



IBM SOA Technology Summit

Moving Ahead With SOA

Information Services Vision & Strategy

Michael Curry, Market Management, Information
Integration Solutions, Software Group, IBM

SOA on your terms and our expertise



Corporate View of Information Architecture Is Changing

- Information is the key to Business Innovation
 - Organizations highly effective at driving information integration are 5 times more likely to drive value creation
 - Companies that wait for their application vendors to innovate are losing the opportunity to differentiate

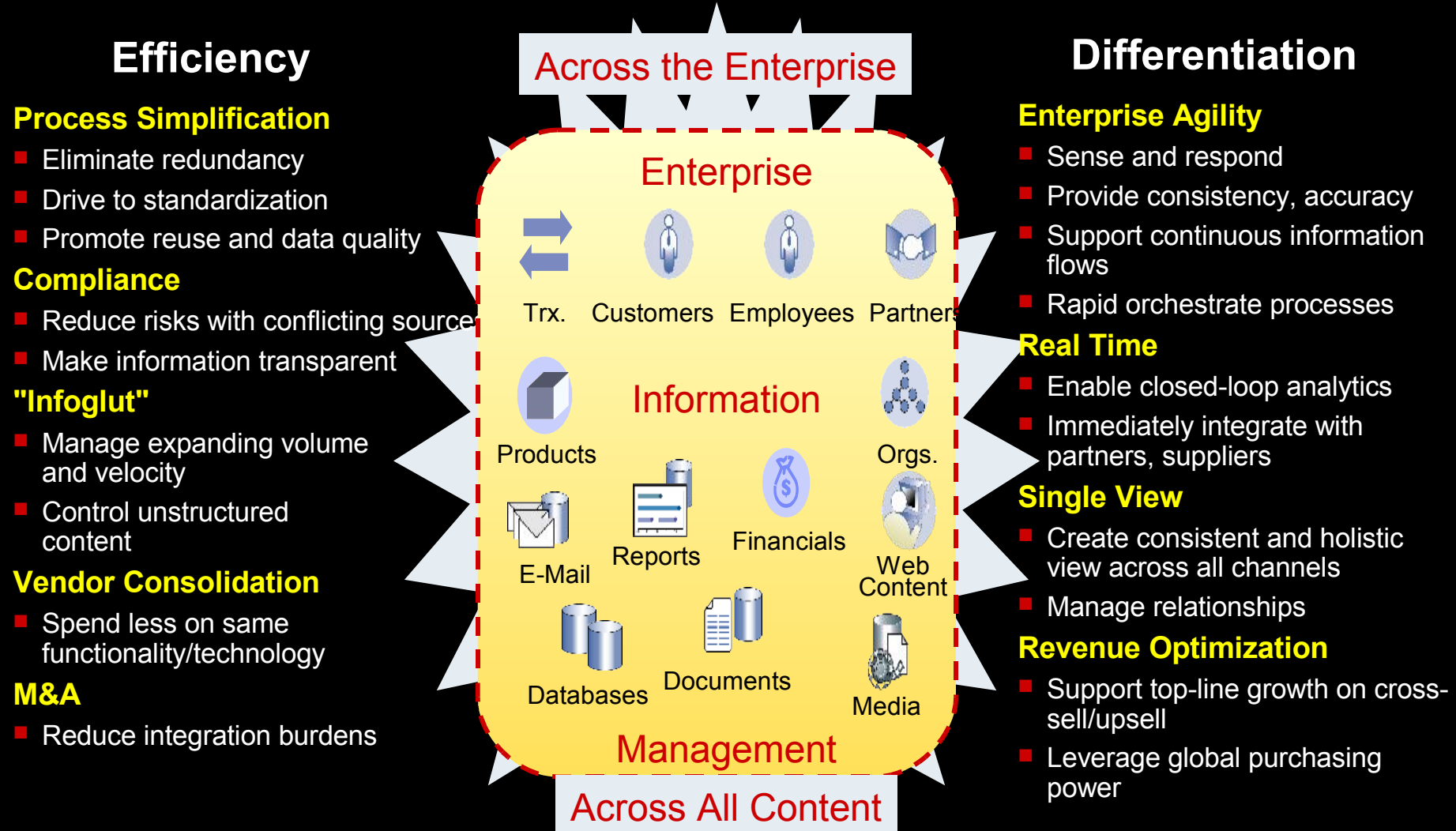


*87% of CEOs believe fundamental **change** is required in next two years to drive innovation*

Over 60% of CEOs believe their organizations need to do a better job leveraging information

Source: 2006 IBM Global CEO Survey

What is Driving the Change? – Gartner Perspective



Customer Business Issues

- **Multiple Versions of the Truth**
 - Inability to understand and tailor customer interactions
 - Inability to collaborate effectively with supply chain
 - Difficulty in complying with information-centric regulations
- **Need to do a Better Job Leveraging Information**
 - Not using demand signals to drive supply chain
 - Not using customer analysis to tailor marketing and sales
 - Not leveraging sources of unstructured information
- **Don't have Trust in their Information**
 - Asking the same question in different places produces different results
- **Don't Feel like they have Control Over Information**
 - No way to understand or control how information is used
 - No governance of sensitive information on customers or accounts



Enabling Information as a Service

1

Data Complexity, Inconsistency, & Inaccessibility

Build consistent reusable services for trusted information

2

Multiple Versions of the Truth

Build master data services for product and customer info

3

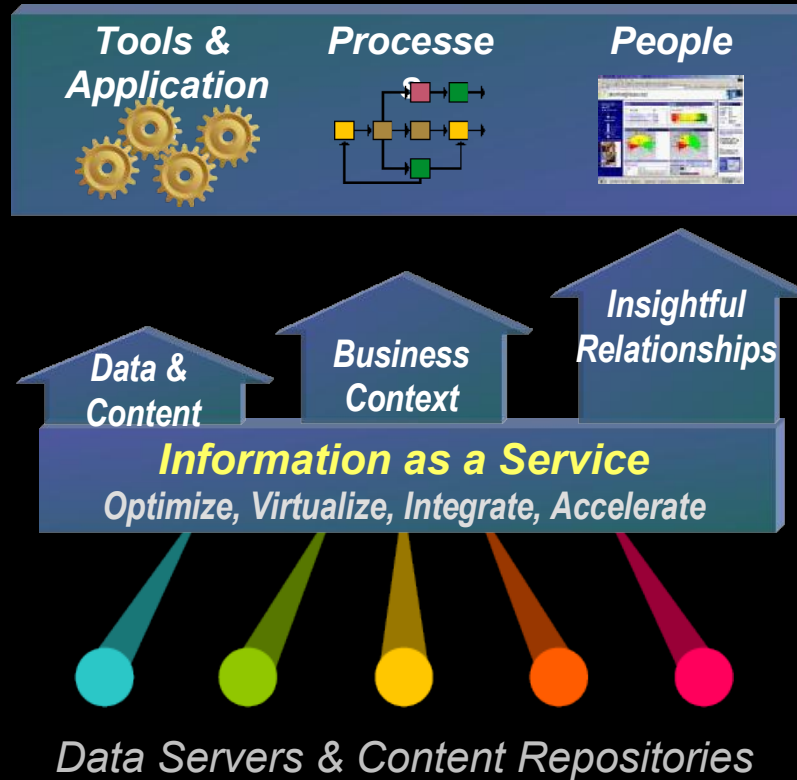
Unleveraged and Unexplored Content

Build consistent reusable services for integrated content

4

Unleveraged and Unmanaged XML

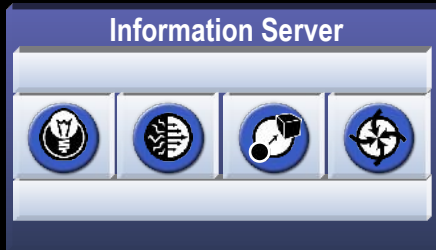
Integrate management of XML & relational data



Enabling Information as a Service

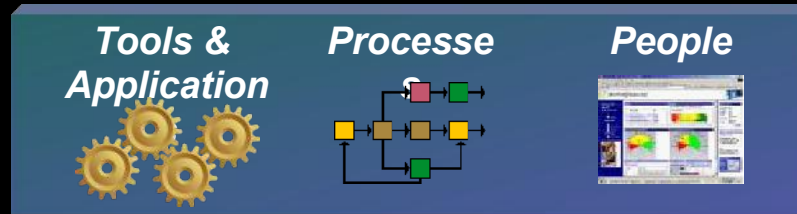
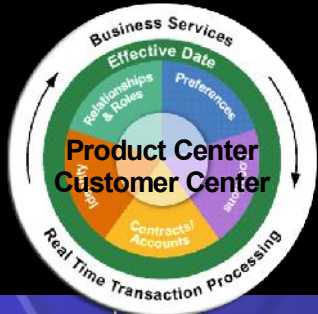
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Data Complexity, Inconsistency, & Inaccessibility



2

Multiple Versions of the Truth

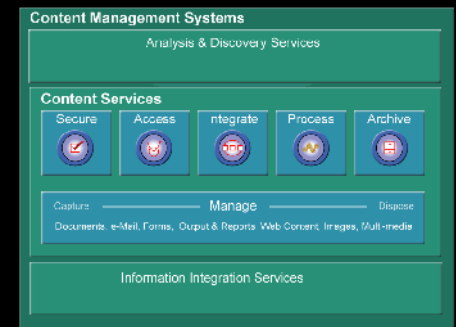


Information as a Service
Optimize, Virtualize, Integrate, Accelerate



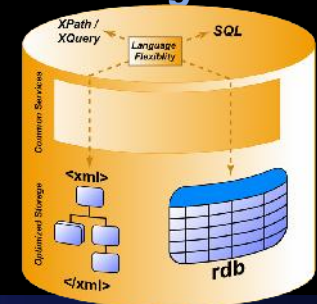
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Unleveraged and Unexplored Content

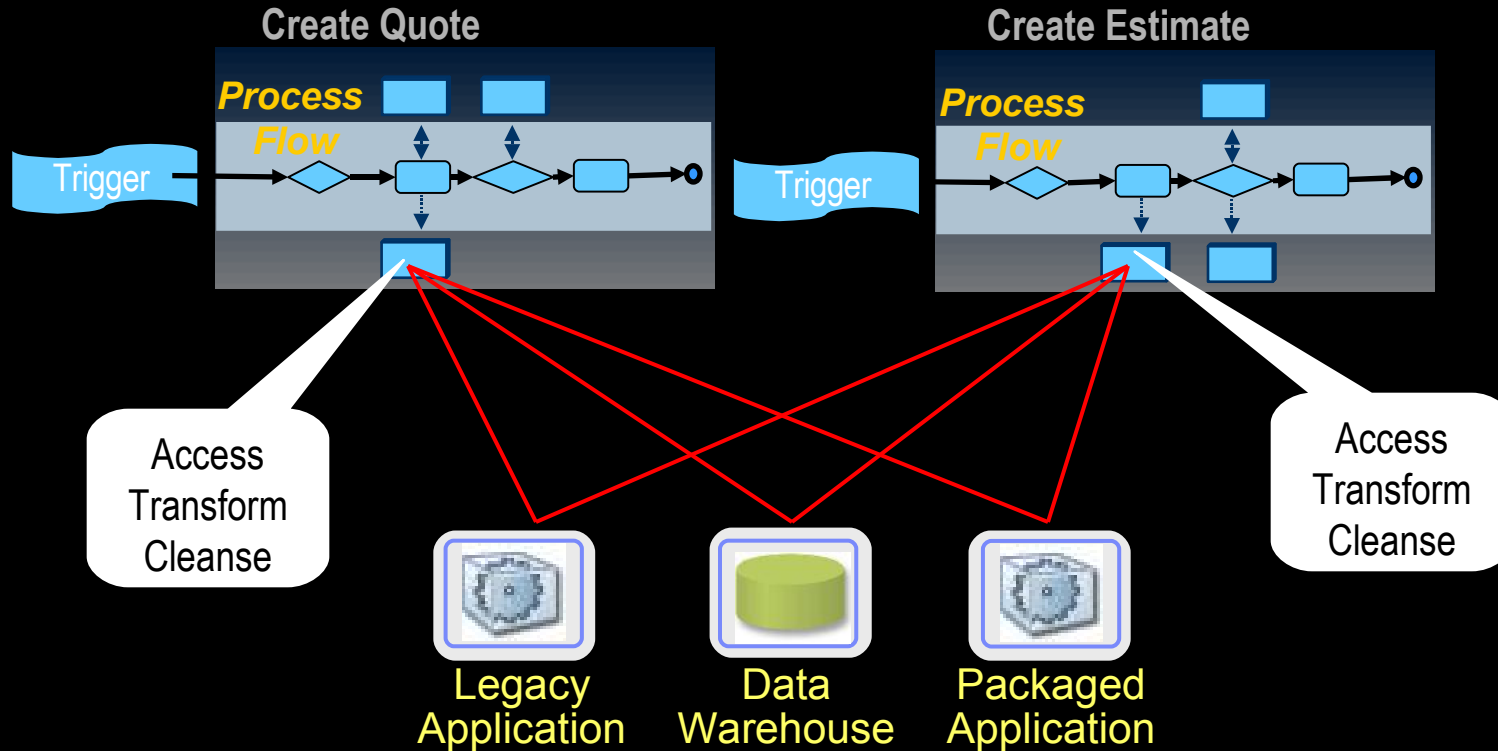


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Unleveraged and Unmanaged XML

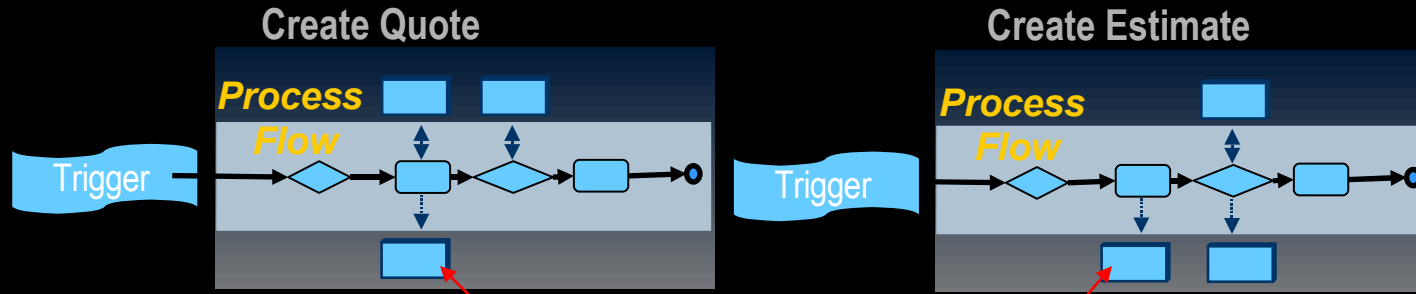


Tight Coupling of Data to Workflow Locks You In



- *Inconsistency in the “view” of the data*
- *Inconsistency in sources and how data is derived*
- *Inconsistency in rules applied to data*
- *Multiple points of maintenance*
- *No flexibility to change information sources and formats*

Information Virtualization Improves Flexibility

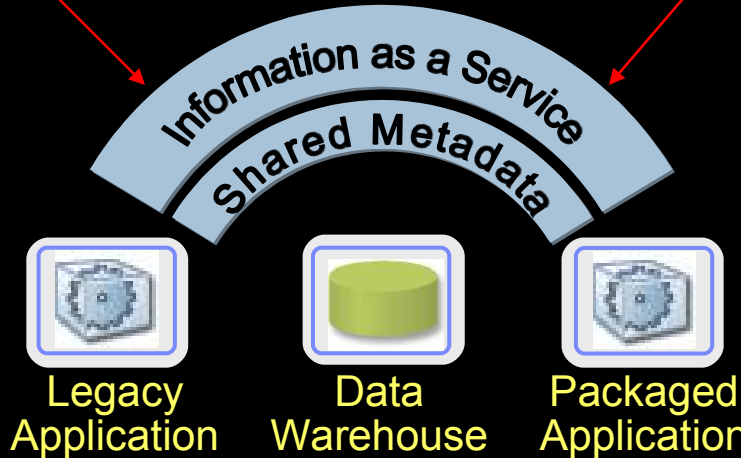


Accessibility

Flexibility

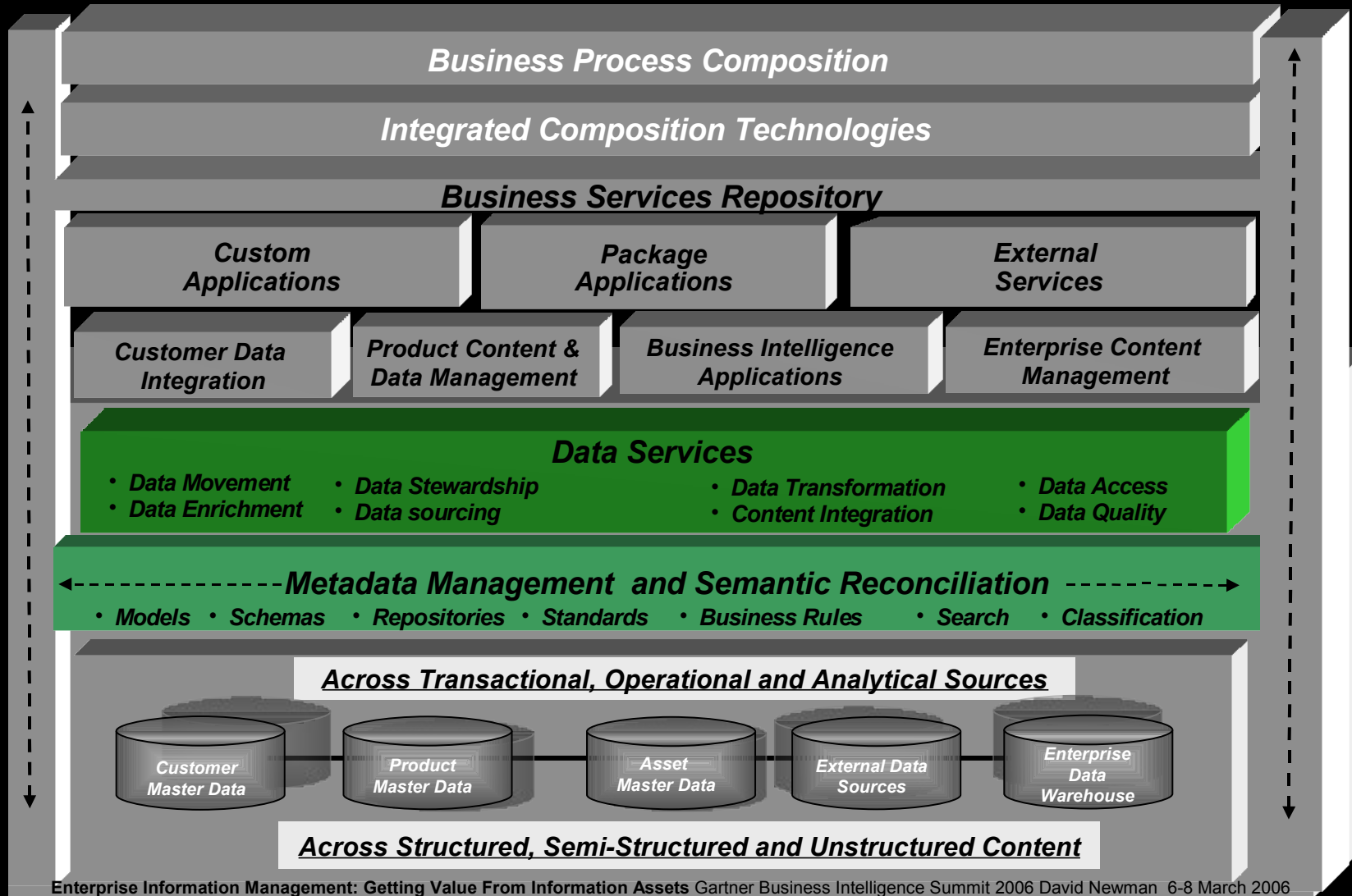
Consistency

Control



- Consistent packaging of data
- Leverages understanding of metadata relationships
- Applies consistent rules to data
- Centralized control and maintenance
- Flexibility to change information sources and formats

How Gartner Defines the Requirement



IBM WebSphere Information Server

Delivering information you can trust

WebSphere Information Server

Unified SOA Deployment

Understand



Discover, model, and govern information structure and content

Cleanse



Standardize, merge, and correct information

Transform



Transform and deliver information in line and in context

Federate



Virtualize access to disparate information

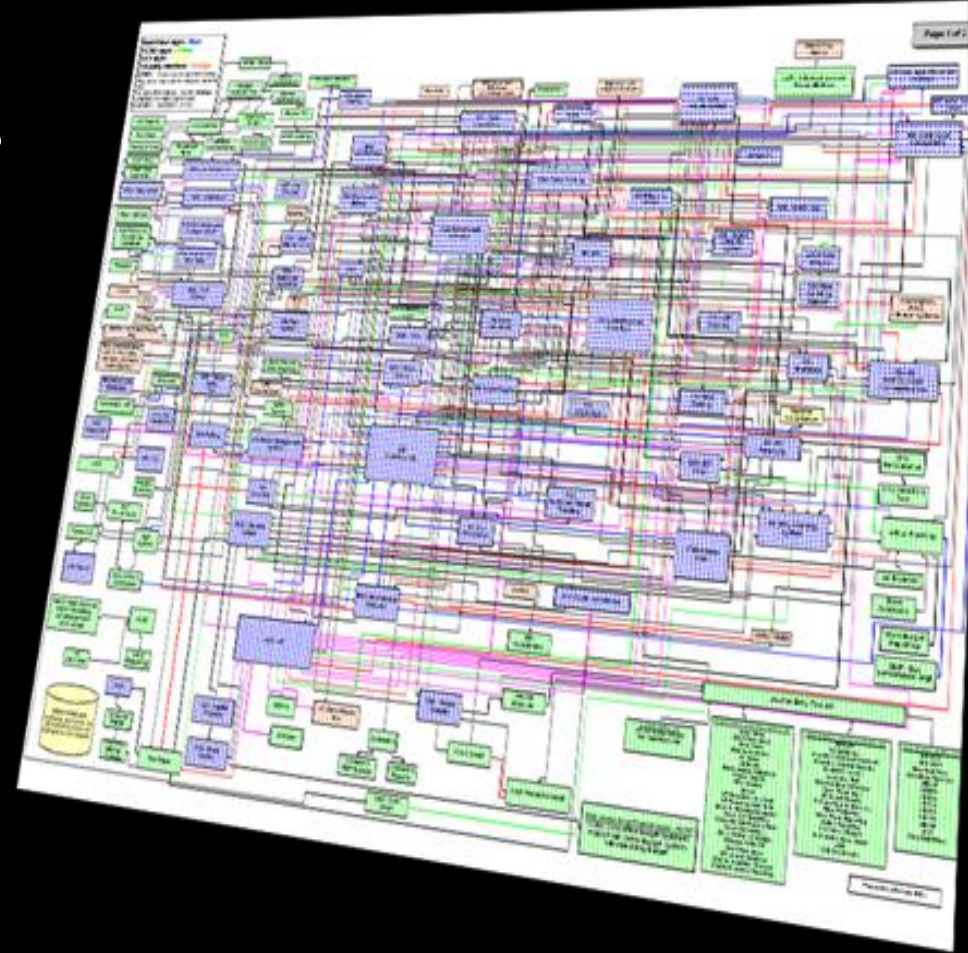
Unified Metadata Management

Parallel Processing

Rich Connectivity to Applications, Data, and Content

Why Is it Important to Start with Understanding?

- Where is my information?
- How do I get it when I need it?
- What does it mean?
- Can I trust it?
- How do I get it in the form I need?
- How do I get it where it needs to go?
- How do I control it?



Physical Metadata: Data Source Profiling & Analysis

- Data-centric analysis of sources
- Secure, detailed profiling of columns, across columns, and across tables
- Creation of metadata from profiling results
- Results instantly promotable across the Information Server
- ETL data flow generation capabilities



Subject Matter Experts

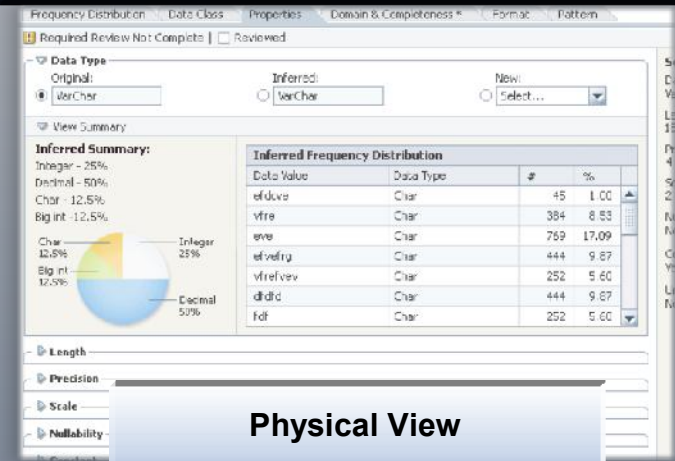


Data Analysts

Understand



Analyze source data structures, and monitor adherence to integration and quality rules



Physical View

Business Metadata: Shared Business Glossary

- Web-based authoring, managing & sharing of business metadata
- Aligns the efforts of IT with the goals of the business
- Provides business context to information technology assets
- Establishes responsibility and accountability



Subject Matter Experts

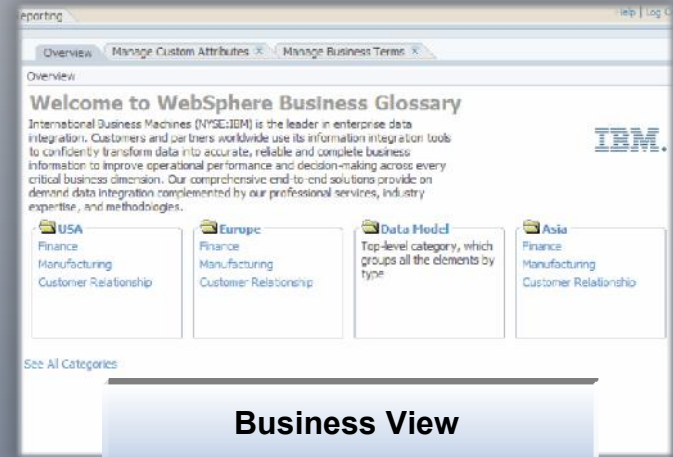


Business Users

Understand



Create and manage business vocabulary and relationships, while linking to physical sources

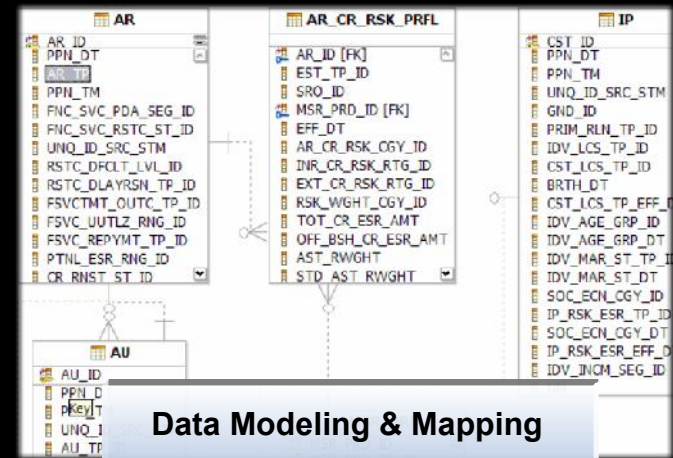


Logical Metadata: Data Modeling and Mapping

- Data modeling for data structures and federations
- Federated data discovery
- Metadata relationship discovery & mapping
- Impact analysis, and synchronization across models
- SQL & XML generation capabilities



Create and manage business vocabulary and relationships, while linking to physical sources



Integrated Metadata Enables Shared Understanding



Development

Data Modeling

Data Stewardship

Source System Analysis

Database application and transformation development

Metadata and data-driven data modeling and management

Business definition & ontology mapped to physical data

Data-driven analysis, reporting, monitoring, data rule & integration specification



Metadata Server

- Simplify integration**
- Facilitate change management & reuse**
- Increase compliance to standards**
- Increase trust and confidence in information**

Why Should I Care About Cleansing Information?

- Lack of information standards**

- Different formats & structures across different systems

Kate A. Roberts 416 Columbus Ave #2, Boston, Mass 02116

Catherine Roberts Four sixteen Columbus APT2, Boston, MA 02116

Mrs. K. Roberts 416 Columbus Suite #2, Suffolk County 02116

- Data surprises in individual fields**

- Data misplaced in the database

Name	Tax ID	Telephone
J Smith DBA Lime Cons.	228-02-1975	6173380300
Williams & Co. C/O Bill	025-37-1888	415-392-2000
1st Natl Provident	34-2671434	3380321
HP 15 State St.	508-466-1200	Orlando

- Information buried in free-form fields**

WING ASSY DRILL 4 HOLE USE 5J868A HEXBOLT 1/4 INCH
 WING ASSEMBY, USE 5J868-A HEX BOLT .25" - DRILL FOUR HOLES
 USE 4 5J868A BOLTS (HEX .25) - DRILL HOLES FOR EA ON WING ASSEM
 RUDER, TAP 6 WHOLES, SECURE W/KL2301 RIVETS (10 CM)

- Data myopia**

- Lack of consistent identifiers inhibit a single view

19-84-103 RS232 Cable 6' M-F Cands

CS-89641 6 ft. Cable Male-F, RS232 #87951

C&SUCH6 Male/Female 25 PIN 6 Foot Cable

- The redundancy nightmare**

- Repetitive data in a single source

90328574	IBM	187 N.Pk. Str. Salem NH 01456
90328575	I.B.M. Inc.	187 N.Pk. St. Salem NH 01456
90238495	Int. Bus. Machines	187 No. Park St Salem NH 04156
90233479	International Bus. M.	187 Park Ave Salem NH 04156
90233489	Inter-Nation Consults	15 Main Street Andover MA 02341
90345672	I.B. Manufacturing	Park Blvd. Bostno MA 04106

Data Cleansing: Cross-Source Standardization & Matching

- Specialized data quality functions seamlessly integrated with DataStage
- Visual tools for defining complex matching and survivorship logic
- Ensures clean, standardized, de-duplicated information
- Enables a single version of the truth



Subject Matter Experts

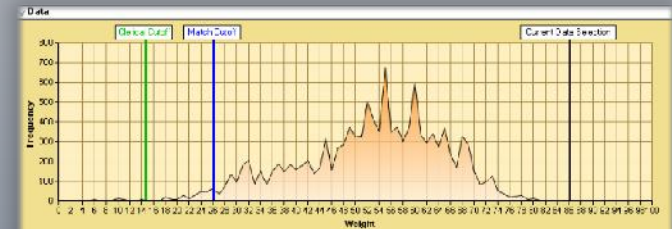


Data Analysts

Cleanse



Standardize and correct source data fields, and match records together across sources to create a single view

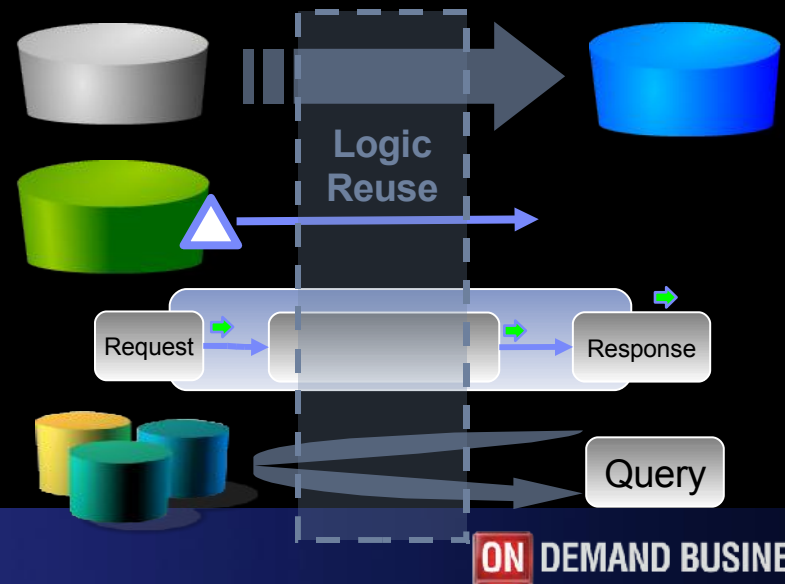
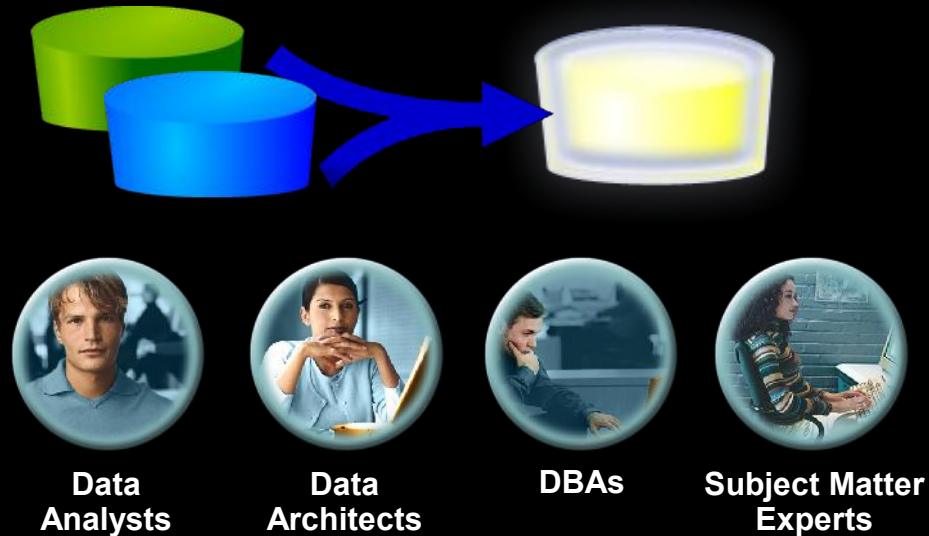


SetID	RecordType	FansNumber	Weight	GenreCode	FirstName	MiddleName
4111	SA	1	85.02	4	OTIS	SARLAND
4111	DA	1	85.52	4	OTIS	SARLAND
5111	SA	1	84.66	4	NICHOLAS	T
5111	DA	1	84.08	4	NICHOLAS	T
3420	SA	1	81.68	4	CLAUDE	LACROIX
3420	DA	1	81.68	4	CLAUDE	LACROIX
4421	SA	1	81.63	4	CLAUDE	LACROIX
4421	DA	1	81.63	4	CLAUDE	LACROIX
4626	SA		80.23	4	CLIFF	H
4626	DA		80.23	4	CLIFF	H
7229						CHIN
7320						CHIN
2282						GILLIS
2282						GILLIS
2282						GILLIS
2574						NEHRFELP
2574						NEHRFELP

Visual Match Rule Design

What Is Important About Transformation & Delivery?

- Transformation is key to enabling information to be used in new business contexts
- Designed for use by information experts using the understanding imparted by the metadata
- Transformation and Delivery can be reused across multiple mechanisms
 - Large volume batch movement
 - Real-time event-driven response
 - Service-oriented architecture
 - Federated query



Data Transformation & Movement

- Codeless visual design of data flows with hundreds of built-in transformation functions
- Optimized reuse of data integration objects
- Leverages parallel processing without requiring design changes
- Capable of supporting batch and real-time operations



Developers

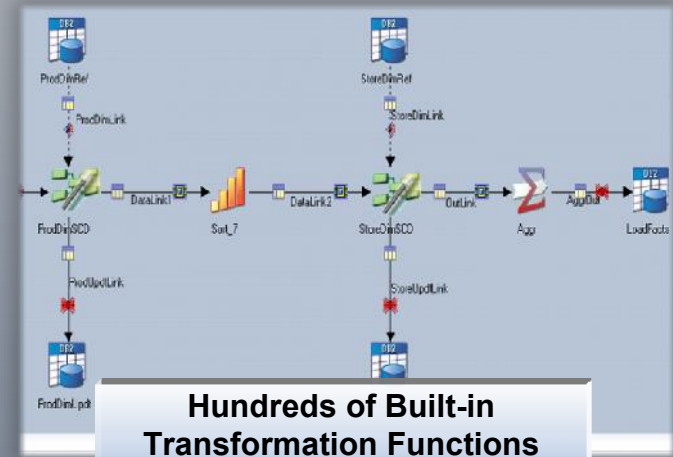


Architects

Transform



Transform and aggregate any volume of information in batch or real time through visually designed logic



Data Federation: WebSphere Federation Server

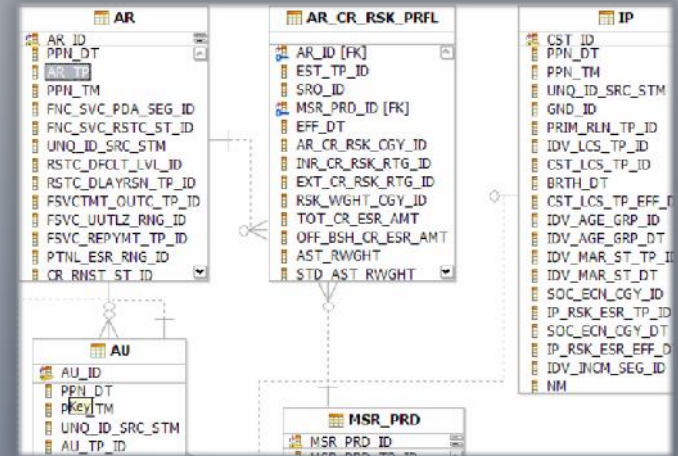
- **Access diverse & distributed information as if it were in one system**
- With single sign-on, unified views, function compensation, query and update
- **Industry leading query optimization**
- **Visual tools for federated data discovery & data modeling**

Federate



Access and integrate heterogeneous information across multiple sources as if they were a single source

Extend value of existing analytical applications by providing real-time access to integrated information



Federated Queries Make Integration as Easy as SQL

```

SELECT  parameters_return_billto_key as BILL_TO_KEY

        parameters_return_shipto_key as SHIP_TO_KEY
        CASES_SHIPPED
        GROSS_SALES
        URL

FROM    GETKEYSSOAP_GETKEYSREALTIME_NN

        GLOBAL_SALES_TRAN_NN

        BILLTO_DIMENSION,

        URL_INVOICES

WHERE   getkeysrealtime_ship_to_number
        getkeysrealtime_ship_to_number    URL_INVOICES.shipno
        ltrim(rtrim(translate(ship_to_number, ' ', x'0a')))
        getkeysrealtime_ship_to_number
        parameters_return_billto_key
        ltrim(rtrim(translate(sales_order_number, ' ', x'0a')))
        URL_INVOICES.orderno;

```

Single SQL Query Joins:

- ← Web Service
- ← XML Documents
- ← Data Warehouse
- ← Unstructured Data

Rapid SOA Deployment

- Packages information integration logic as services that insulate developers from underlying sources
- Allows these services to be invoked as EJB, JMS, or Web services
- Provides load balancing & fault tolerance for requests across multiple Information Servers
- Provides foundation infrastructure for Information Services



Developers



Architects

Flexibly deploy and manage reusable information services without hand coding

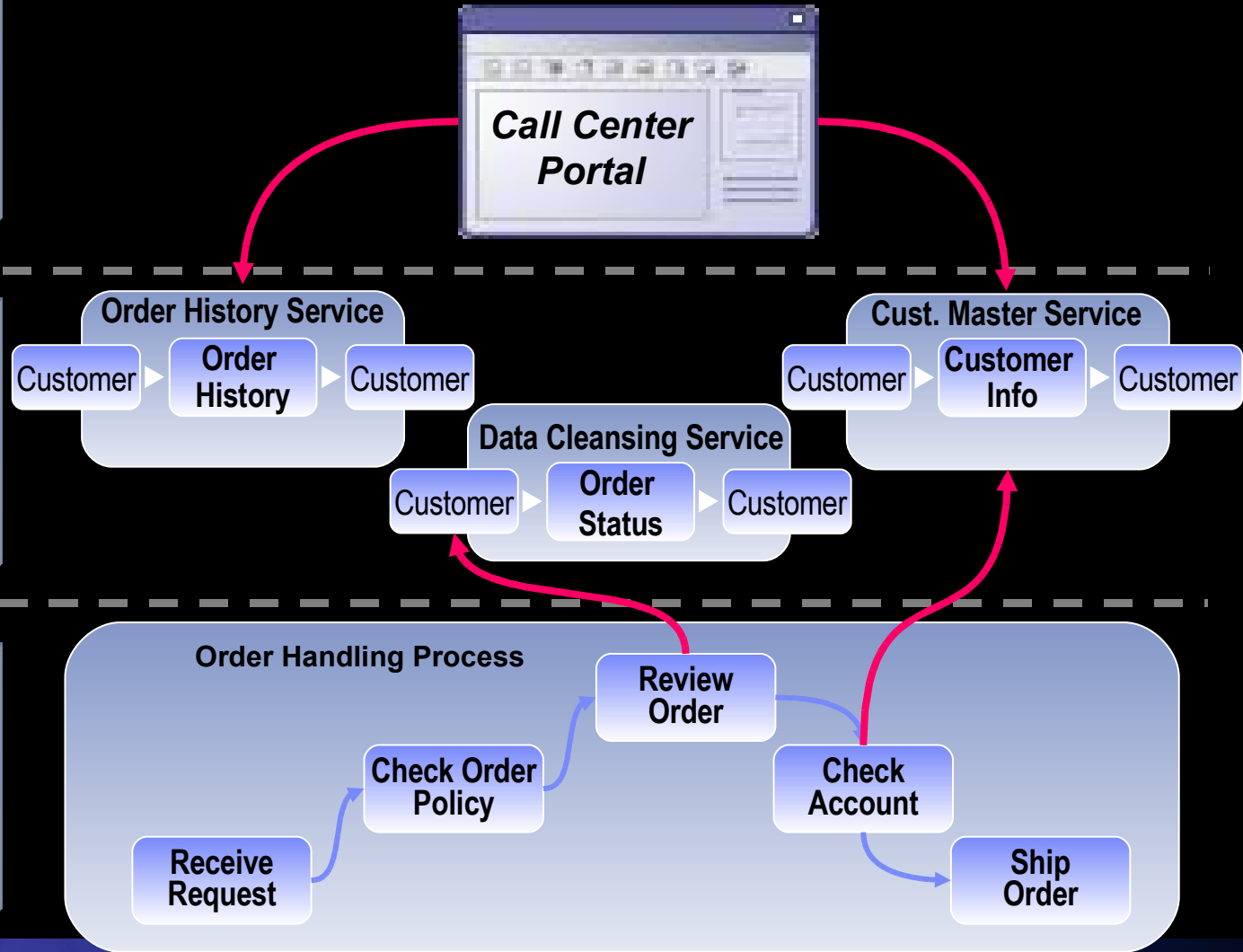


Actionable Information Services

People

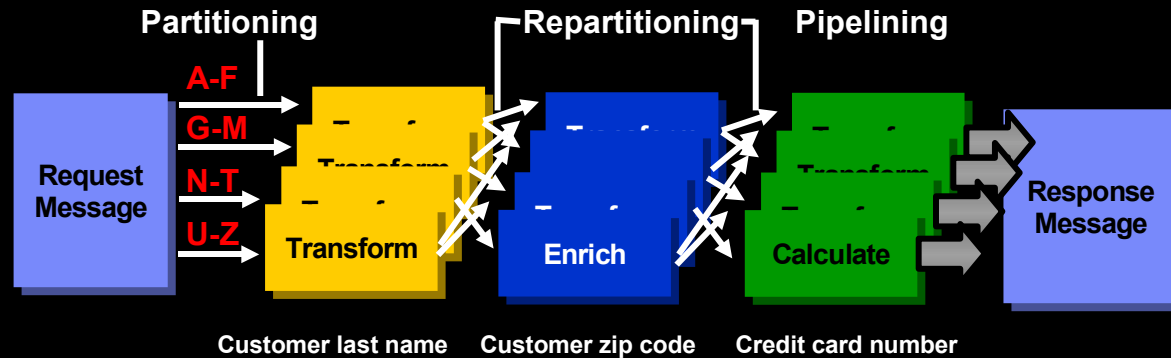
Information

Process

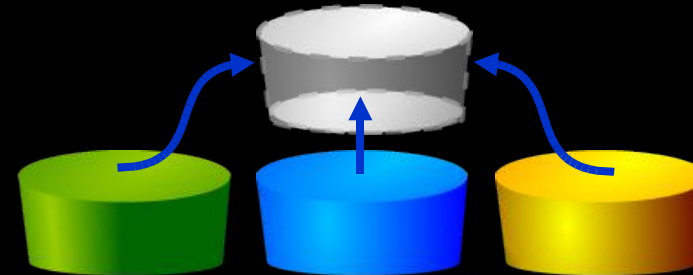


How Do Information Services Optimize My Information Access & Processing?

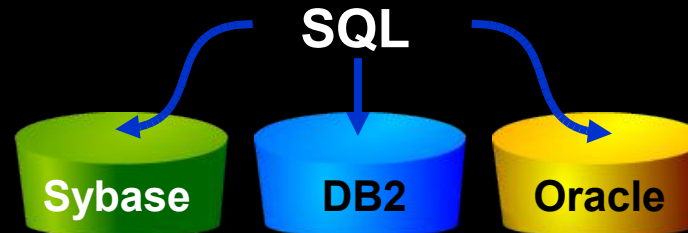
- Parallel Processing



- Caching



- Query optimization



IBM WebSphere Information Server

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Unified SOA Deployment

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Virtualize access to disparate information

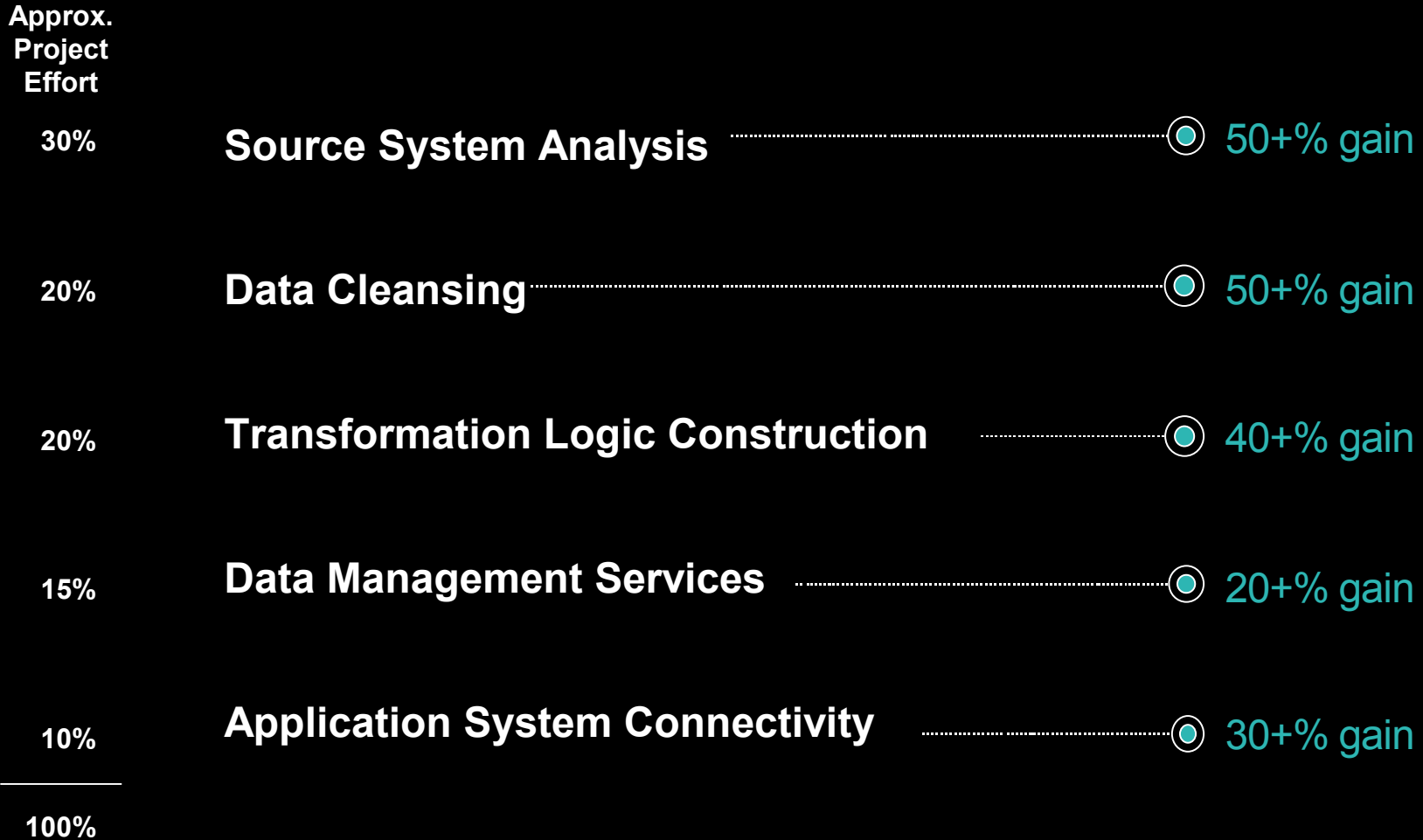
Unified Metadata Management

Parallel Processing

Rich Connectivity to Applications, Data, and Content

Customers Achieve Significant Productivity Benefits¹

Example ETL Project



¹ Compared to hand coding – gathered from IBM project studies

Information Integration Services

Providing a Roadmap to Project Success



- Center of Excellence for Data Integration
- Iterations® Methodology
- Architecture Design/Support
- Education and Mentoring
- Enterprise Data Models
- Virtual Consulting
- Certification

Service-Oriented Data Warehousing Case Study – Harley-Davidson



▶ **Challenge:** Improve flow of analytical information on inventory and local markets from corporate headquarters to dealer systems.

No reconciliation of external market and parts data with current dealer order forecasts and shipments data.

▶ **Solution:** WebSphere Information Server providing services around information in the enterprise data warehouse directly into dealer systems through open services.

▶ **Result:** Provides better access to up-to-the-minute information to dealers, reducing unnecessary reorders.

Enables closed-loop operational decision-making to improve inventory management, in-store sales, and customer satisfaction.

The Information Server Advantage

Virtualizing the Information Infrastructure

- **Comprehensive information integration infrastructure in a single product**
- **Open, heterogeneous approach**
- **Scalable, reliable, and high performance foundation**
- **Ongoing investment in innovation**
- **Proven solutions for critical business initiatives**
- **Domain expertise in all industries**

Information On Demand 2006

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Why attend:



IBM Information On Demand 2006 October 15-20, 2006 Anaheim, California

- The premier information management event
 - Business and IT executives, managers, professionals, DBA's and developers.
- Select from over 800 sessions
- Latest strategy and product announcements
- Large Expo Center, Hands on labs
- One on ones with executives and specialists
- Birds of a Feather roundtables

- Participate in the PREMIER discussion on *the future of Information Management*
- Learn how the transformation to *Information as a Service* will help you unlock business value and drive competitive advantage
- Hear how your peers are realizing *ROI*
- Understand the roadmap to *long term strategic advantage*
- Learn *best practices* in your industry
- Receive the best in *technical education* and free certification
- Extensive opportunities for *networking* with both your *peers and industry experts*

TAKE BACK CONTROL

Thank
YOU