VISION SOLUTIONS

The State of Data Sharing

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Manager & Technical Specialist, Sales Engineering

Topics

- Data sharing market trends
- Challenges and pitfalls of ETL processes
- Introduction to MIMIX Share
- Real-world case studies
- Q&A

Data Sharing Market Trends

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Vision Solutions 2017 State of Resilience Report

4
Surveys on HA/DR, migration, data sharing and cloud computing

1,598
IT professionals responded

86%
plan, manage or administer IT systems

Titles ranged from CTO, CIO, System Architect, and Head of Computer Systems to Database Administrator, Director of Information Systems, Senior Network Engineer, Manager of Cloud Systems

Respondents represented a wide array of countries from around the globe

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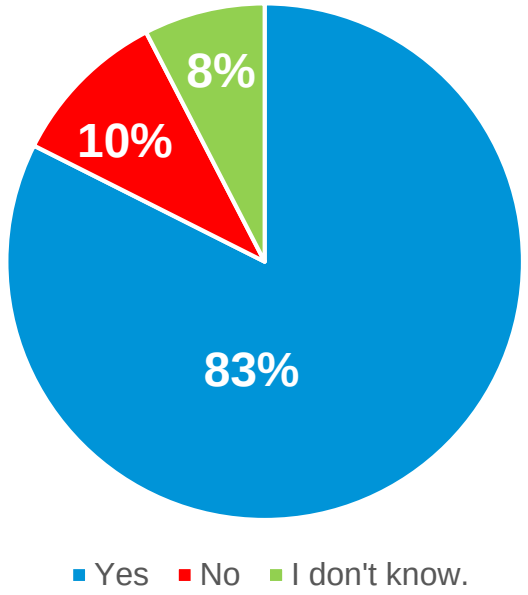
The State of Data Sharing

The State of Data Sharing: Prevalence

Does your organization rely on multiple databases?



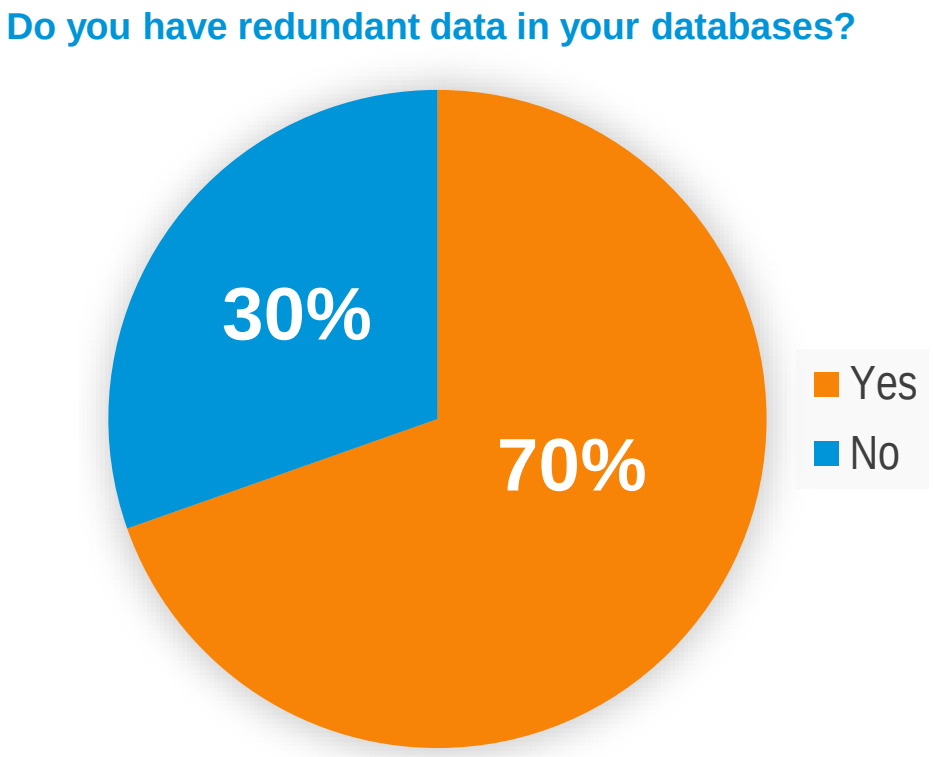
83% of respondents rely on multiple databases

10% do not

8% did not know

The State of Data Sharing: Concerns about Inconsistency

70% of respondents with multiple databases had redundant data stored in them.

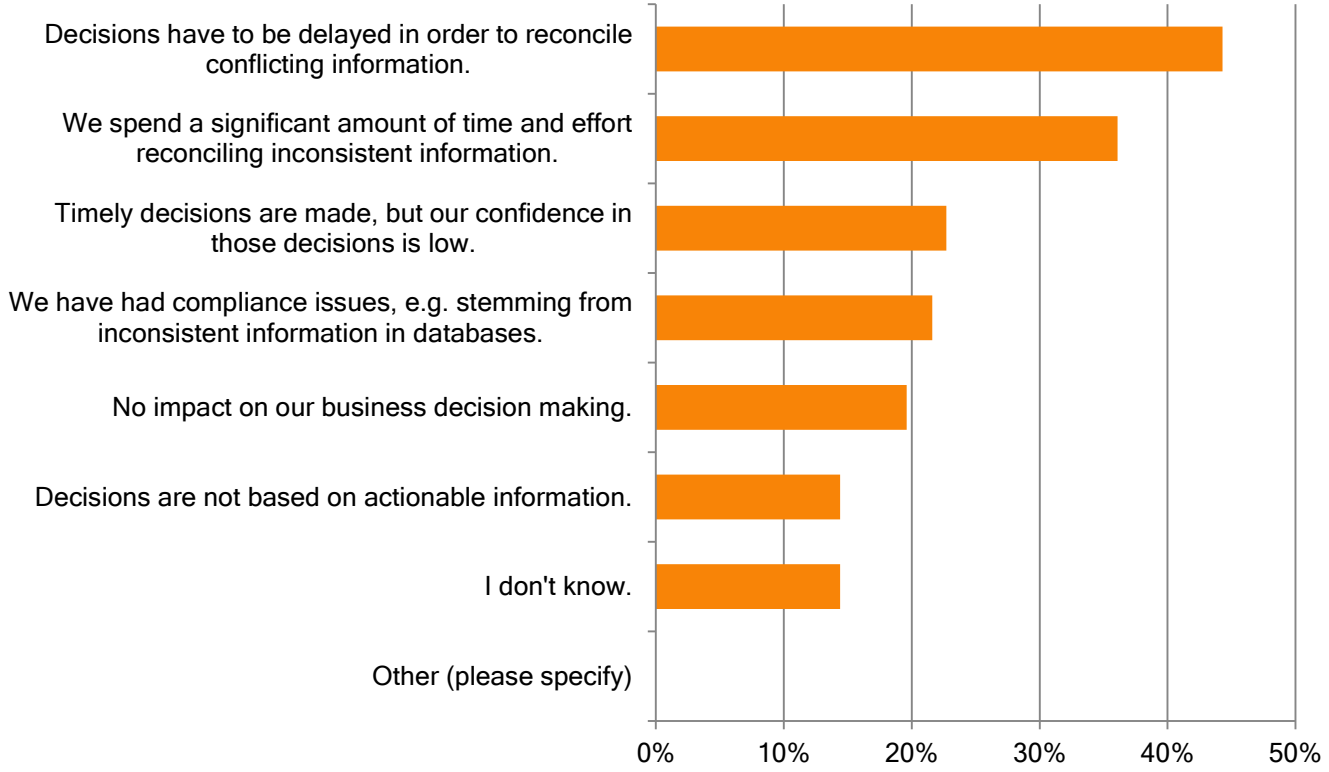


The State of Data Sharing: Business Decision Concerns

Almost half of respondents with redundant data in their databases indicated that decisions have to be delayed in order to reconcile conflicting information (44%).

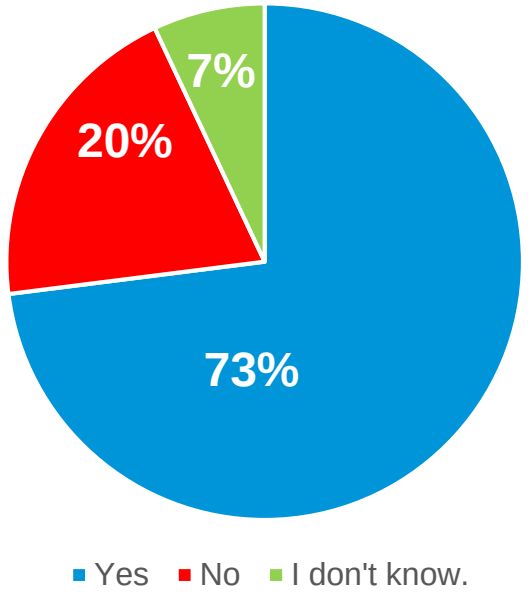
Over one-third reported that spending a significant amount of time and effort reconciling inconsistent information (36%).

How does inconsistent information impact business decisions?



The State of Data Sharing: Prevalence

Do you share data between your databases?



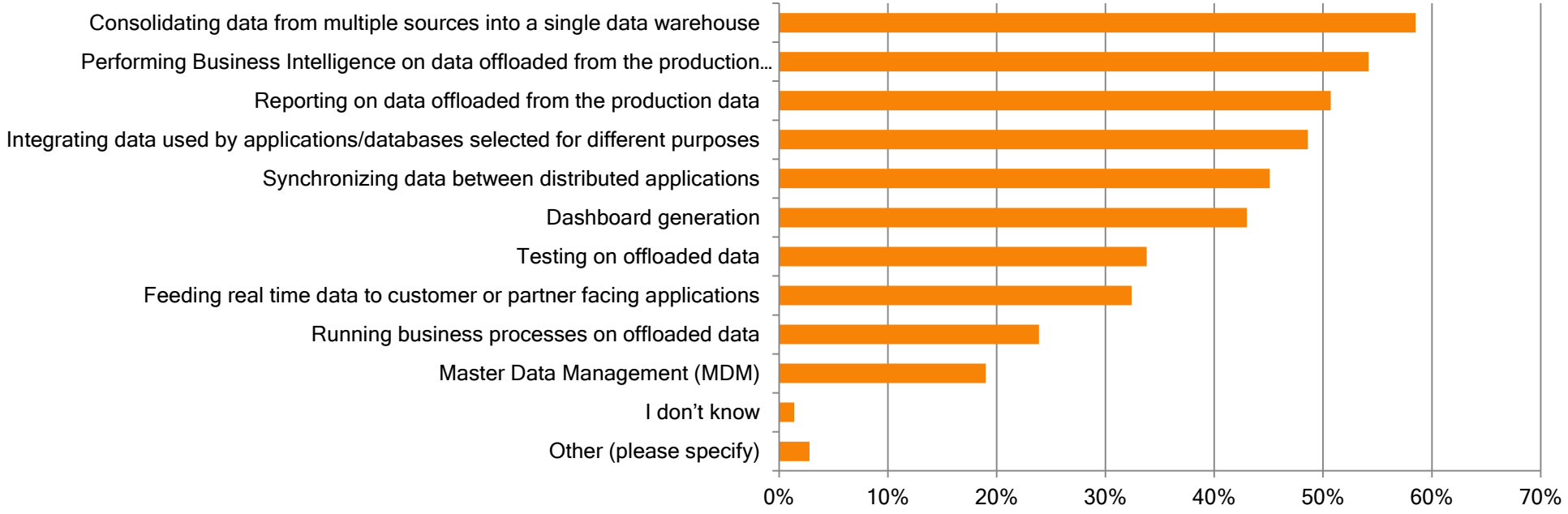
73% of respondents share data between databases

20% do not

7% did not know if they do

The State of Data Sharing: Business Purpose

For what business purpose does your organization share data between databases?



59% are consolidating data from multiple sources into a single data warehouse

54% perform Business Intelligence on data offloaded from the production database

51% report on data offloaded from the production database

49% integrate data used by applications/databases selected for different purposes

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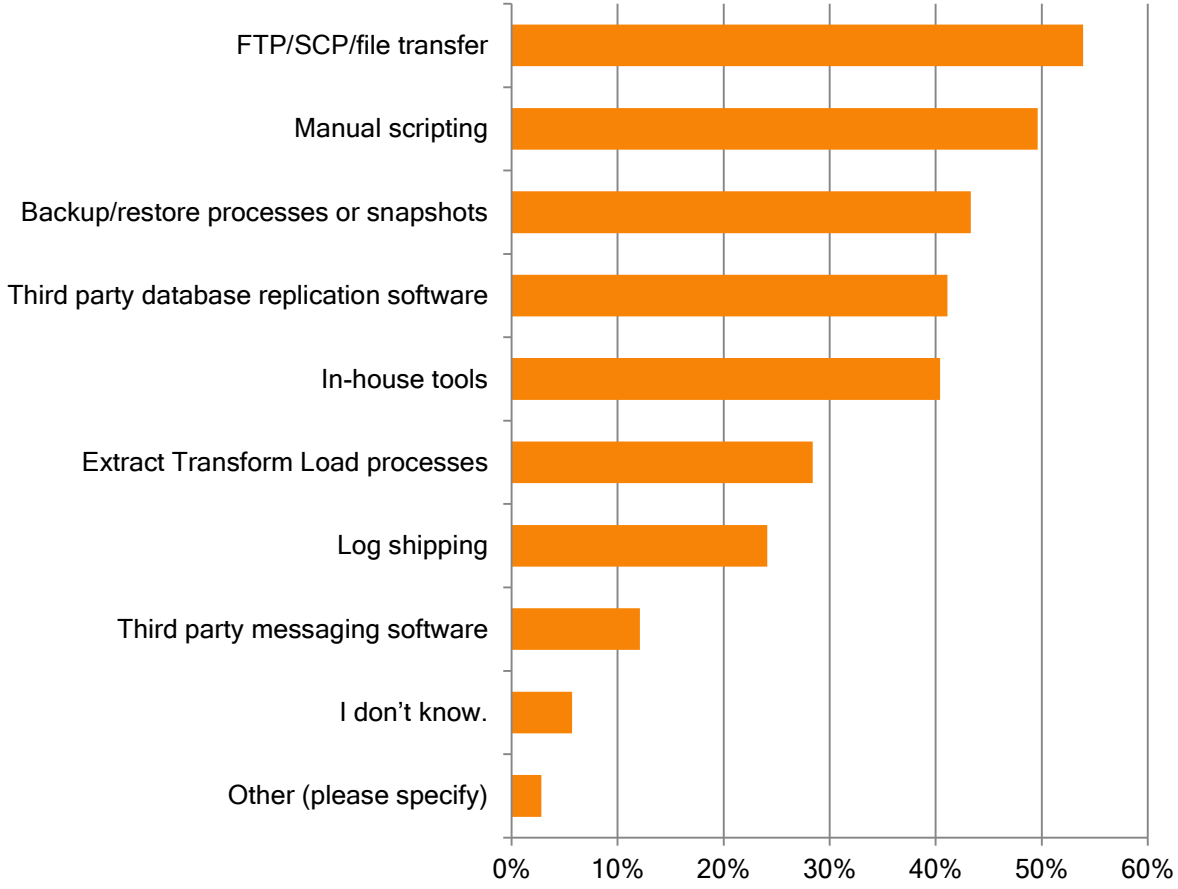
The State of Data Sharing Methods

Many respondents use in-house tools or manual methods for data sharing

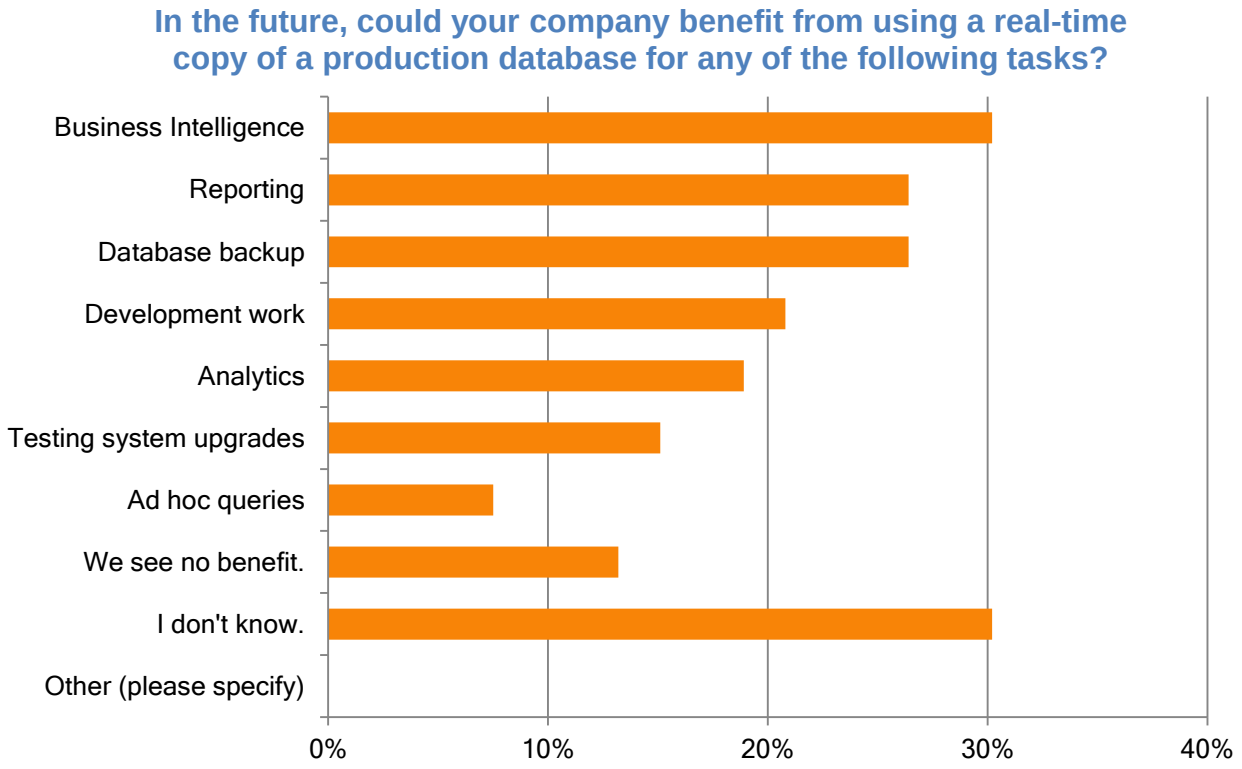
- A majority (54%) of respondents use FTP/SCP/file transfer to share data between databases
- 50% use manual scripting
- 43% use backup/restore processes (snapshots)
- 41% use in-house tools
- 28% use ETL processes

41% of our sample use third party replication software

What techniques are used for data sharing?



The State of Data Sharing: Future Benefits



30% indicated their company would benefit from using a real-time copy of production data for BI

26% would benefit from real-time data for reporting and backup

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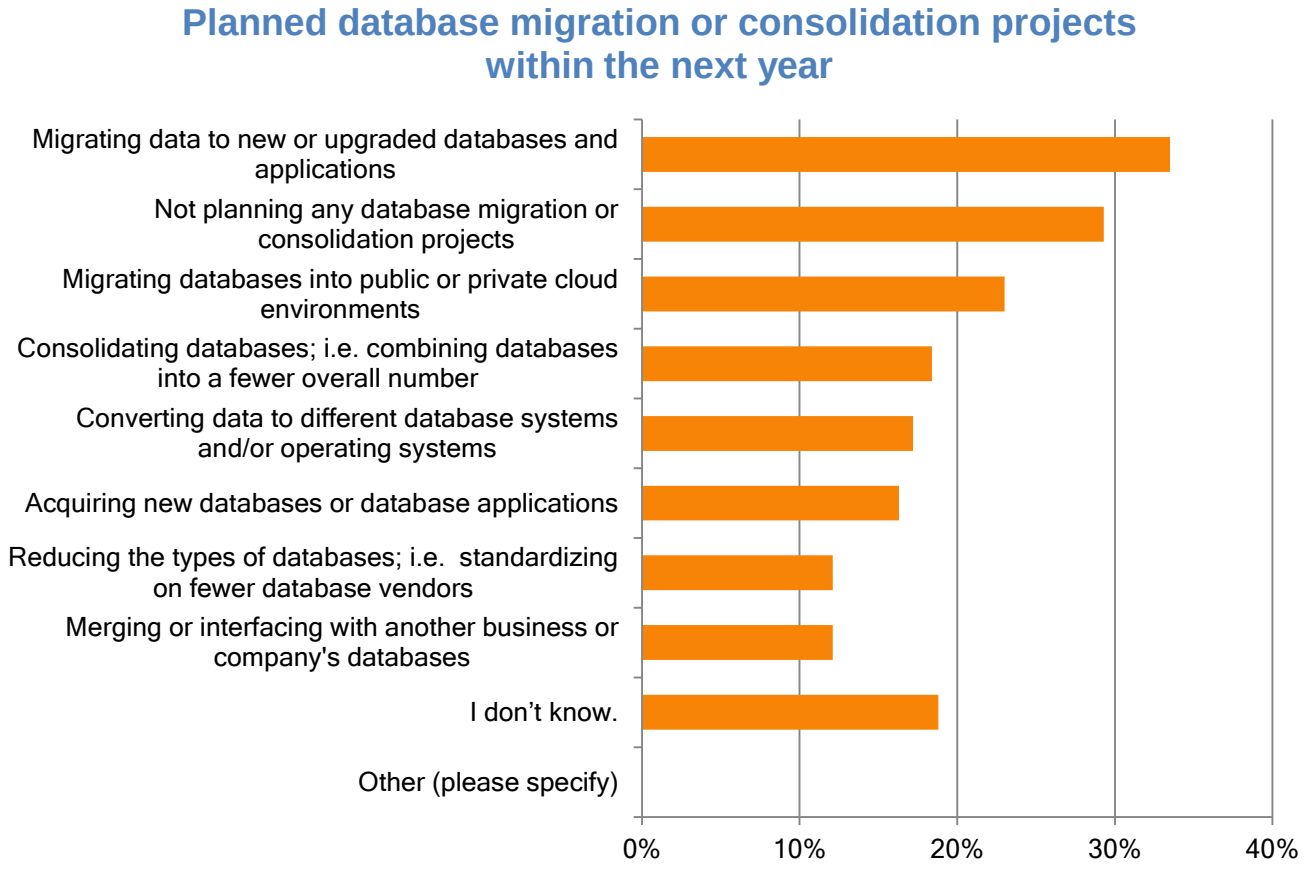
The State of Data Sharing: Migration Initiatives

When asked about database migration or consolidation projects:

- 34% plan to migrate data to new databases
- 23% plan to migrate database to the cloud
- 17% plan to consolidate to fewer databases
- 17% plan to migrate to new DBMS or OS platforms



Traditional Methods for Obtaining Data for Reports

- Direct network access
  - Reporting on production servers across the network during business hours (32%)
  - *Issue:* Negatively impacts network and database performance – resulting in user complaints! (41%)

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- In-house ETL (Extract-Transform-Load) Processes
  - FTP/SCP/file transfer processes or Manual scripts or Backup/restore or In-house tools
  - *Issue:* Periodic, not real-time, delivery of data
  - *Issue:* Labor intensive to create processes and tools
  - *Issue:* Expensive to develop and maintain
  - *Issue:* Prone to errors

In-House ETL Scripts and Processes Are Not Free

- Upfront development costs
  - Development of code to perform database extraction, transformation, and load
  - Additional requirements for additional pairings, schemas, etc.
- Test system expenses
  - Hardware and storage resources
  - Database licenses for test systems
  - Add-on products, e.g. gateways
- Maintenance costs
  - Ongoing enhancements for altered schemas, additional platforms
  - Testing new database and OS releases
  - Cross training and documentation to reduce turnover risk
- Lost opportunity costs for other initiatives

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MIMIX Share Overview

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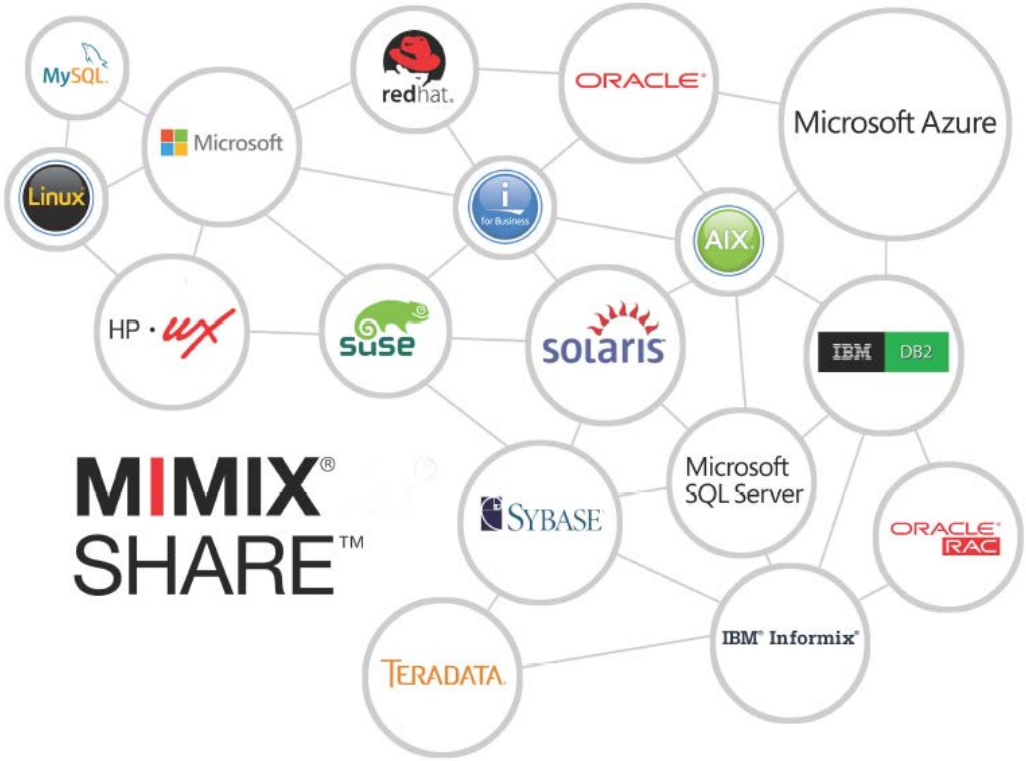
MIMIX Share for Easy, Automated Data Sharing

- Breaks down barriers between databases
  - Same or different database management systems
  - Same or different operating systems
  - Physical, virtual or cloud platforms
  - Across any distance
- Makes data sharing easy
  - Replicates database changes in real time
  - Transforms and enhances data during replication
  - Supports leading database and operating systems
  - Offers a variety of replication architectures
  - Easy graphical UI – no programming required!
- Quickly returns your investment
  - Stronger decision making
  - Greater business productivity
  - Ability to choose more cost-effective infrastructure
  - Frees IT to focus on other business initiatives



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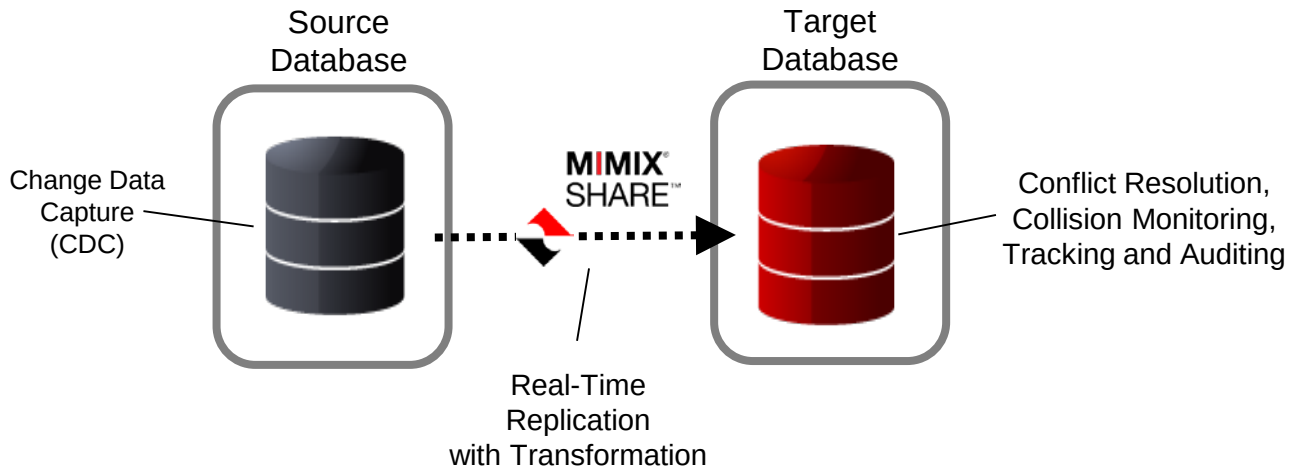
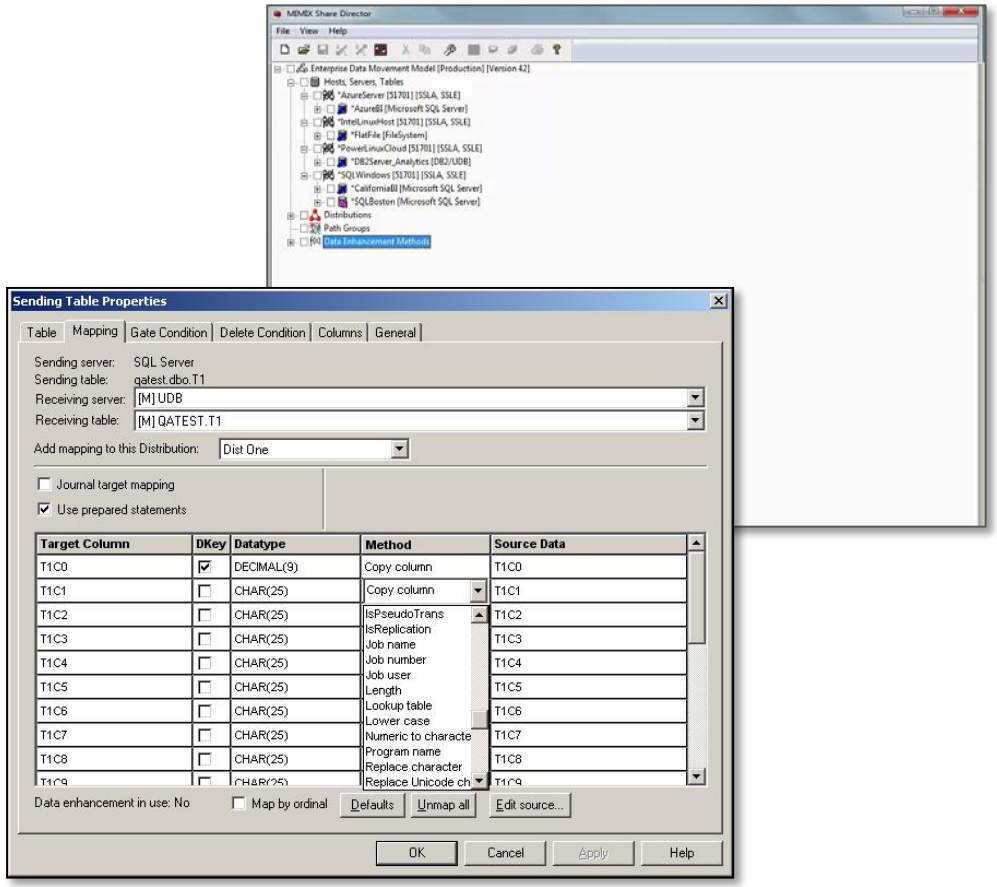
Change Data Capture (CDC) for Real-Time Replication

- Change Data Capture (CDC) captures database changes immediately and quickly replicates them to another database(s)
- Only changed data is replicated to minimize bandwidth usage
- Automatically extracts, transforms and loads data into target database without manual intervention or scripting
- Ensures write order consistency and guaranteed delivery
- Ensures data integrity with conflict resolution and collision monitoring
- Enables tracking and auditing of transactions for compliance



Replaces Manual Processes

- Point & click graphical user interface
- Single view of data across databases and operating systems
- Simple, model-based configuration
- Automatically creates target tables from the source table definition
- 80+ pre-built, click-and-go data transformations
- Transformations can be added through Java-like scripting
- No programming required



Supports a Broad Range of Platforms

Leading Operating Systems

- IBM i
- IBM AIX
- HP-UX
- Solaris
- IBM Linux on Power
- Linux SUSE Enterprise
- Linux Red Hat Enterprise
- Microsoft Windows, including Microsoft Azure

Leading Databases

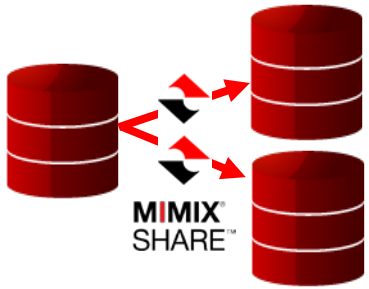
- IBM DB2 for i
- IBM DB2 for LUW
- IBM Informix
- Oracle
- Oracle RAC
- MySQL*
- Microsoft SQL Server
- Teradata*
- Sybase

Target only

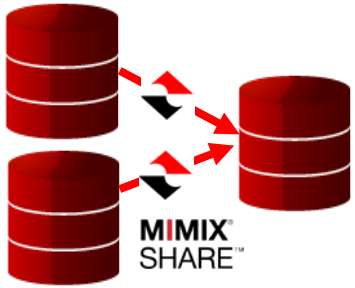
Flexible Replication Options

One Way

Distribute

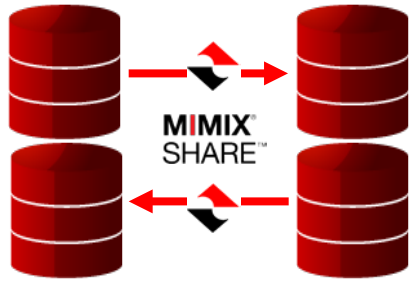


Consolidate



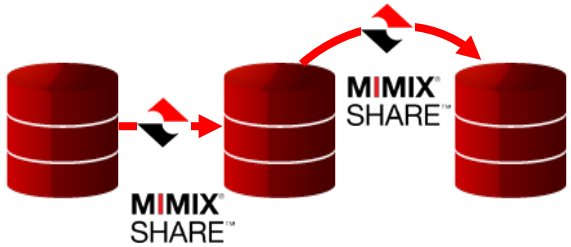
Choose a topology or combine them to meet your data sharing needs

Two Way



Bi-Directional

Cascade



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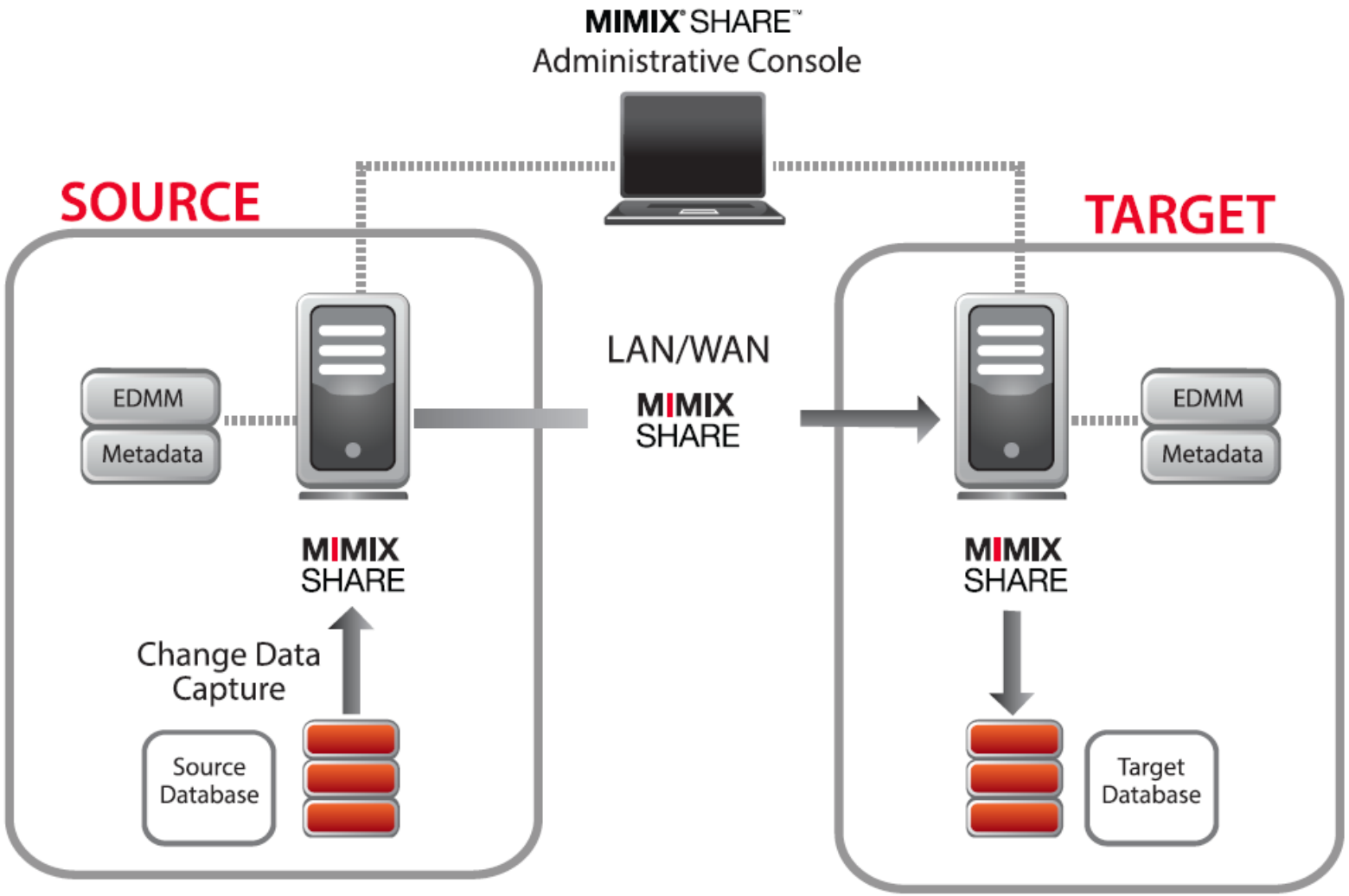
High-Level Architecture



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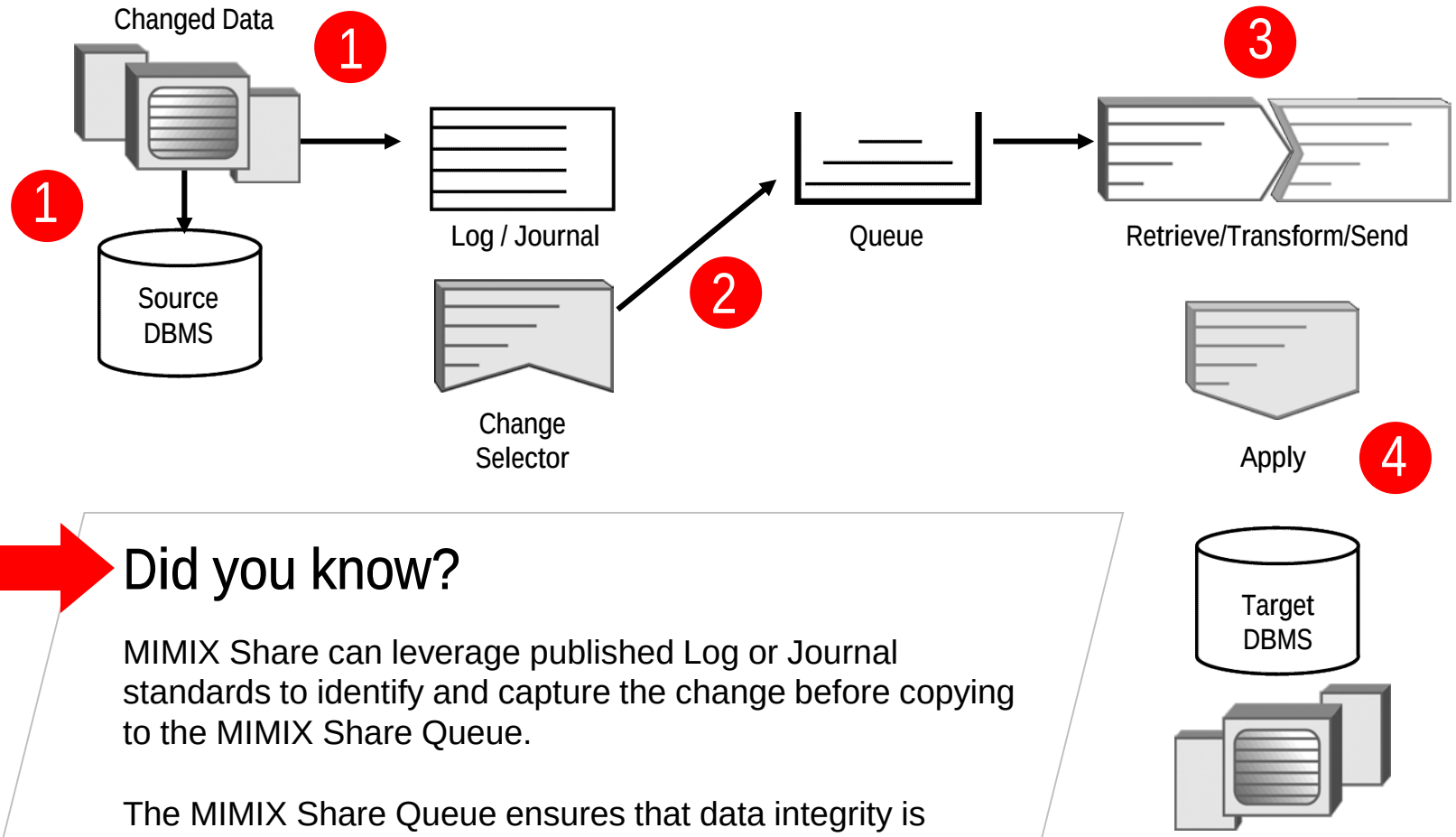
Log-Based Data Capture



1. Use of transaction logs or triggers eliminates the need for invasive actions on the DBMS.
2. Selective extracts from the logs and a defined queue space ensures data integrity.
3. Transformation in many cases can be done off box to reduce impact to production.
4. The apply process returns acknowledgment to queue to complete pseudo two-phase commit.

Did you know?

MIMIX Share can leverage published Log or Journal standards to identify and capture the change before copying to the MIMIX Share Queue.

The MIMIX Share Queue ensures that data integrity is maintained and zero data loss occurs in the event of a dropped connection during file transmission.

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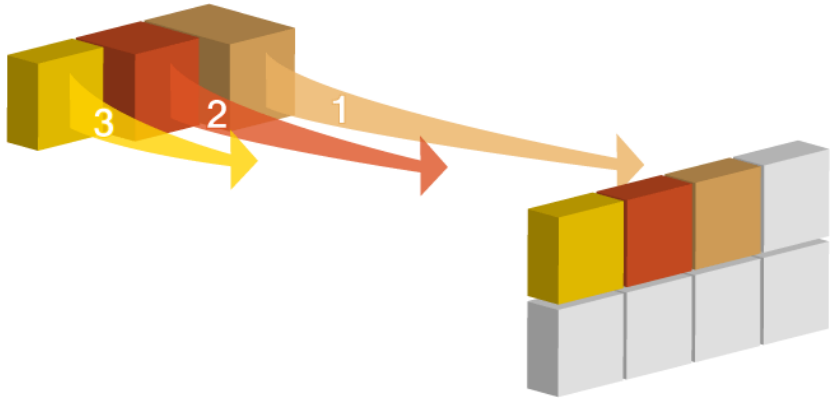
Guarantees Information Accuracy

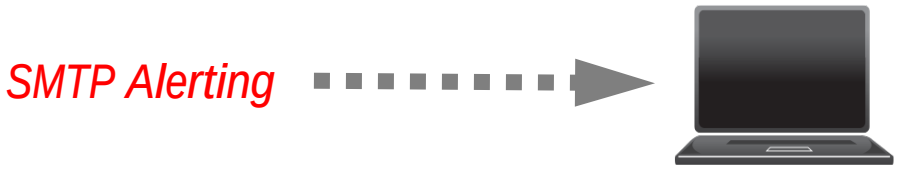
Ensures ongoing integrity

- Changes collected in queue on source
- Moved to target only after committed on source
- Ensures write-order-consistency retained
- Queues retained until successfully applied
- No database table locking



Ensures failure integrity

- Automatically detects communications errors
- Automatically recovers the connection and processes
- Alerts administrator
- No data is lost



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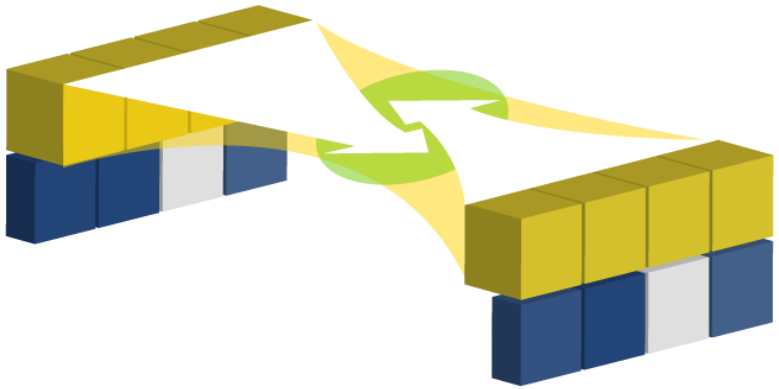
Accurate Tracking & Data Auditing

Detects and resolves conflicts
- Maintains data integrity

Model verification
- Validates date movement model

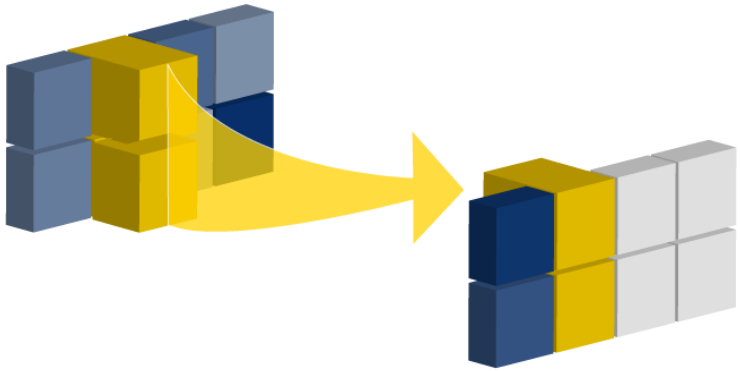


Audit Journal Mapping tracks all updates and changes
- Records
  - Before and after values for every column
  - Type of transaction
  - Type of sending DBMS
  - Table name
  - User name
  - Transaction information
- Records to flat file or to database table
- Can assist with SOX, HIPPA audit requirements

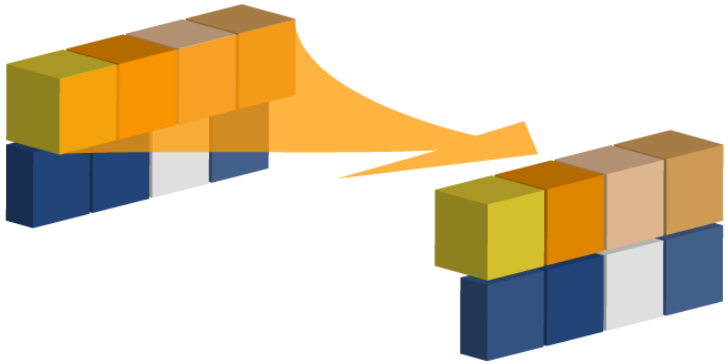
Lets You Share Exactly WHAT You Need

Filters determine what data gets moved

- Select specific column and table



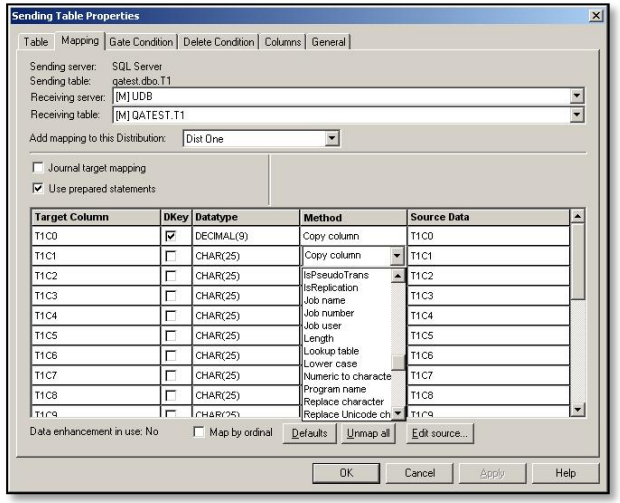
- Select specific rows and table

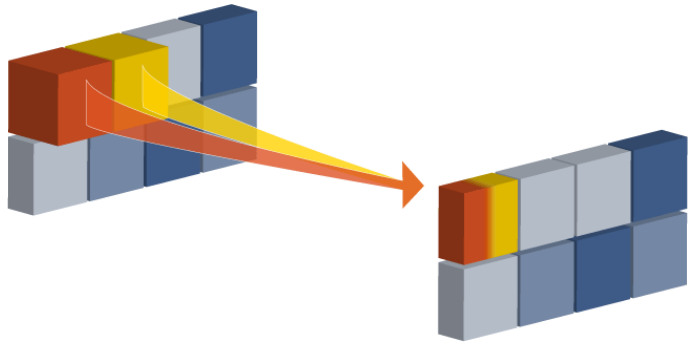


Lets You Transform the Data Exactly HOW You Need To

Transforms data into useful information

- 80+ built-in transformation methods
- Field transformations, such as:
  - DECIMAL(5,2)
  - nulltostring(ZIP_CODE,'00000')
- Table transformation, such as:
  - Column merging
  - Column splitting
  - Creating derived columns
- Custom lookup tables
- Create custom data transformations using powerful Java scripting interface





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Real-World Use Cases

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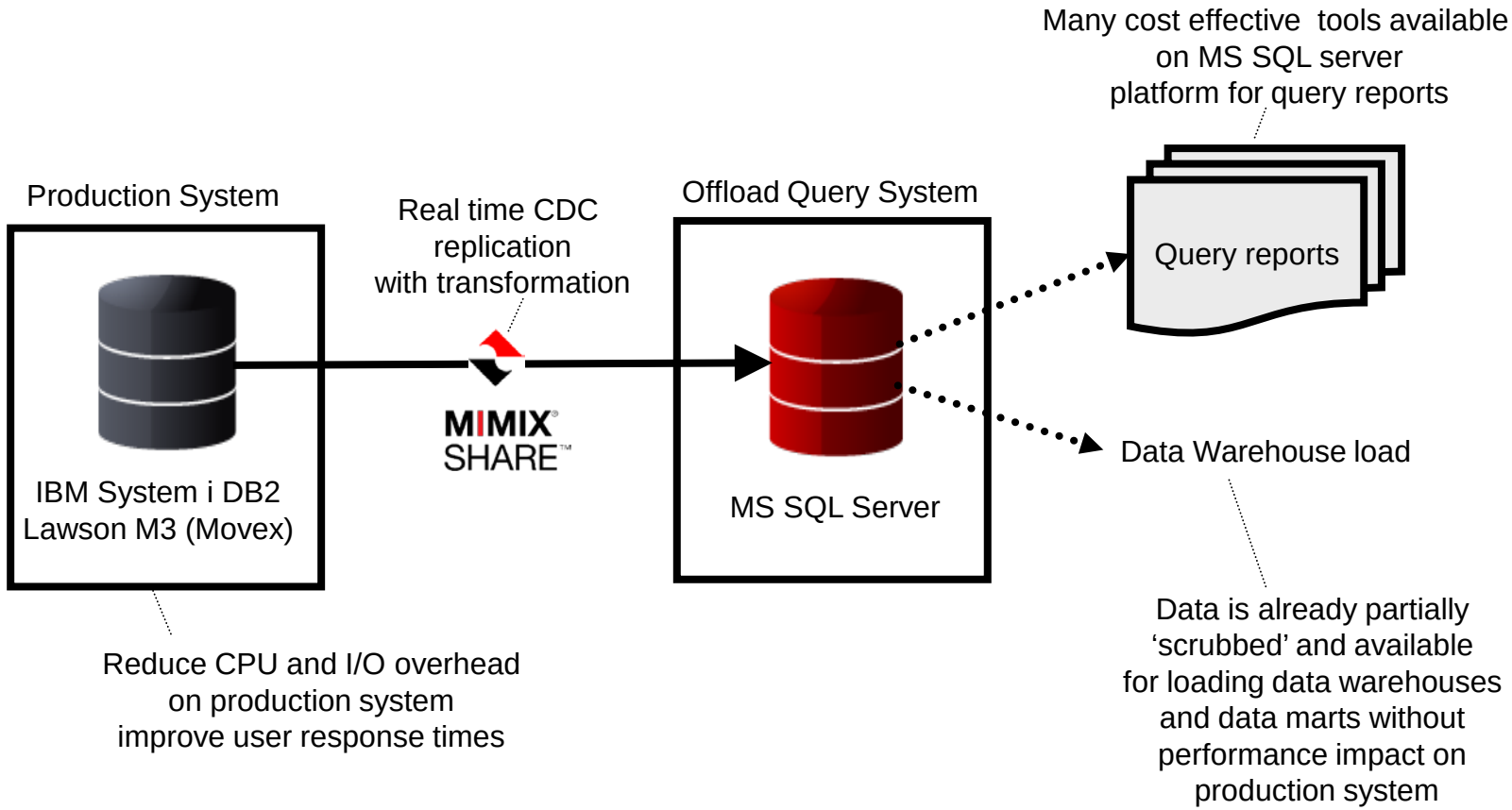
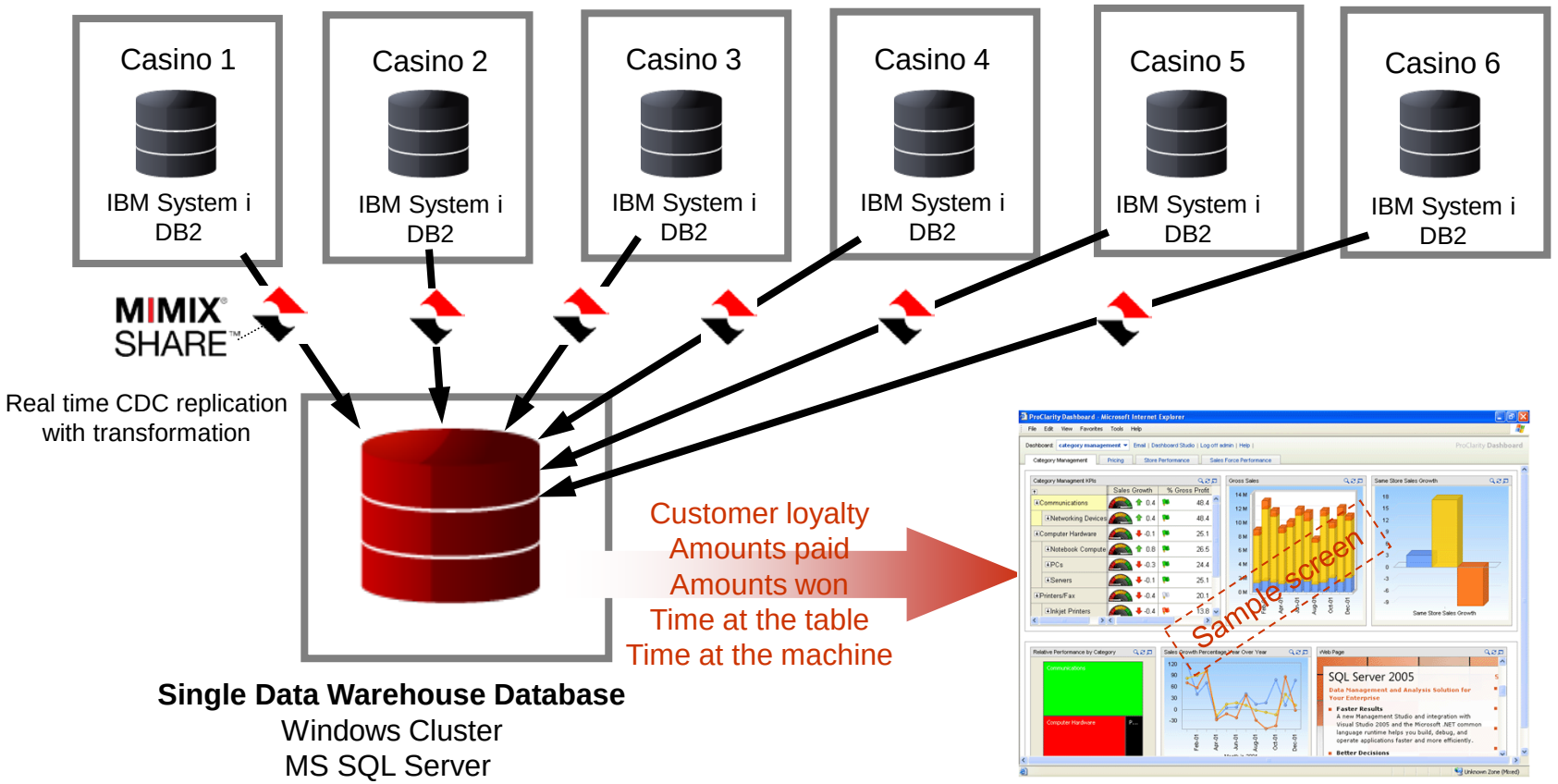
Use Case:
Offload Reporting from Production Database

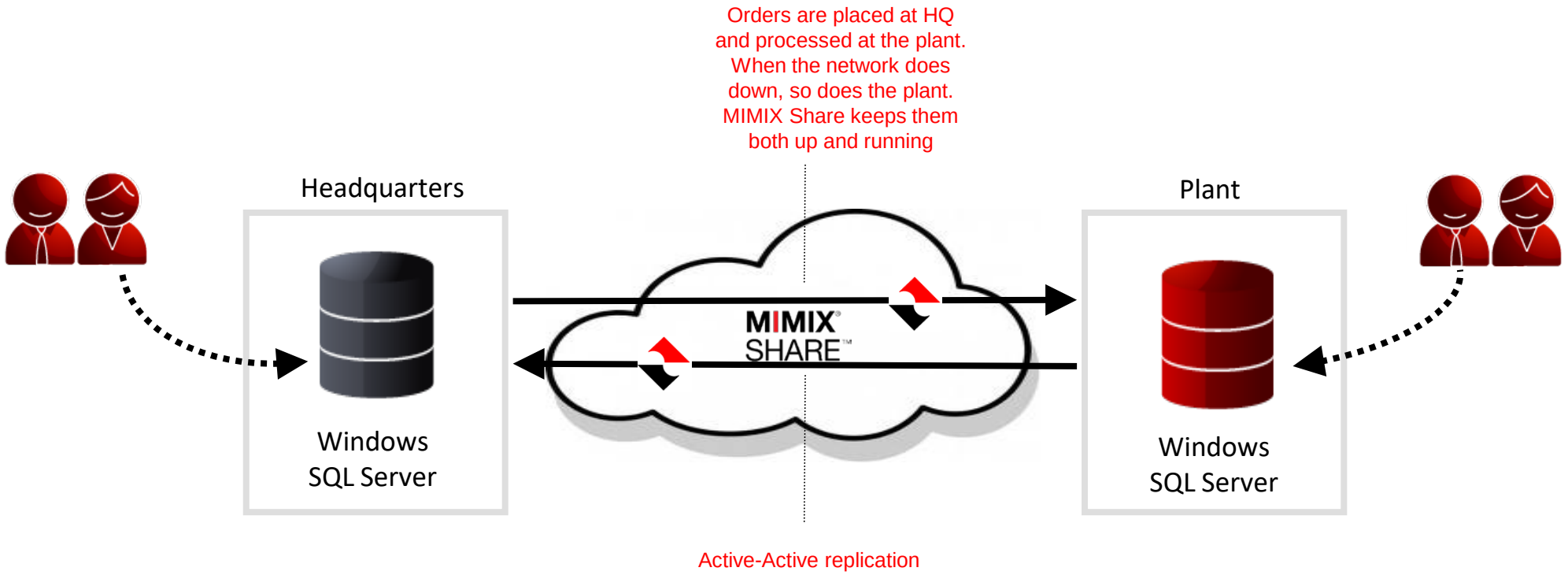


Use Case:
Centralized Reporting



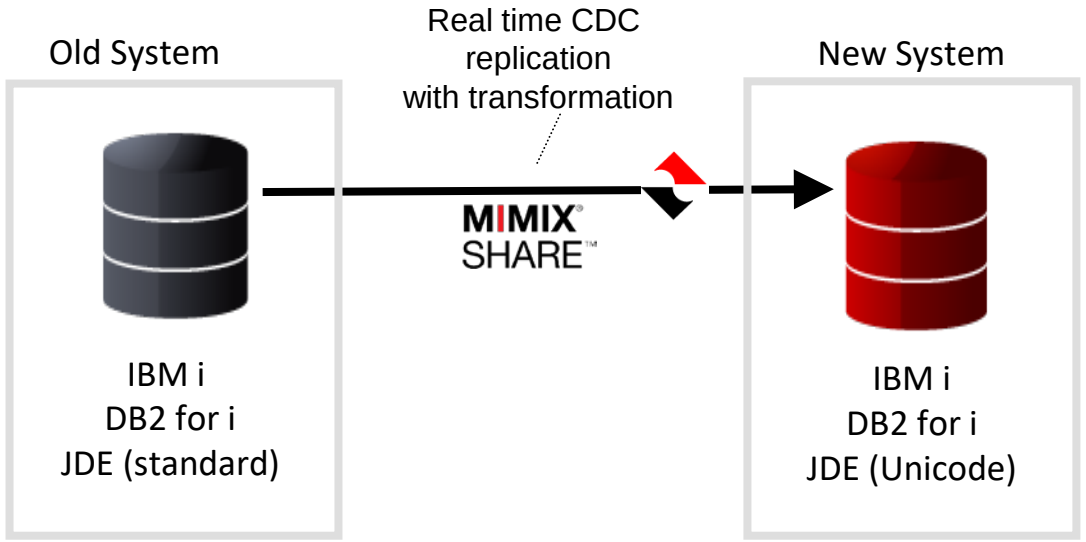
Use Case:
Business Process Integration

Manufacturing Company



Use Case:
Database Migration

Manufacturing Company



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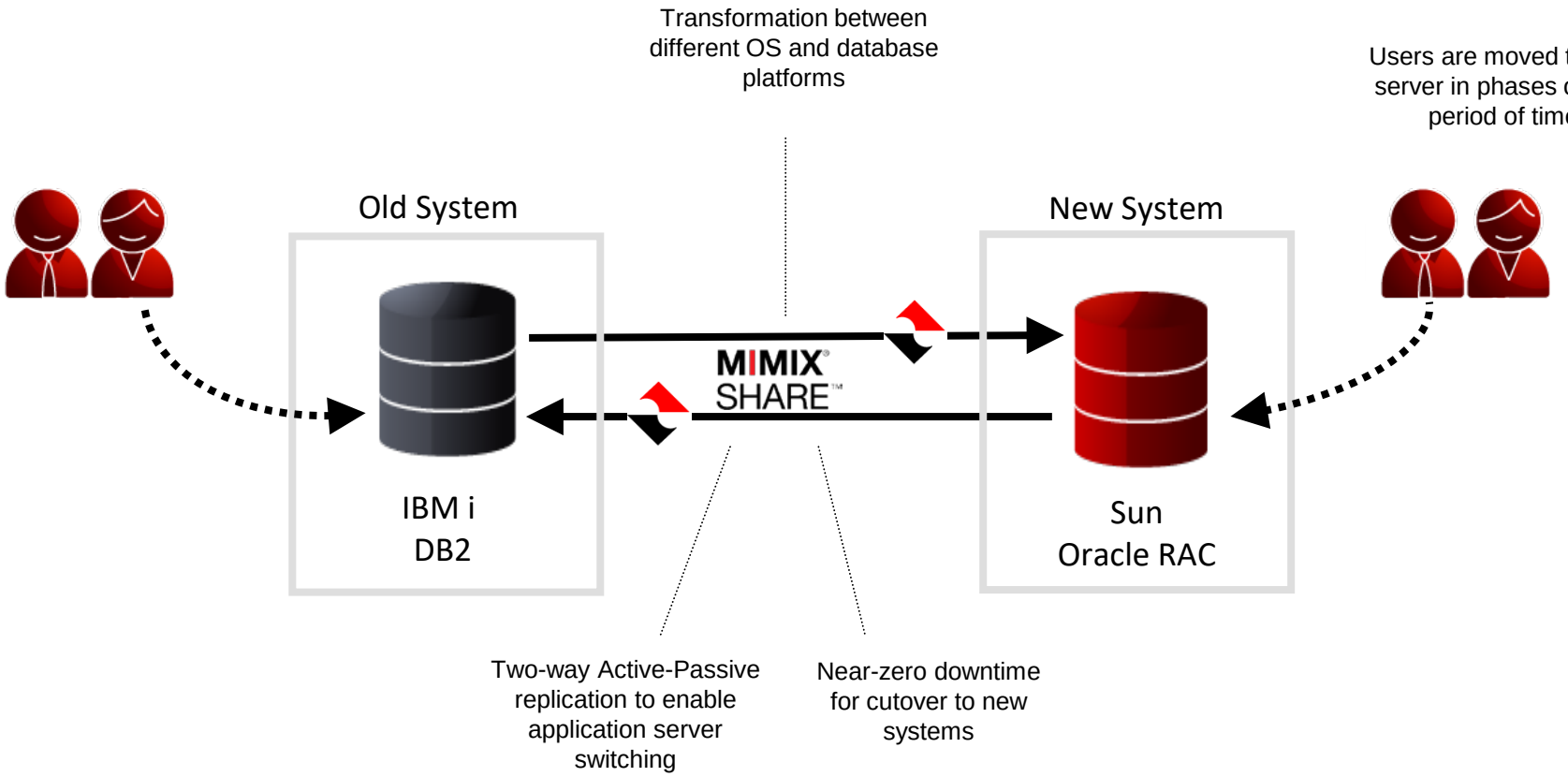
Use Case:
Database Replatforming

Large Insurance Company



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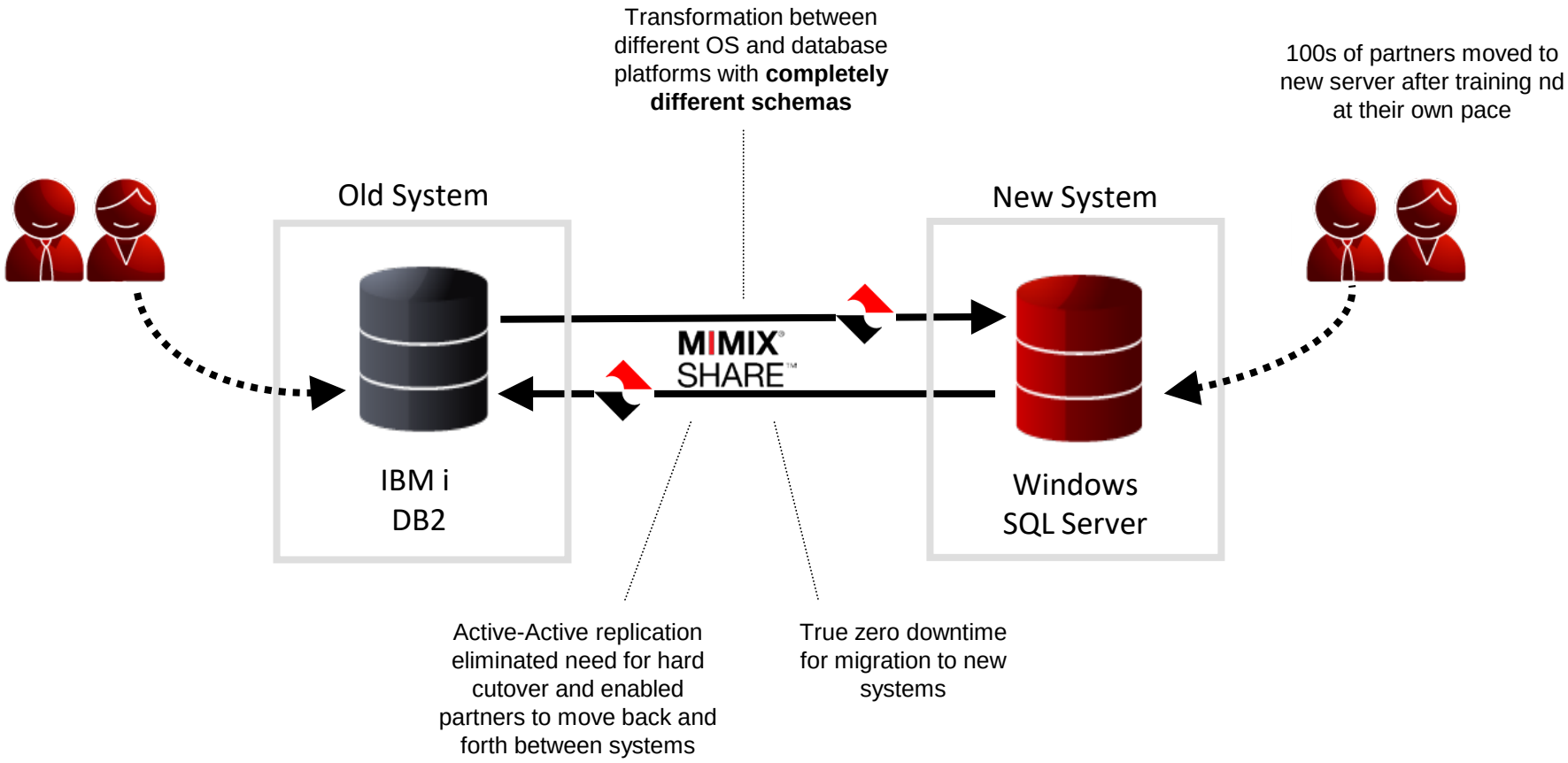
Use Case:
Gradual Database Replatforming

America II Corp



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Summing It Up

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Summing It Up

1. Market trends show data sharing methods lagging
2. ETL processes are not free and create challenges
3. MIMIX Share provides easy, automated data sharing
4. MIMIX Share addresses a variety of data sharing needs

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The State of Data Sharing

Key Takeaways

Results indicate a clear need for a paradigm shift in database management and data sharing.

Businesses are at risk when faulty data is used or decisions are delayed because time is spent reconciling data inconsistencies.

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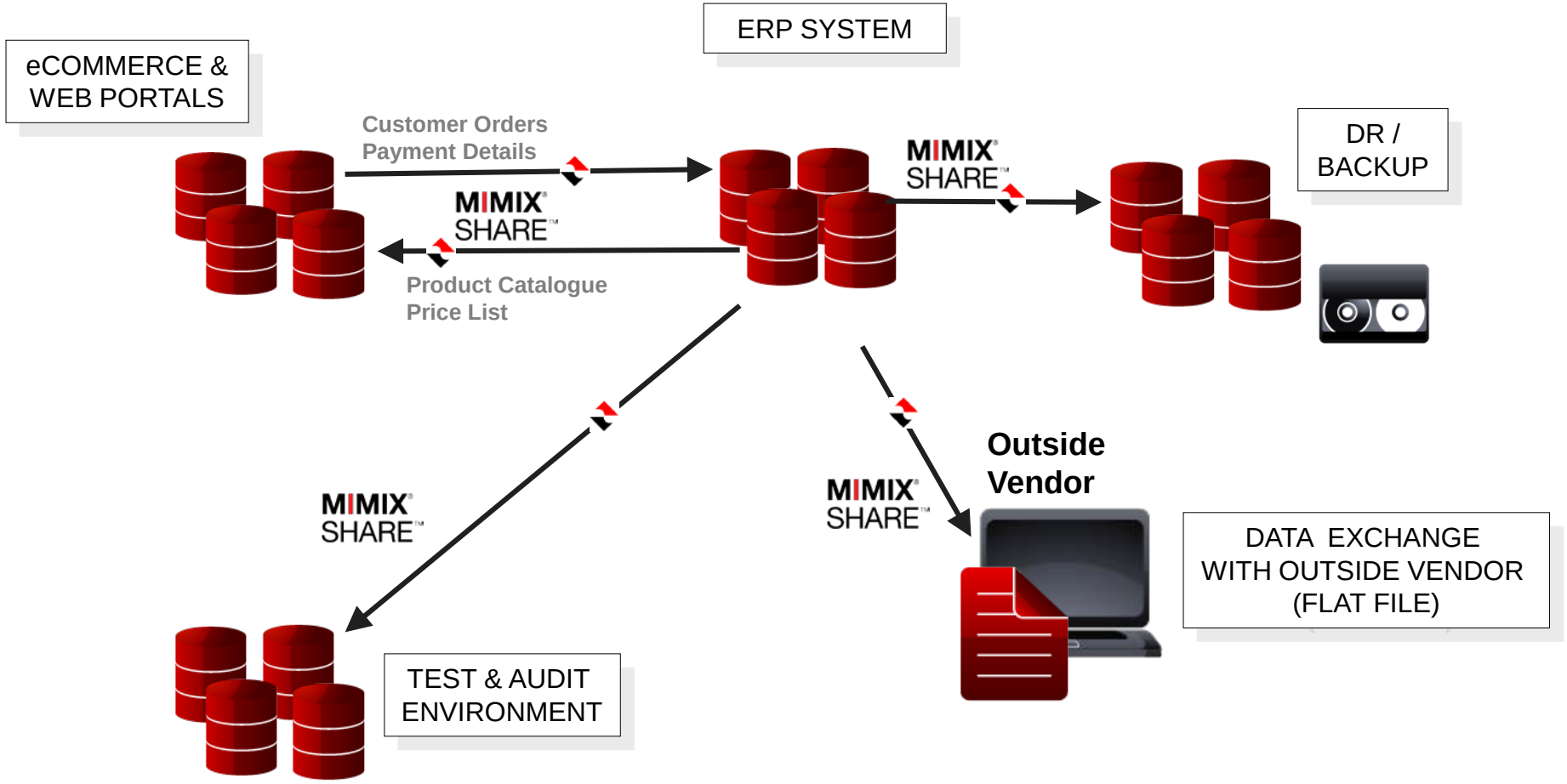
The tools and processes used to manage data are lagging, so organizations aren’t moving quickly enough to capitalize on its strategic value.

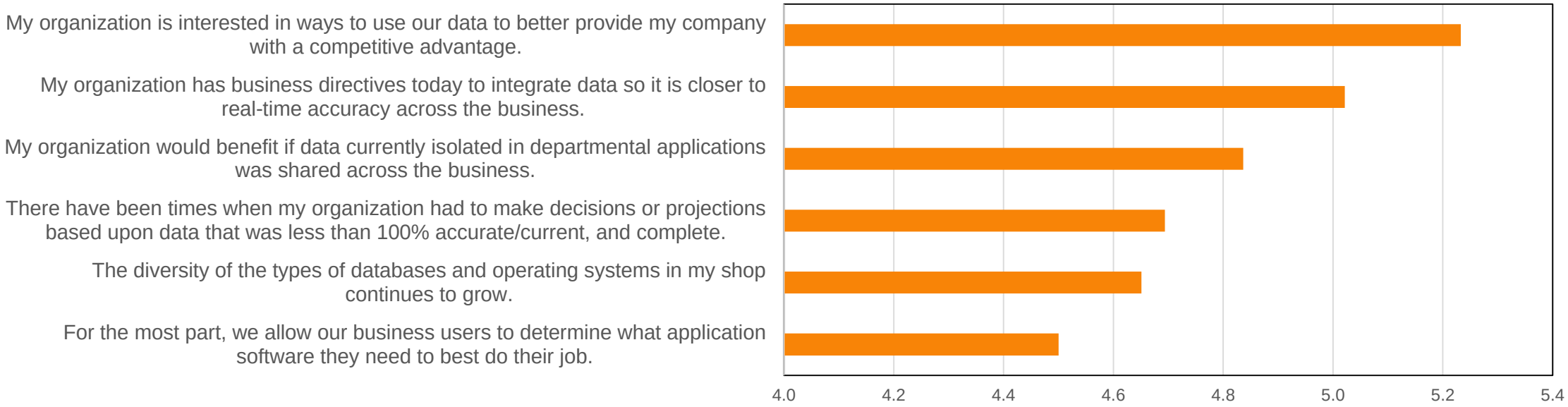
Companies must take aggressive steps to align their data sharing schemes strategically and operationally with business directives.

Additional Use Cases



The State of Data Sharing: Perceived Needs

Indicate your agreement with the following statements on a scale of 1-7
(7 = Strongly Agree; 1 = Strongly Disagree)



#1 - My organization is interested in ways to use our data to better provide my company with a competitive advantage (5.2)

#2 - My organization has business directives today to integrate data so it is closer to real-time accuracy across the business (5.0)

#3 – My organization would benefit if data currently isolated in departmental applications was shared across the business (4.8)

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