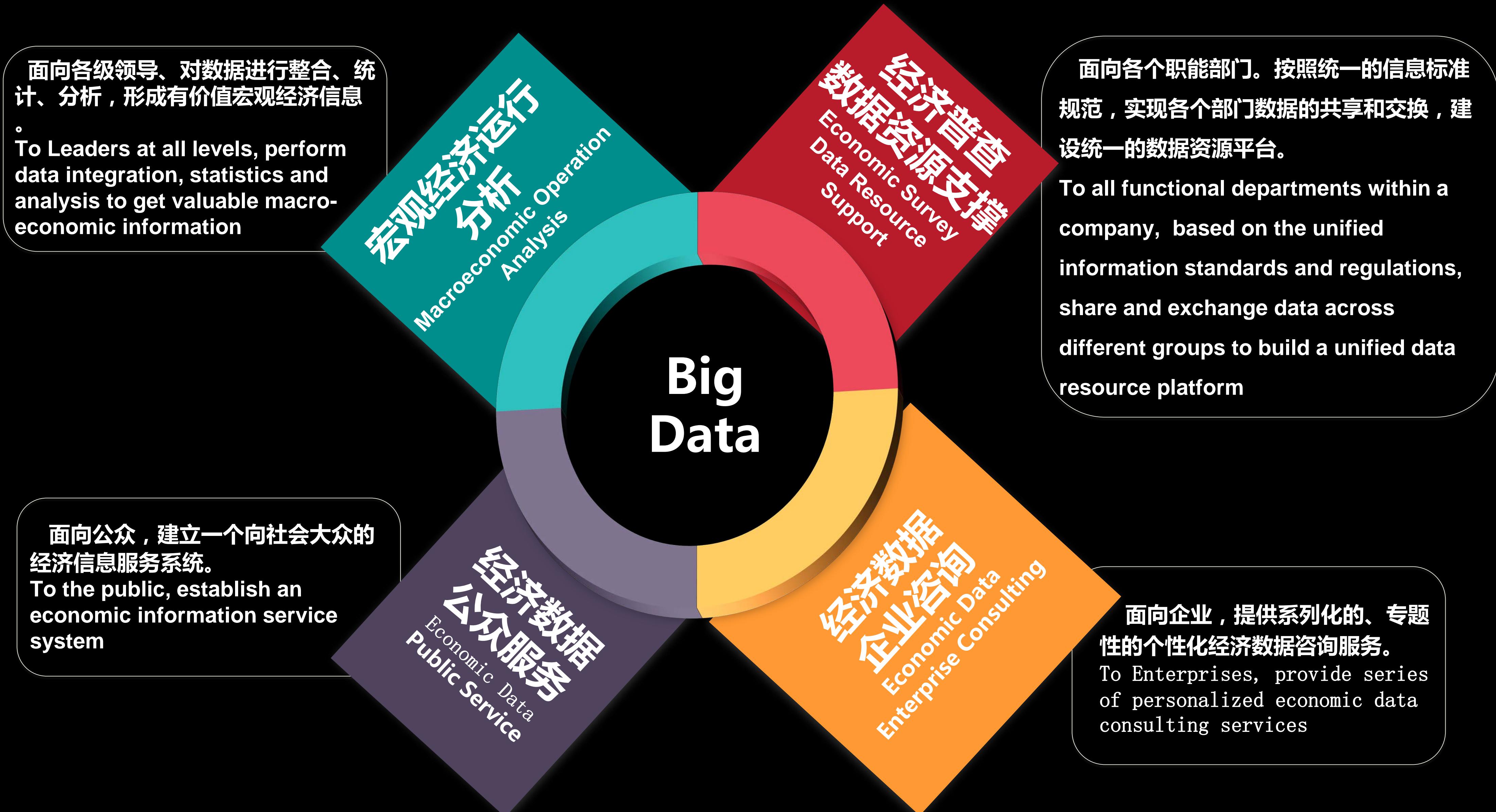
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# 构建大数据实时经济运行监测、服务体系

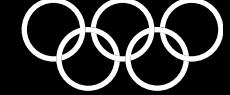
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## Big data Real-time Monitoring and Service System for Economic Condition



# 统计行业数字化转型路径

The Path of Digital Transformation for Statistical Industry

阿里云 | 

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Step 4 Precise Statistics

4.0精准统计

Step 3 Business Mid-end

3.0业务中台

数据生态

Data Ecosystem

■ 业务闭环

Business Closed-loop

■ 企业监管

Enterprise Regulation

■ .....

业务创新

Business Innovation

■ BI智能分析

BI Analysis

■ 大屏可视化应用

Large Screen  
Visualization Application

■ 经济普查统计分析门户

Economic Survey Statistical Analysis

■ .....

数据资产化

Data Capitalization

■ 数据整合 Data Integration

■ 数据地图 Data Map

■ 数据管理 Data Management

■ 数据质量 Data Quality

■ 数据安全 Data Security

■ 数据标签 Data Label

数据上云

■ 数据集中存储

Centralized  
Data Storage

■ 大规模计算能力

Large-scale  
Computing Power

■ 统一元数据

Unified Metadata

存

通

用

Storage

Integration

Usa

# 阿里云全面支撑政府部委数字化转型

阿里云 | 奥运会全球指定云服务商

## Alibaba Cloud Fully Supports the Digital Transformation of Government Ministries

飞天操作系统  
Apsara Operating System

中国电子协会15年来首次颁发的  
科技进步特等奖  
1st Science and Technology Progress awarded by  
Chinese Institute of Electronics in 15 years

公安部、网信办、工信部安全合规认证  
Safety Compliance Certification by  
MPC, Office of the Central Cyberspace Affairs Commission,  
Ministry of Industry and Information Technology

“十九大”护航、全国“两会”护航  
Provide Secure Support for 19<sup>th</sup> CPC National  
Congress and for NPC&CPPCC

自主可控  
Independent Self-control

安全合规  
Secure Compliance

飞天云为基座  
数据驱动的中台  
人工智能为核心  
Base: Apsara Cloud  
Mid-end: Data-Driven Center: Artificial Intelligence

支撑  
Support

稳定可靠  
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