



Turn Your Mainframe into an Information Integration Platform

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TAKE BACK CONTROL

Agenda

- The changing face of Information Integration
- IBM Information Server for System z components
 - Understand
 - Cleanse
 - Transform
 - Deliver
- Architecture and System z
- Wrap-up and Additional Q&A



The Information Challenge

Business Challenges

Globalization
M&As
Supply Chain
Risk & Compliance
Customer Loyalty
Operational Costs
Business Velocity
...

**INFORMATION
IS A
STRATEGIC
ASSET**

Information Challenges

Accuracy
Timeliness
Relevance
Accessibility
Version control
Volume and Variety
Information Silos
...

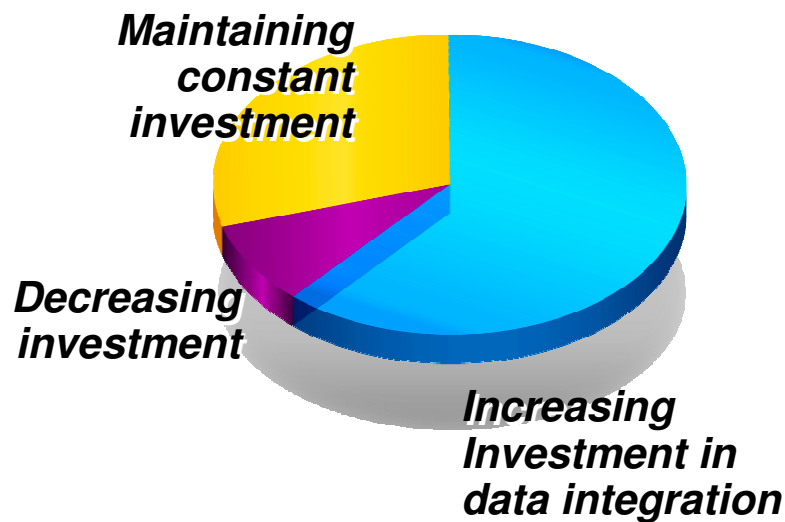
**5X more value creation by
60%+ of CEOs: Need to do
organizations using
a better job leveraging
information effectively**

**People can spend up to 70%
of their time looking for
information**



Spending and IT Investment are Following

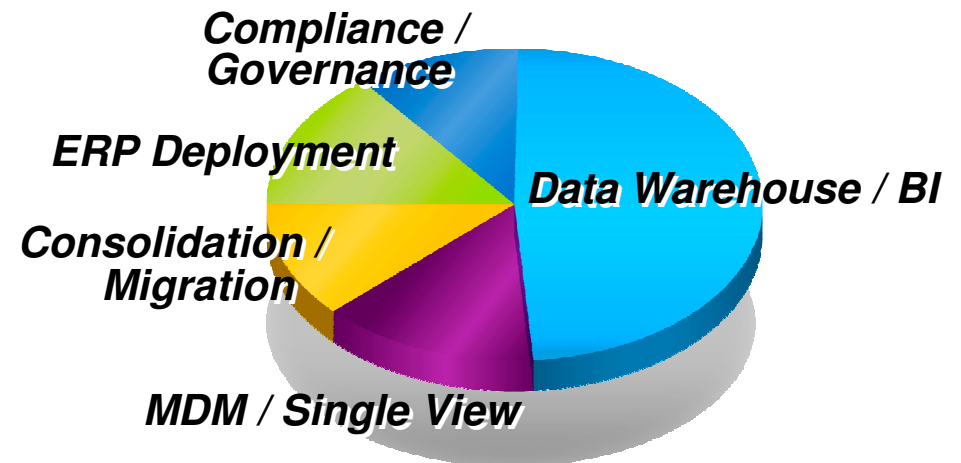
Investments in data integration are increasing



Source: Gartner 2006

"Gartner Study on Data Integration Identifies Key Usage Trends"

Driven by strategic initiatives



Source: IBM 2006

IBM Survey of 1,600 CIOs

**BI applications are the #1 technology priority
Business process improvement is the #1 concern**



Information Issues and Business Challenges



■ **Too much information, not knowing what's important**

- Not using demand signals to drive supply chain
- Not using customer analysis to tailor marketing and sales
- Not leveraging valuable unstructured information



■ **Multiple versions of the truth**

- Problems managing customer, product and partner interactions
- Regulatory compliance inhibited by poor transparency



■ **Lack of trusted information**

- Incomplete, out-of-date, inaccurate, misinterpreted data
- Difficult to understand or control how information is used



■ **Lack of agility**

- Inability to take advantage of opportunities for innovation
- Escalating costs due to inflexible systems and changing needs



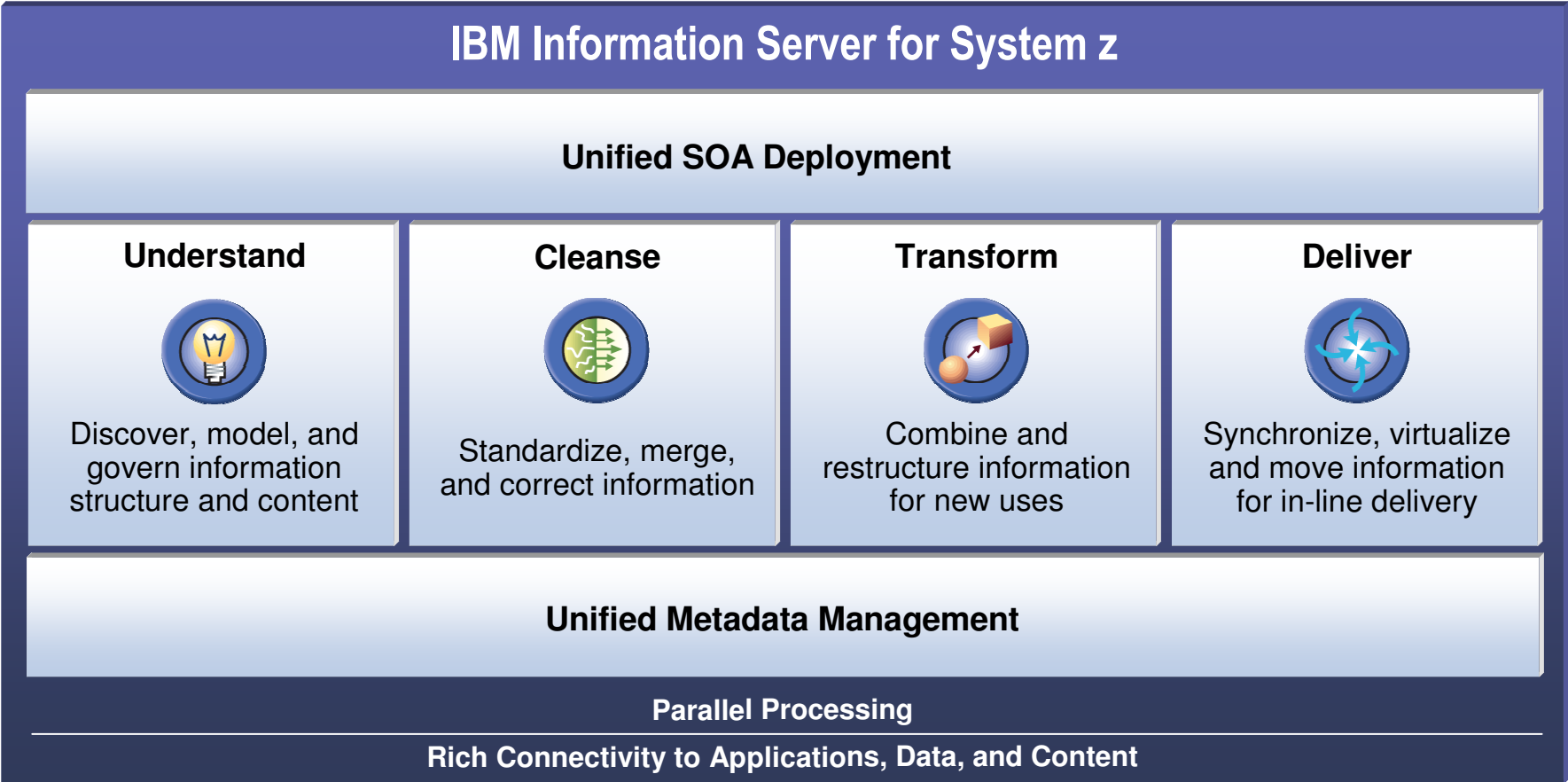
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IBM Information Server for System z

Delivering information you can trust



IBM Information Server for System z

Delivering information you can trust

Understand your data and the terms that describe it to ensure consistency, trust and effective communication between the business user and the technology user

Understand



WebSphere. Information Analyzer for Linux on System z

WebSphere. Business Glossary for Linux on System z

Rational. Data Architect

Cleanse



Standardize, merge, and correct information

Transform



Combine and restructure information for new uses

Deliver



Synchronize, virtualize and move information for in-line delivery

Unified Metadata Management

Parallel Processing

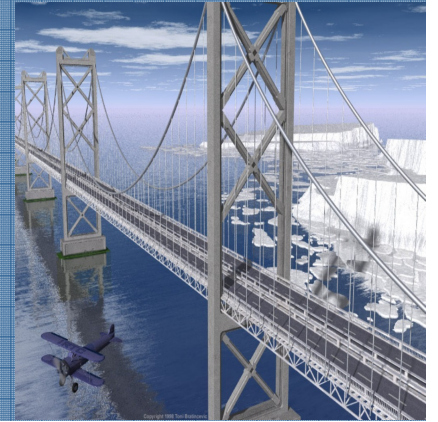
Rich Connectivity to Applications, Data, and Content



The Value of "Understand"

The Value

- Improve time to value of data integration projects
- Eliminate the risk of proliferating bad data
- Ensure data projects contain trusted information
- Ensure data projects “always” contain trusted information



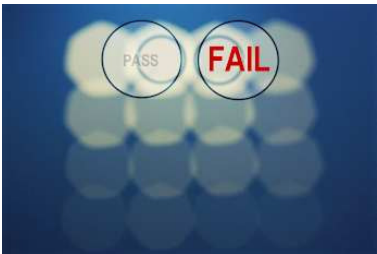
Benefits

- Gain insight into your data sources
- Reduce the time to profile data by 70%
- Improve personnel productivity
- Maintain data quality consistency throughout lifecycle



Profiling Reduces Risks and Costs of Dirty Data

83% of data integration projects either overrun or fail



Scrap and rework
Increased costs

Lack of consumer confidence

Lost opportunities

Low data quality costs companies \$611 billion annually

Inaccurate or incomplete data is a leading cause of failure in business-intelligence and CRM projects



25% of time is spent clarifying bad data

Undetected defects will cost 10 to 100 times as much to fix upstream



ROI Stories



CIO, Sara Braziller
said thanks to
accurate profiling:

- \$1 million annual savings
- Successful on-time, under-budget delivery of customer data warehouse



Thanks to accurate
profiling:

- \$50K savings in average cost to deploy a new data mart
- Reduced development rework by 50%



Thanks to Information
Analyzer:

- Save hundreds of hours of development time for each project
- Improved speed and accuracy of new data integration projects, which is vital to their core business



The Role of Business Vocabulary & Relationships

Features

- Facilitate business & IT communications by creating & managing a common business vocabulary
- Web based interface shared across enterprise business teams
- Allows creation of stewards & assignment of their responsibilities for terms & assets.
- Link business terms / concepts to Electronically Stored Information (technical assets)

Benefits

- **Aligns the efforts of IT with the goals of the business**
- **Provides business context** to information technology assets
- **Establishes responsibility and accountability** in accordance with data governance policies



Subject Matter Experts



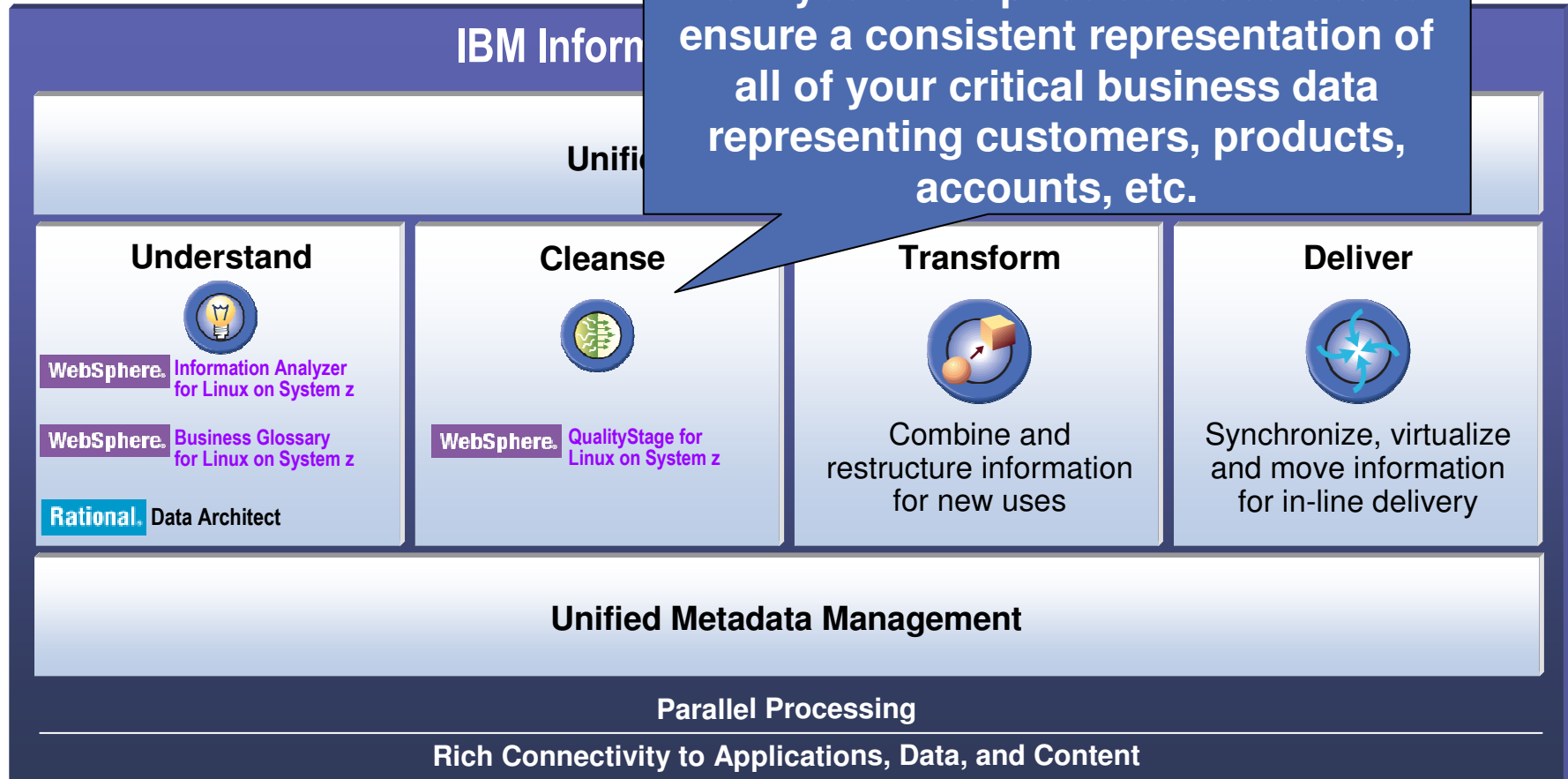
Analyst



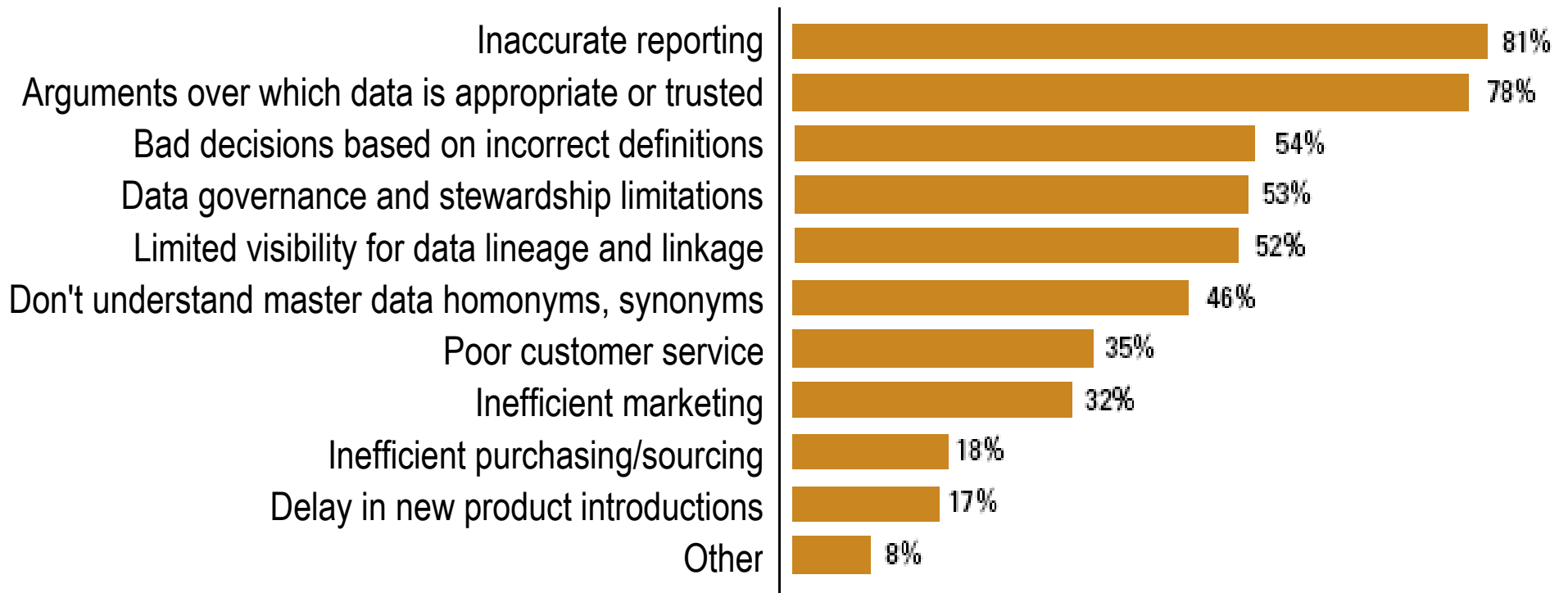
IBM Information Server for System z

Delivering information you can trust

Match, merge and cleanse information from your enterprise data sources to ensure a consistent representation of all of your critical business data representing customers, products, accounts, etc.



How Organizations Suffer from Poor Data Quality



TDWI, October 2006



Data Quality is a never-ending challenge

- Poor quality input data
 - No controls for preventing online entry of duplicates or invalid address information
 - Data coming from external sources is not cleansed
- Many, many duplicates
 - Created by processes
 - Input by end users
- The situation only gets worse over time
 - Data quality degrades at a rate of 2% per month (Gartner study)
 - Increased volumes
 - Mergers & acquisitions, list imports, upgrades, instance consolidations, and more



5 Common Data Quality Related Challenges

1. Lack of information standards
Formats & Structures
2. Data surprises in individual fields
Business in personal field, email in phone field
3. Data myopia
Multiple identifiers inhibit a single view
4. The anomalies nightmare
Complex matching
5. Information buried in free-form fields



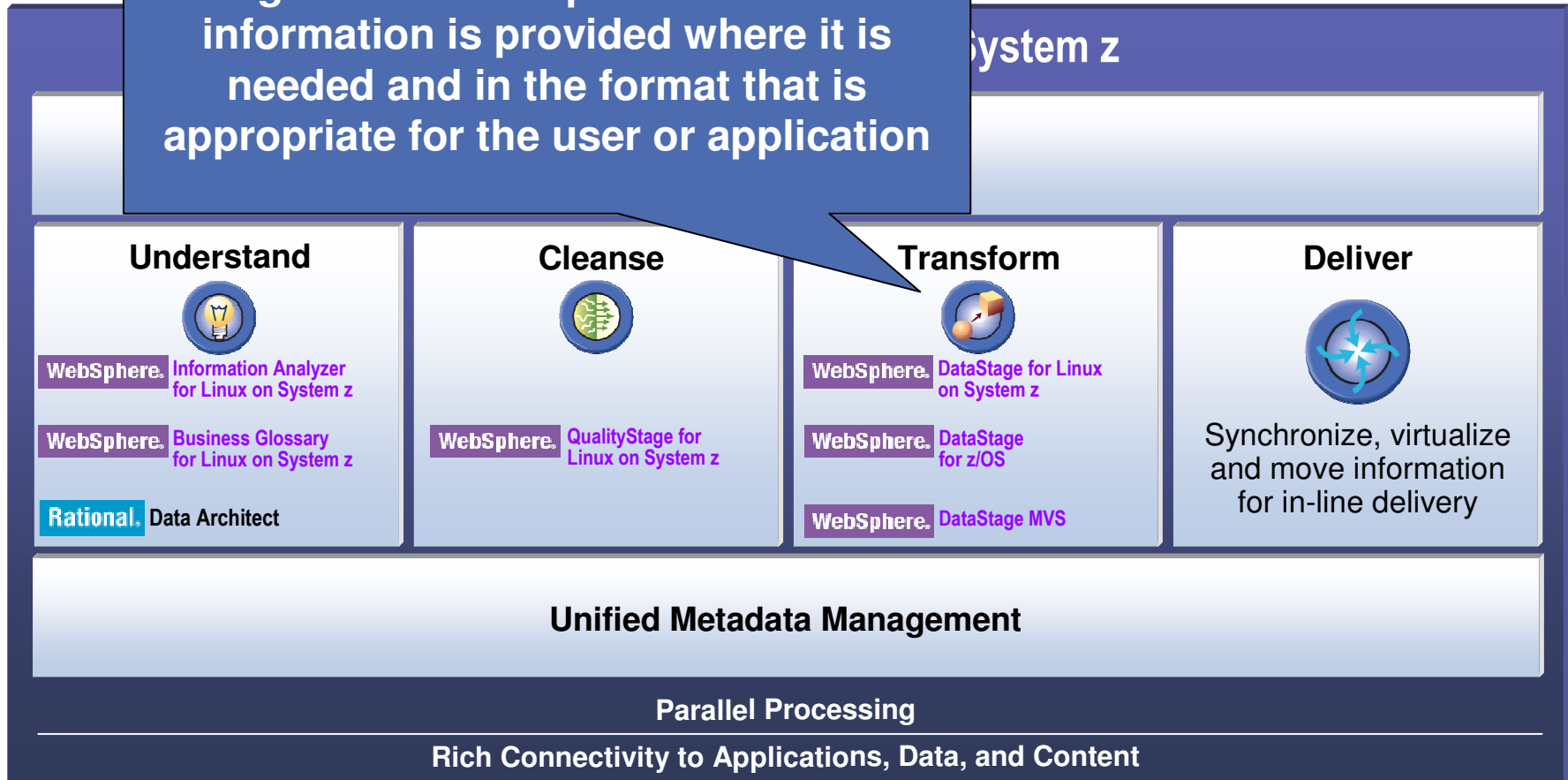
Build an accurate, consolidated view of your business



IBM Information Server for System z

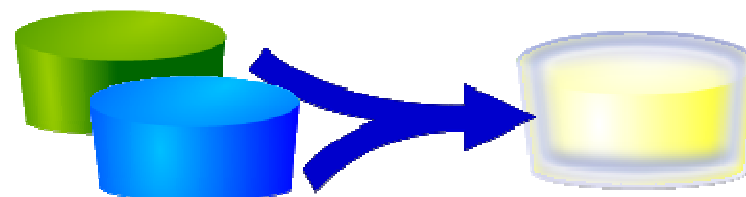
Delivering information you can trust

Repackage and repurpose information throughout the enterprise to ensure the information is provided where it is needed and in the format that is appropriate for the user or application

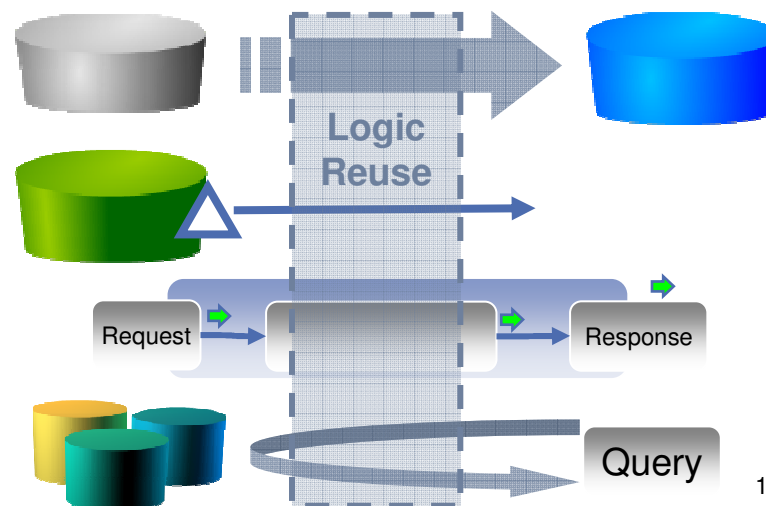


Transformation & Delivery Ensure Data is:

- where you need it
- when you need it
- the way you need it



- Transformation is key to enabling information to be used in new business contexts – it needs to be metadata-driven
- 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



What Makes WebSphere DataStage Different?

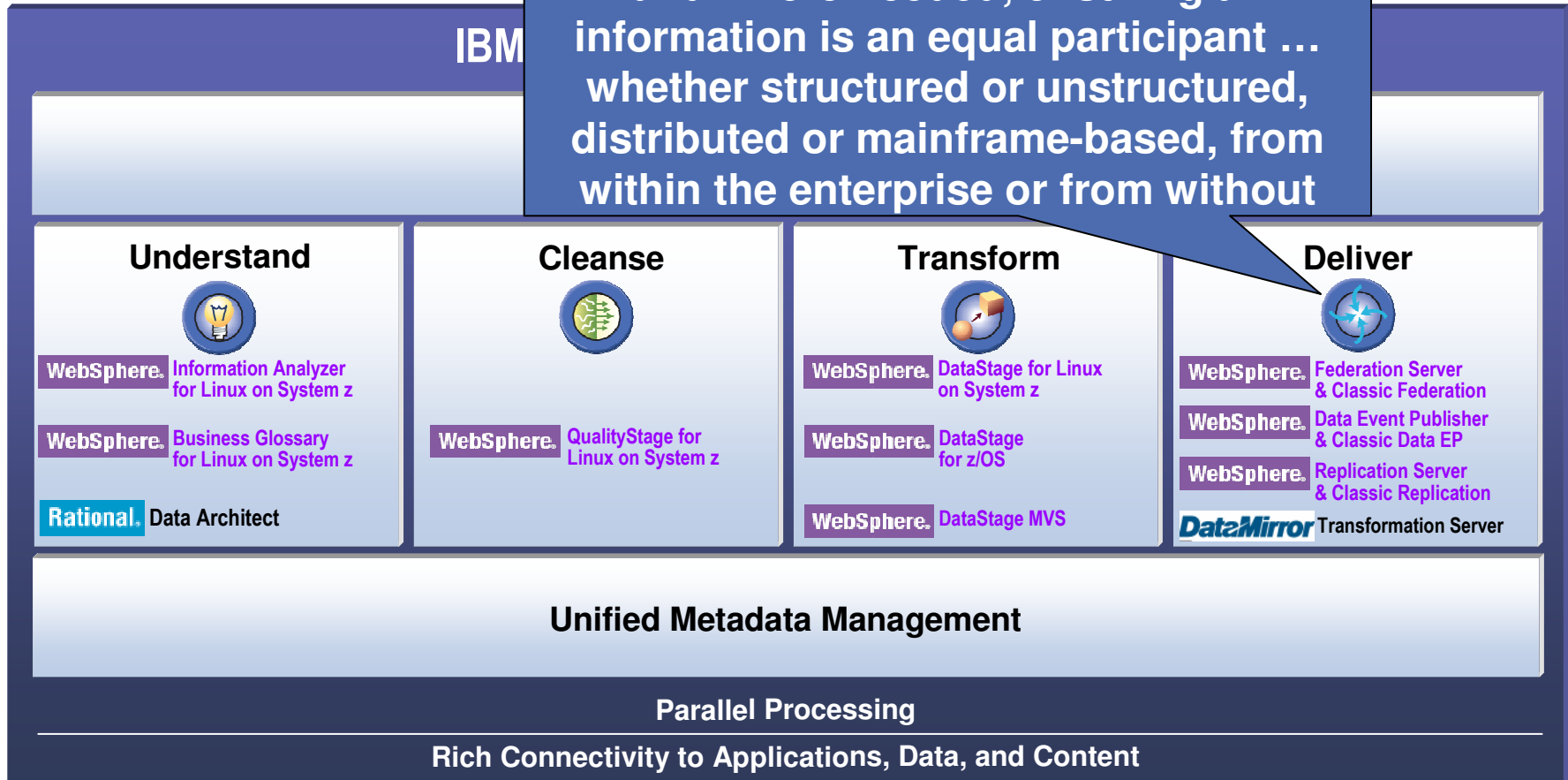
Easy Design of Complex Data Processing	<u>Benefits</u>
Graphical, top-down design metaphor, with extensive library of pre-built functions & graphical sequencing	Faster time to market, Low cost to develop skills, Lower maintenance costs
Extensible, component-based architecture	Lower risk, Better capitalizes on existing investments
Strong reuse capabilities, including shared containers, routines, connection objects, and reusable services	Better consistency, faster time to market, stronger project leverage
Broad and deep connectivity, with bulk connectivity, changed data capture, and dynamic connectivity options	Better utility, better project flexibility, faster time to market
Rapid SOA deployment capability	Better utility, broader applicability
Massive Scalability	
Design serially, deploy in parallel	Able to deal with any data volume without logic changes, Greater utility
Metadata-driven Integration	
Unified metamodel across IBM Information Server	Speeds project delivery, Improves collaboration, Produces better results
Active metadata analysis, including diff, impact, and lineage	Better productivity, reduced risk



IBM Information Server for System z

Delivering information you can trust

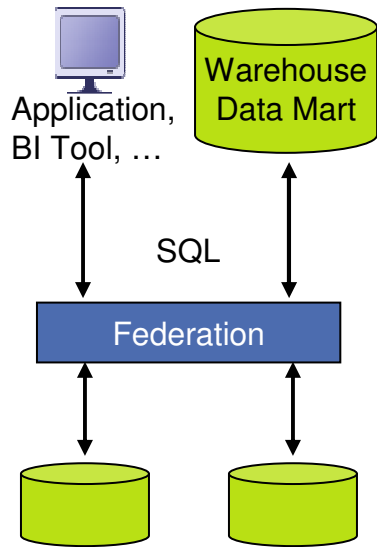
Access and/or deliver information when and where needed, ensuring all information is an equal participant ... whether structured or unstructured, distributed or mainframe-based, from within the enterprise or from without



Data Delivery Patterns

Virtualize (pull)

All data participates equally

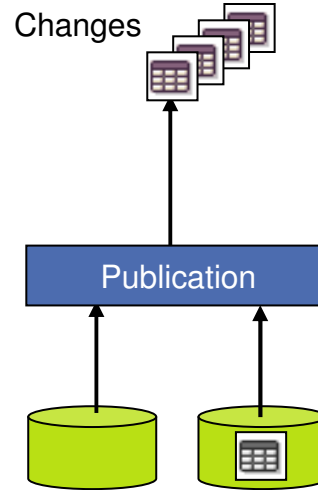


Seamlessly integrate with:

- e-commerce
- Self service
- SOA

Changed-Data Push

Data changes (events) drive action

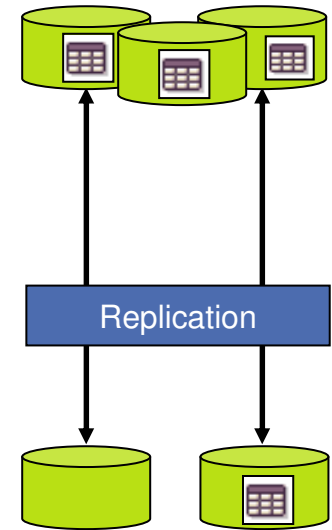


Proactively deliver data to:

- Drive integration
- Enable change only updating to:
 - Reduce batch window dependencies
 - Reduce data latency

Synchronize

Like-to-like copies



Create & synchronize copies for:

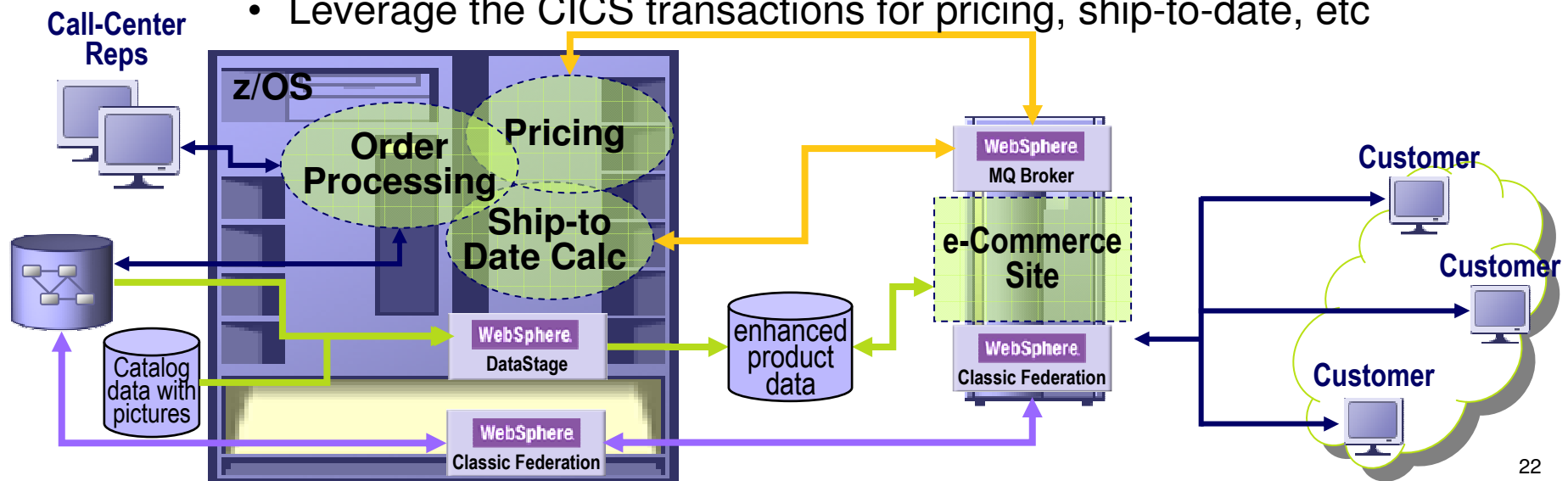
- Distributed operations
- High availability data
- High performance copies
- DBMS migrations



"Best" solution may leverage multiple patterns

ETL, Federation and EAI

- **ETL**: merge operational product data with image content
 - Product information is copied to “local” RDBMS for performance
 - Changes are infrequent and can be scheduled
 - Value-add image data added as part of the data transformation
- **Federation**: critical “real time” data is dynamically accessed
 - There can only be one version of the “truth” for inventory
- **EAI**: critical processes are shared
 - Leverage the CICS transactions for pricing, ship-to-date, etc



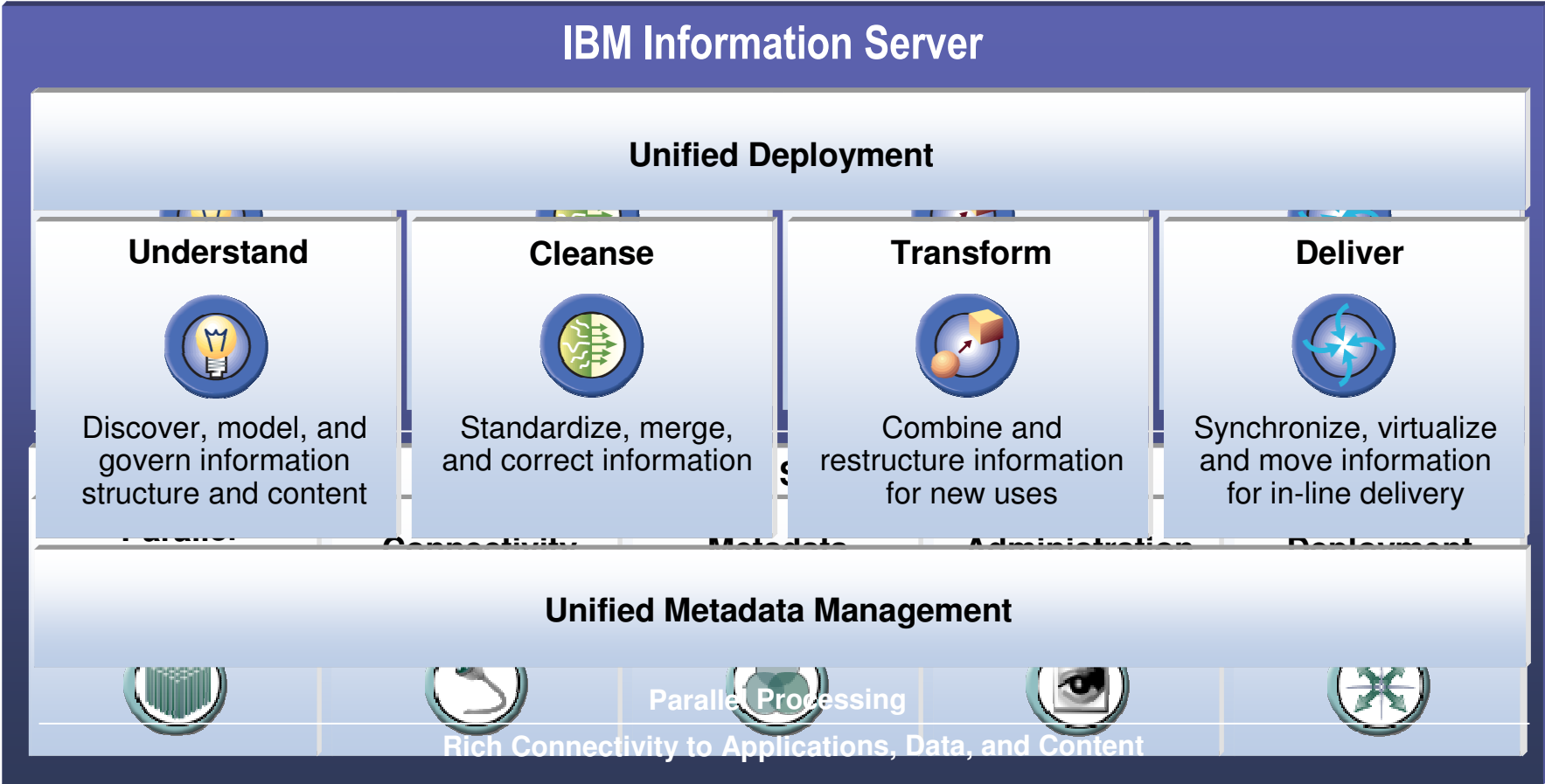
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TAKE BACK CONTROL

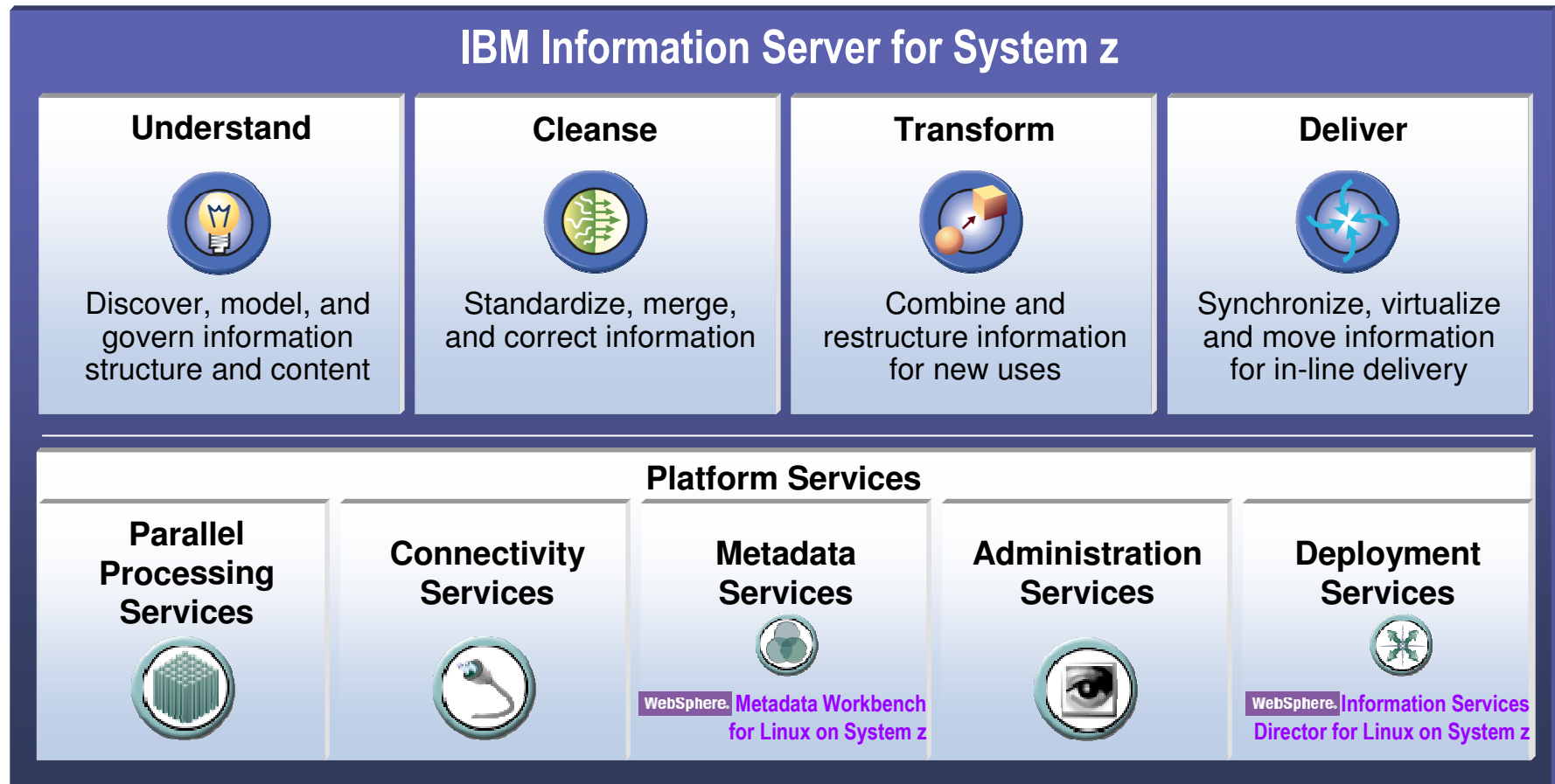
IBM Information Server for System z

The power of a platform ... not just a collection of tools



The IBM Information Server

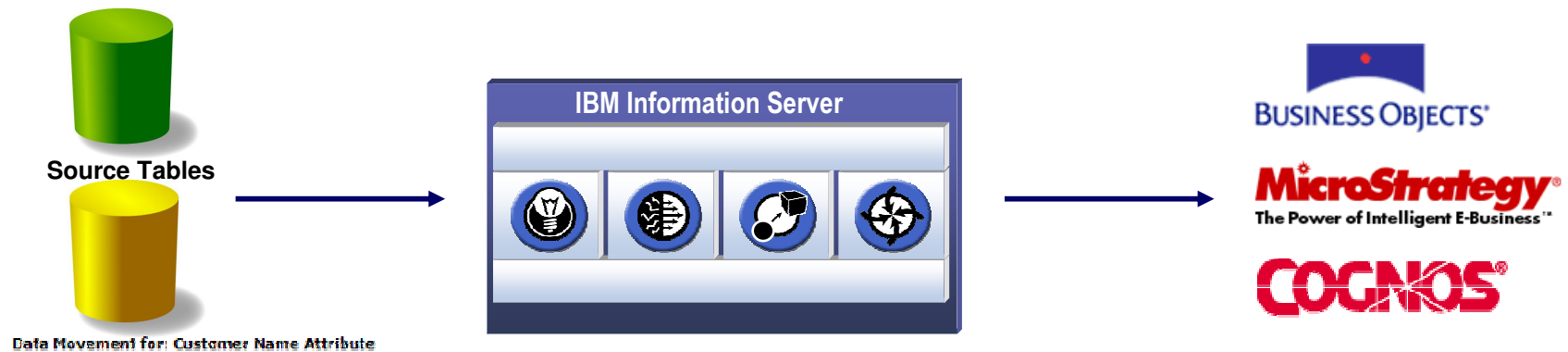
More than a collection of products, a robust platform



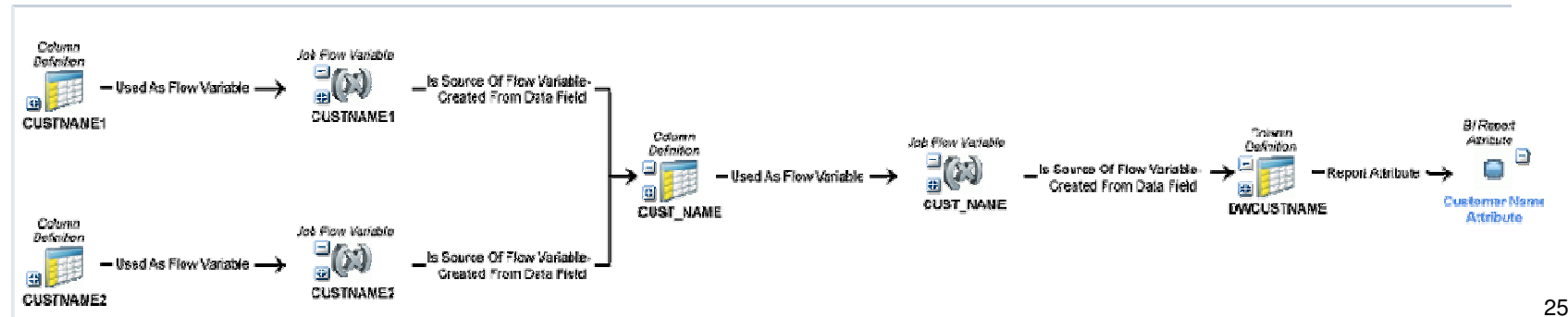
Where does a field of data in this report come from?

- Import & Browse Full BI Report Metadata
- Navigate through report attributes
- Visually navigate through data lineage across tools

Increases trust and understanding of business information



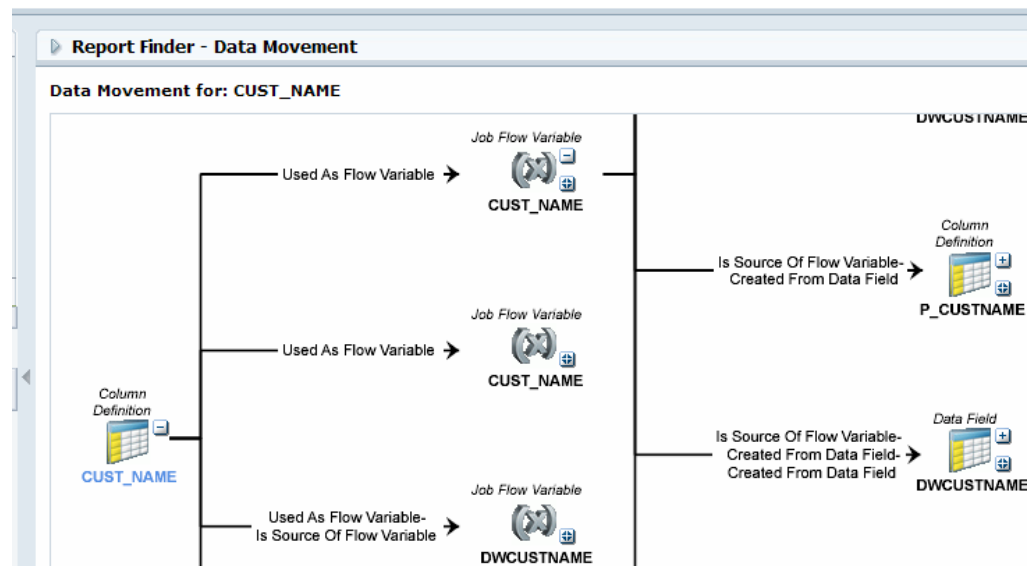
Data Movement for: Customer Name Attribute



What happens if I change this column?

- Show complete change impact in graphical or list form
- Includes impact on reports in BI tools
- Allows impact analysis on any object type

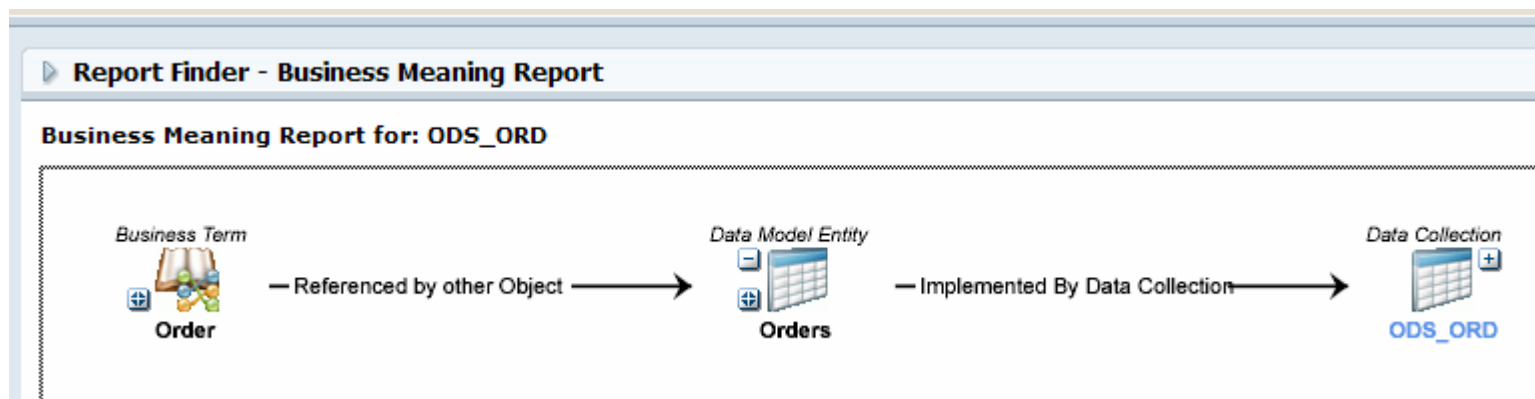
Reduces the cost associated with IT changes



What does this field mean?

- Show relationships between business terms, data model entities, and technical and report fields
- Allows field meaning to be understood
- Allows business term relationships to be understood

Ensures effective data governance for regulatory reporting



Benefits of the Platform Approach

Think Strategically, Implement for Immediate Impact

- IBM Information Server is a **platform**
 - Multiple modules that share a consistent foundation of shared platform services
 - The platform approach increases reusability and creates synergy between and across functional modules
- License any one or combination of the modules
 - Each module inherently includes the platform services
 - Each module addresses a requirement and provides value on its own
- The modules work together seamlessly, increasing project leverage
 - As new modules are added, they “snap-in” to the shared platform services, providing immediately leverage
 - Organizations have a flexible entry point



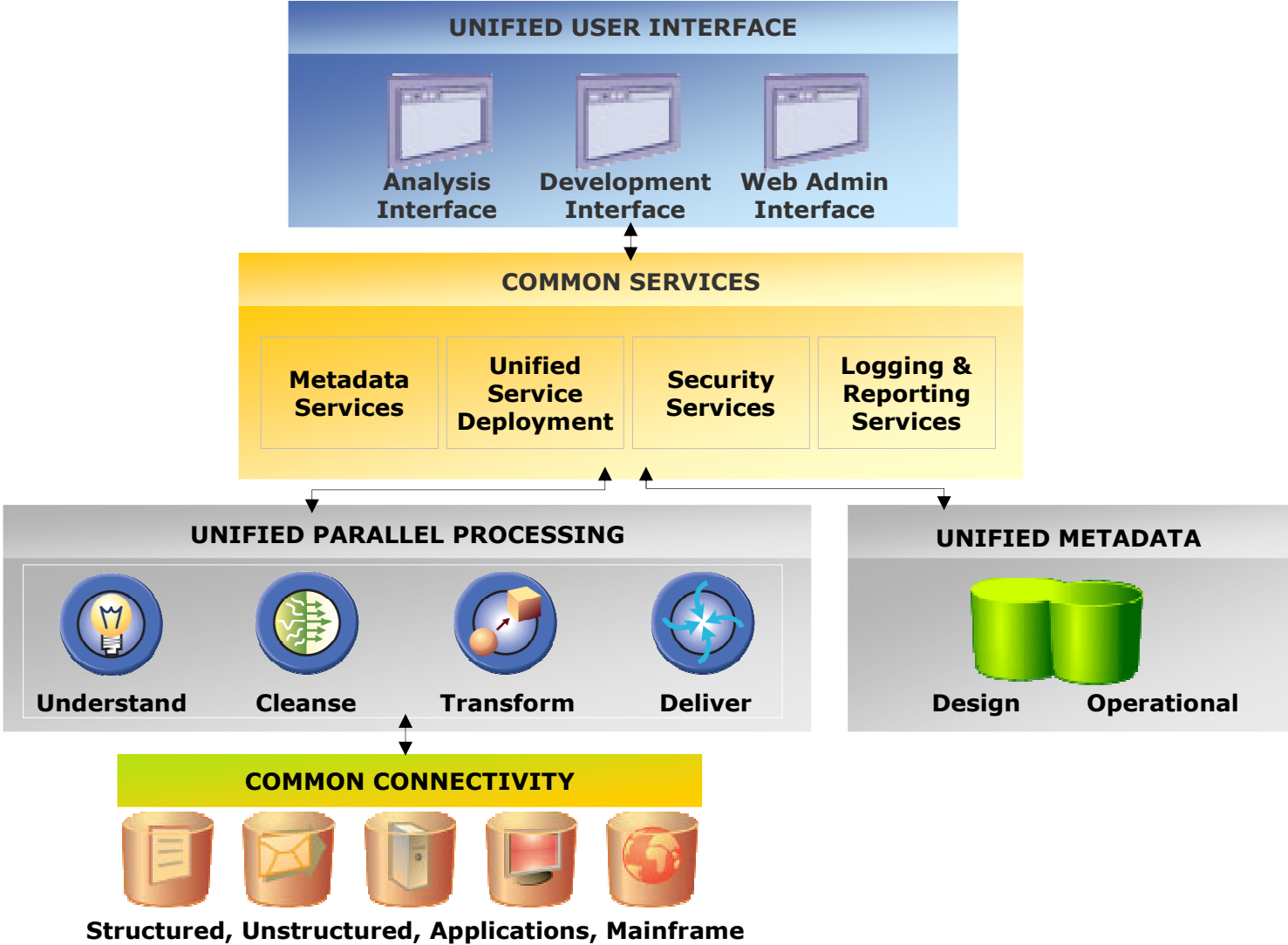
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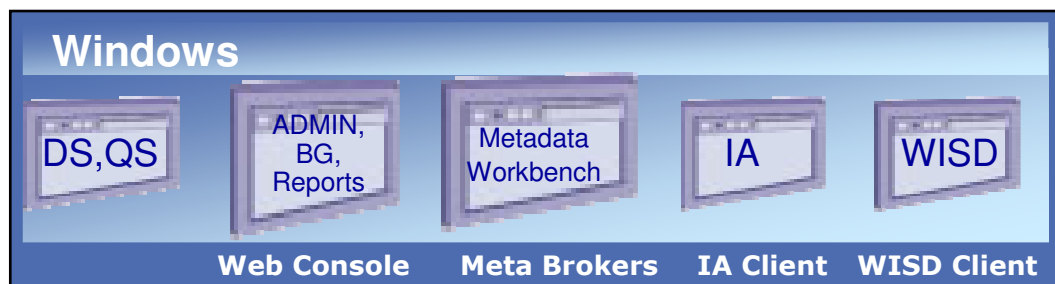
Platform Architecture



Structured, Unstructured, Applications, Mainframe



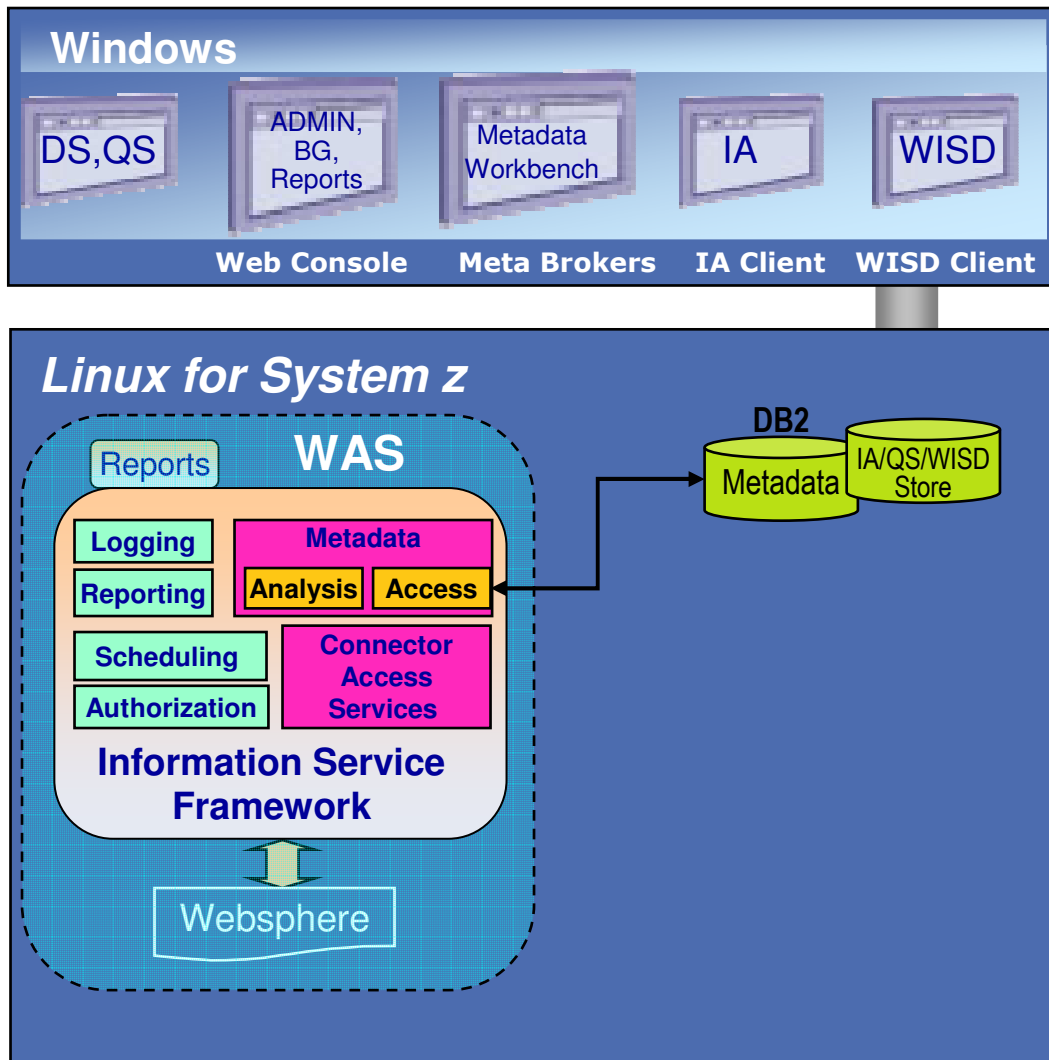
IBM Information Server for System z



Roles-based GUI Design Tools work the way "you" do



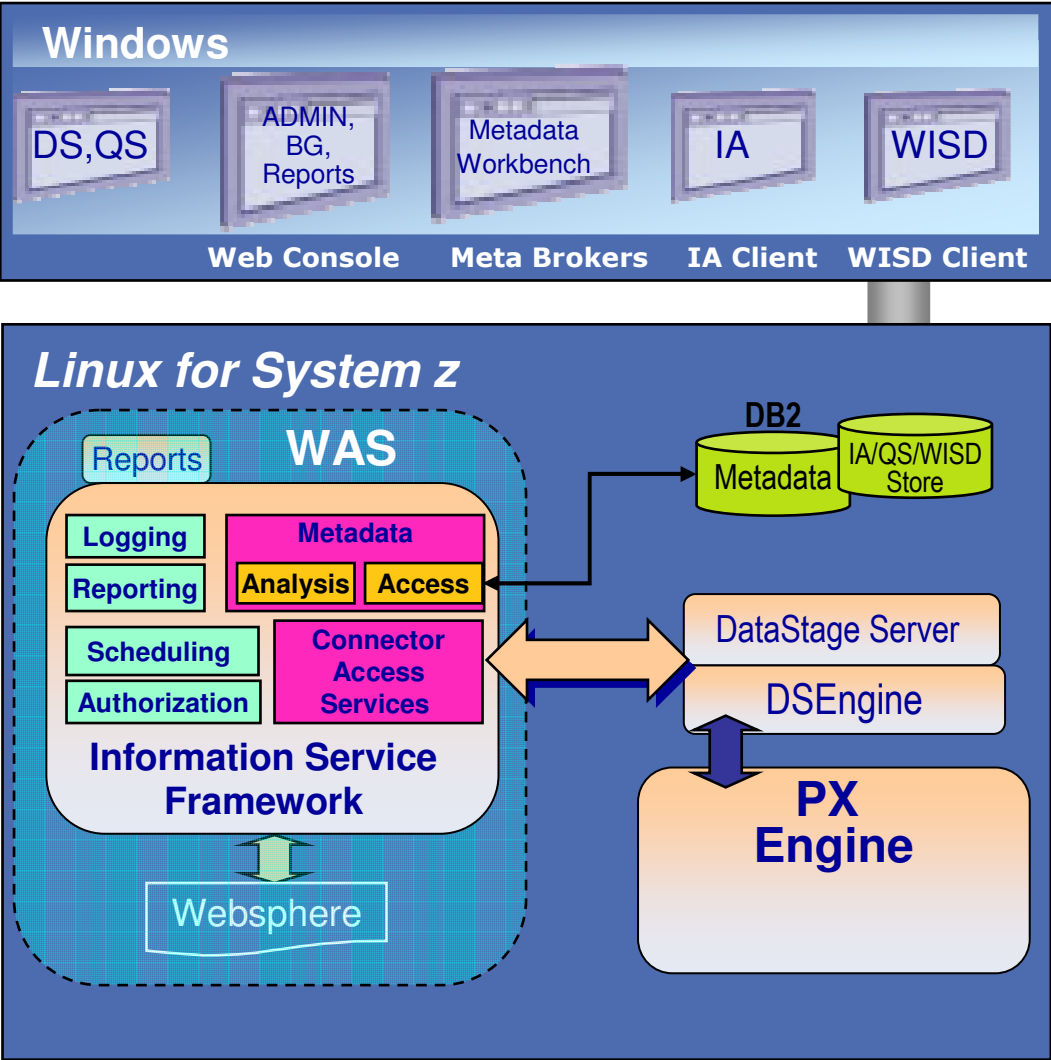
IBM Information Server for System z



- **Common reusable services** framework leverages the power of a SOA environment
- **Meta data repository** promotes:
 - reuse
 - compliance to standards
 - visual lineage
 - impact analysis



IBM Information Server for System z



Linux for z Operational Environment

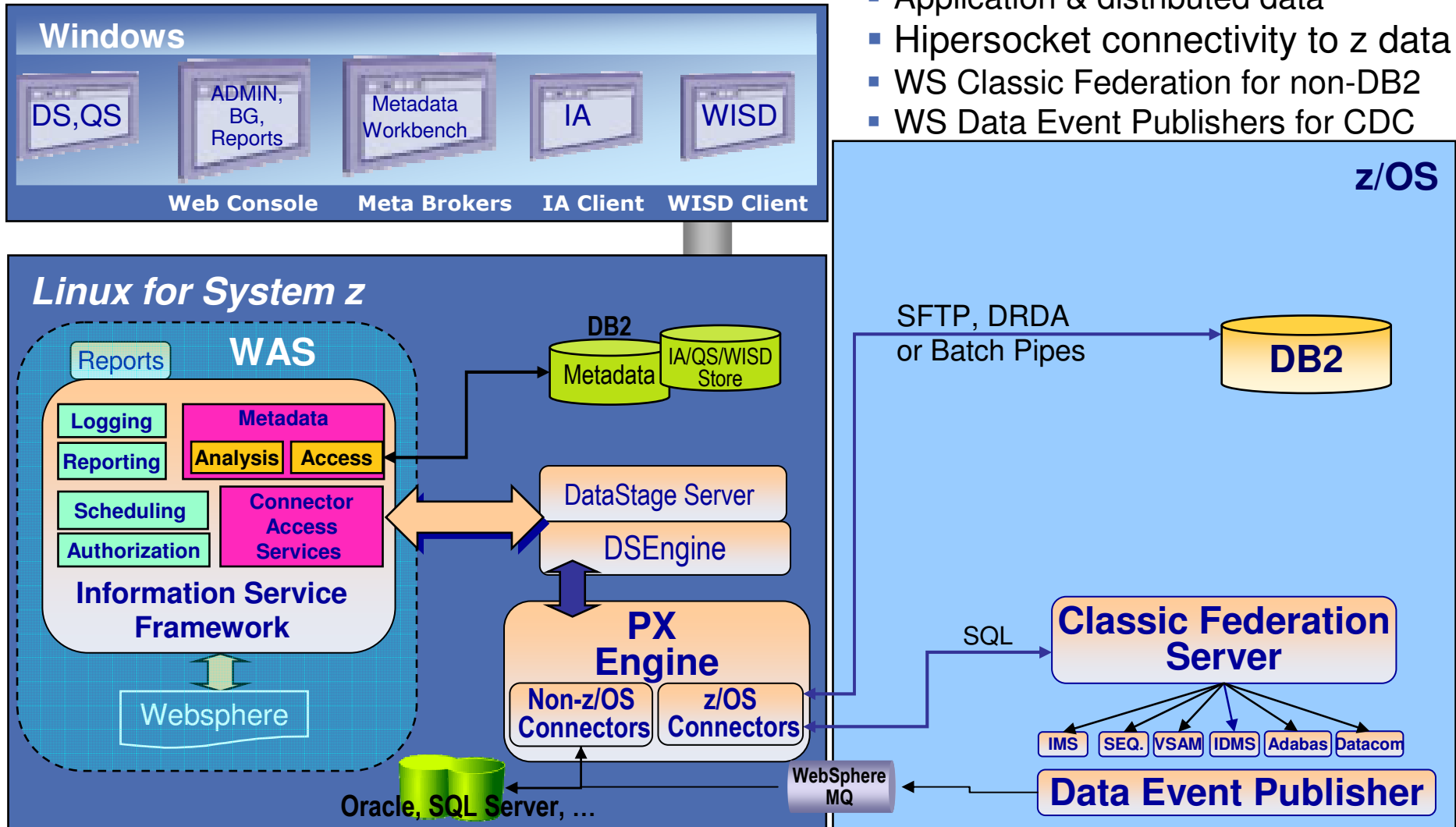
- Full Information Server suite: WebSphere QualityStage, WebSphere Information Analyzer...
- Robust, parallel processing
- Minimal impact on z/OS costs: Leverages IFLs and zIIPs



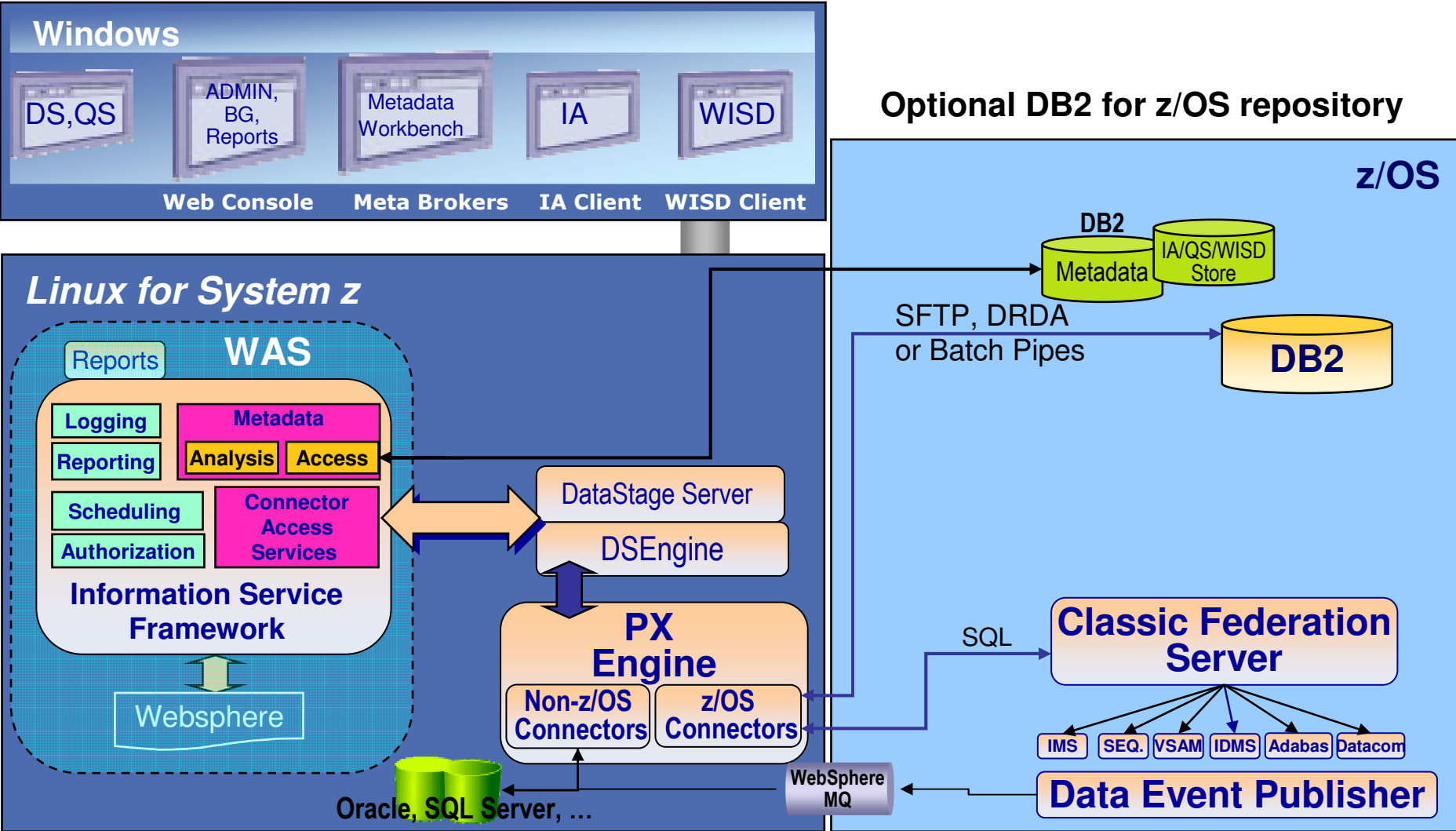
IBM Information Server for System z

Rich connectivity with:

- Application & distributed data
- Hipersocket connectivity to z data
- WS Classic Federation for non-DB2
- WS Data Event Publishers for CDC



IBM Information Server for System z



IBM Information Server for System z

Benefits of a hybrid architecture that leverages Linux for z

- Significant cost savings:
 - z/OS MIPs consumption dramatically reduced!
All Job Processing is on zLinux, except the z/OS data access
 - DB2 access qualifies for ZIIP specialty engine
 - MIPs charged at IFL rate ... NOT z/OS rate
 - Reduced z/OS CPU minimizes impact on other z/OS software costs
- High performance z data connectivity:
 - Batch Pipes for DB2 load, DRDA to DB2 over hipersockets
 - SQL to Classic over hipersockets, Integration with Data Event Publishers
- Seamless integration with other Information Server platforms
 - Same operational architecture and meta data Repository
 - Eliminates deployment issues
 - Maintains value of DataStage for z/OS investments



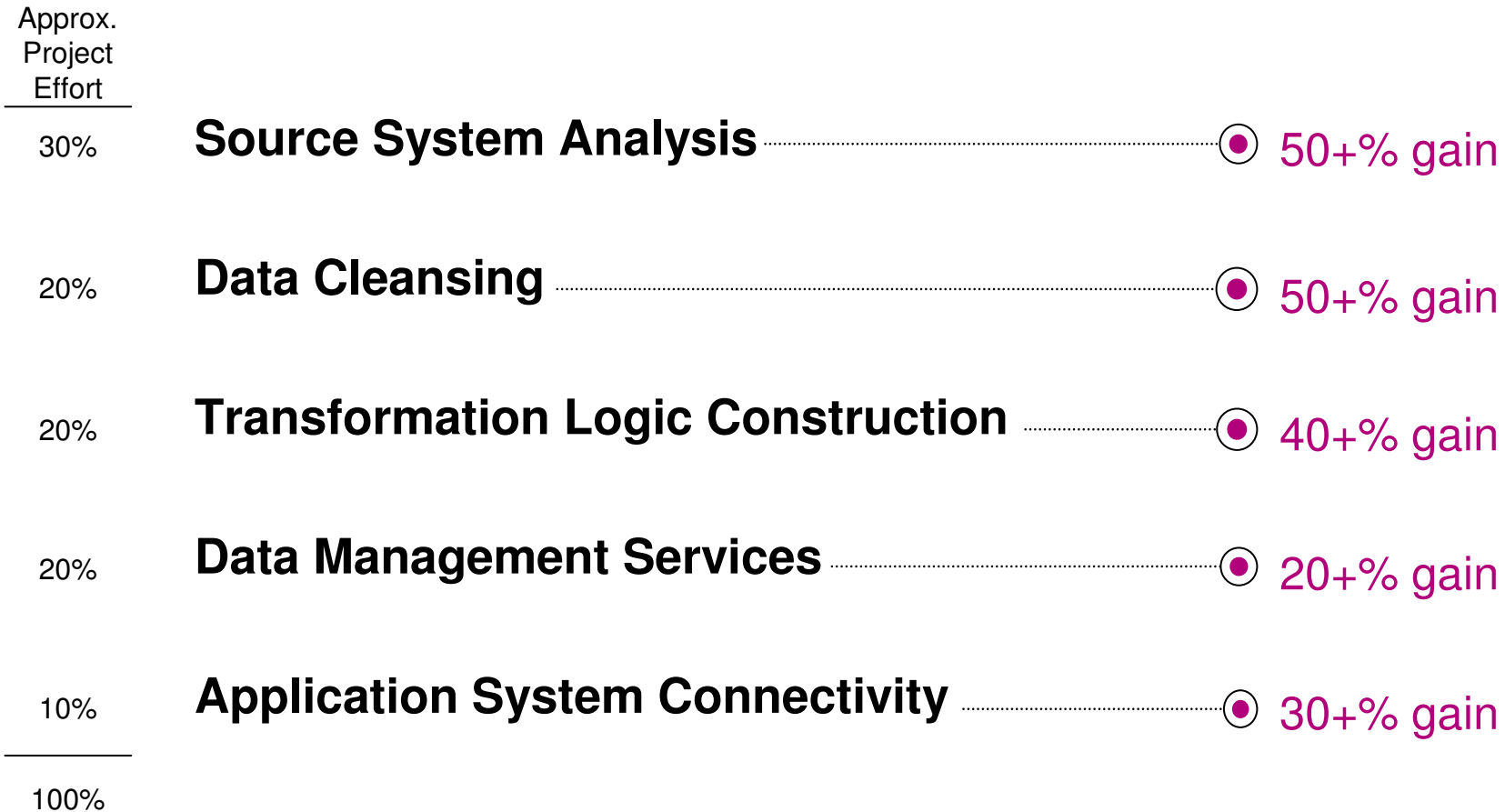
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Achieve Significant Productivity Benefits¹

Example ETL Project



¹ Compared to hand coding – gathered from IBM project studies



IBM Information Server for System z Advantage

A Complete Information Infrastructure

- A ***comprehensive, unified foundation*** for enterprise information architectures, scalable to any volume and processing requirement... that leverages the **scalability, security, manageability and reliability** of the mainframe **without added z/OS operational costs**
- ***Fully integrated, auditable data quality*** as a foundation for trusted information across the enterprise
- ***Metadata-driven integration***, providing breakthrough productivity and flexibility for integrating and enriching information
- ***Broadest and deepest connectivity*** to information across diverse sources: structured, unstructured, mainframe, and applications to **maximize the value of your IT investments**
Simplified scalability at lower cost to manage current & future data requirements
- Data governance capabilities to ensure **consistent and accurate compliance** with information-centric regulations and requirements



IBM can help with an *Information Integration Assessment*

On-site workshop for your team providing:

- Information Integration needs assessment
- Report and recommendations

What is it?

An **interactive** session led by an IBM Information Integration Solutions specialist, to help you take advantage of emerging technologies, standards, and current trends in information integration

What will you get as a result?

- Outline of your current information integration environment
- Identification of key projects where information integration could improve IT productivity and speed development
- Exploration of alternative approaches
- Recommendations for architecture enhancements



Workshop Basics

Typical Agenda

- Part One:
Information gathering and sharing
 - Information Integration Overview
 - Discovery –
Extensive interviews and data collection
- Part Two:
Analysis, summary,
recommendations
 - Summary of information collected
 - Review of:
challenges, issues, problems, needs
 - Approaches considered
 - Tradeoffs
 - Recommendations

Typical Workshop Participants

- Up to 15 team members:
for example:
 - Architects
 - Data architects, information architects
 - Enterprise architects
 - Data architects or information architects
 - LOB managers in areas like
 - Compliance (financial services and other industries)
 - Supply chain management (CPG)
 - Clinical intelligence (healthcare)
 - Application owners
 - Middleware managers
 - Data warehouse managers and developers



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