How does data redefine business models

EDGE COMPUTING + MIDDLE PLATFORM

Bryea Technology
How to define a Data-driven business model

A idealized Date-driven business model:
All decisions are supported by data, and all effects are evaluated by data
Realities and Challenges

1. Stovepipe systems
2. Inconsistent databases
3. Enormously time-consuming
4. Manual work required

Large number of systems
Multiple data types
Complex business processes
Multiple forms of data access
Another challenge—Data ownership

Whether data sharing violates management rules?

Whether data ownership limits data collection?

Whether data caching breaks data access authorization?

How to determine data access scope?

**KEY POINT:** Ownership and authorization of the original data should not be destroyed, and risks should not be brought to the data owners and users.
How to solve the problems?

Edge Computing + Middle Platform

Complex data computing, computing power and algorithm support, massive data storage, heterogeneous data fusion
Edge Computing

Data collection

Data sync

Data independent availability

Model & application push, Application management, Edge device hosting

Device operation data, Business data, AI data

3D modeling, Digital twinning, Situational awareness, Panoramic view

Data sources

Sensor & machine data
Business data

Edge data server

Collection & transfer

Edge computing

Application layer
Unified view of data, Unified data analysis and processing method, Unified data interface

Middle Platform

Business panoramic view

- Production data
- Sales data
- Staff Management data
- Logistics data
- Retail data
- Warehouse data
- Environment monitoring
- Security & safety
- Business system data
Role-driven data value discovery

Multiple applications
Multiple value

Application layer
- Maintenance Support
- Capability Analysis
- Statistic Analysis
- Situation Awareness
- ...
- Decision Support

Presentation layer
- Mobile
- Desktop
- Web
- Screen Display

Variety of forms

Analysis layer
- Real-time Computing
- Data Analysis
- Data Search
- Data Mining

Multiple algorithms

One data

Data layer
- Database/operating system/ERP/CRM
- Server/Network device
- Camera/Sensor
- Mobile App/Behavior data
- BBS/Social media/Comments

Data Support
Virtual data lake solves data ownership problems

- Data catalog
- Data services catalog
- Virtual data lake
- Production data
- Sales data
- Video stream
- Environment
- Security
- Devices
- Warehouse
- Keep data what it is
- Keep data where it is
- Real-time direct connection
- Centralized storage
- Distributed storage
- Back-end system
- Real-time + Asynchronous snapshot
- Local storage
Charts can be interacted with and data can be explored

Quickly decrypt each phenomenon

Any link of the results to the data source can be traced and verified
Data model construction

- Data lake
- Data statistics
  - Total statistics
  - Classification
  - Send & receive
  - Stock statistics
- Logical analysis
  - Demand analysis
  - Consumption
  - Time analysis
- Knowledge construction
  - Algorithm construction
  - Progress construction
  - Loss warning
  - Accident warning

Data statistics flow diagram.
**Data-driven visual design**

- **Text**: Various shapes, Figure, Dynamic result set function
- **Diagram elements**: Combination, Compact splicing, Repeat, Linear repeat, Arc repeat, Dynamic properties, Attribute binding, Dynamic data for visual elements, Conditional visualization, Dynamic data drives the selection of various preset visualizations
Factory panoramic visual management system

Panoramic visual modeling

Conduct 3D rehearsals for high-risk operations to identify risk points and improve safety levels.

Operation Preview

Inspection planning

Based on online monitoring, inspection robot, orbit camera and other hardware editing rule. The inspection process is recorded and can be viewed.

Information visualization

Including: equipment and facilities state visualization, operation visualization, operation visualization

Fault simulation

The simulation process and results are displayed with 3D animation to assist in accident reenactment analysis.

Skills training

The equipment model could be simulated and visually displayed by 3D animation.
Thanks!