



IBM Software Group

Enabling Information as a Service

Unleashing the Power of your Data

Dan Wardman

VP, DB2 and IMS Tools

Information Management Solutions



ON DEMAND BUSINESS™ = *Make it happen now*

The Information Challenge

Information is in Silos... Trusted Information is Not Available

Today's business challenges mandate a fresh approach to managing information.

Managing information in silos has become obsolete.

Globalization, M&As
 Risk & Compliance,
 Eroding Customer Loyalty,
 Supply Chain Complexity,
 Industry Transformations,
 Cost Cutting...

Multiple Versions of the Truth
 Inaccurate, Untimely
 Inconsistent
 Incomplete, Inaccessible
 Out of Context...

Information Must Become a Strategic Asset

5X More Value creation by organizations effective at using Information as an Asset

60%+ of CEOs: Need to do a better job leveraging information

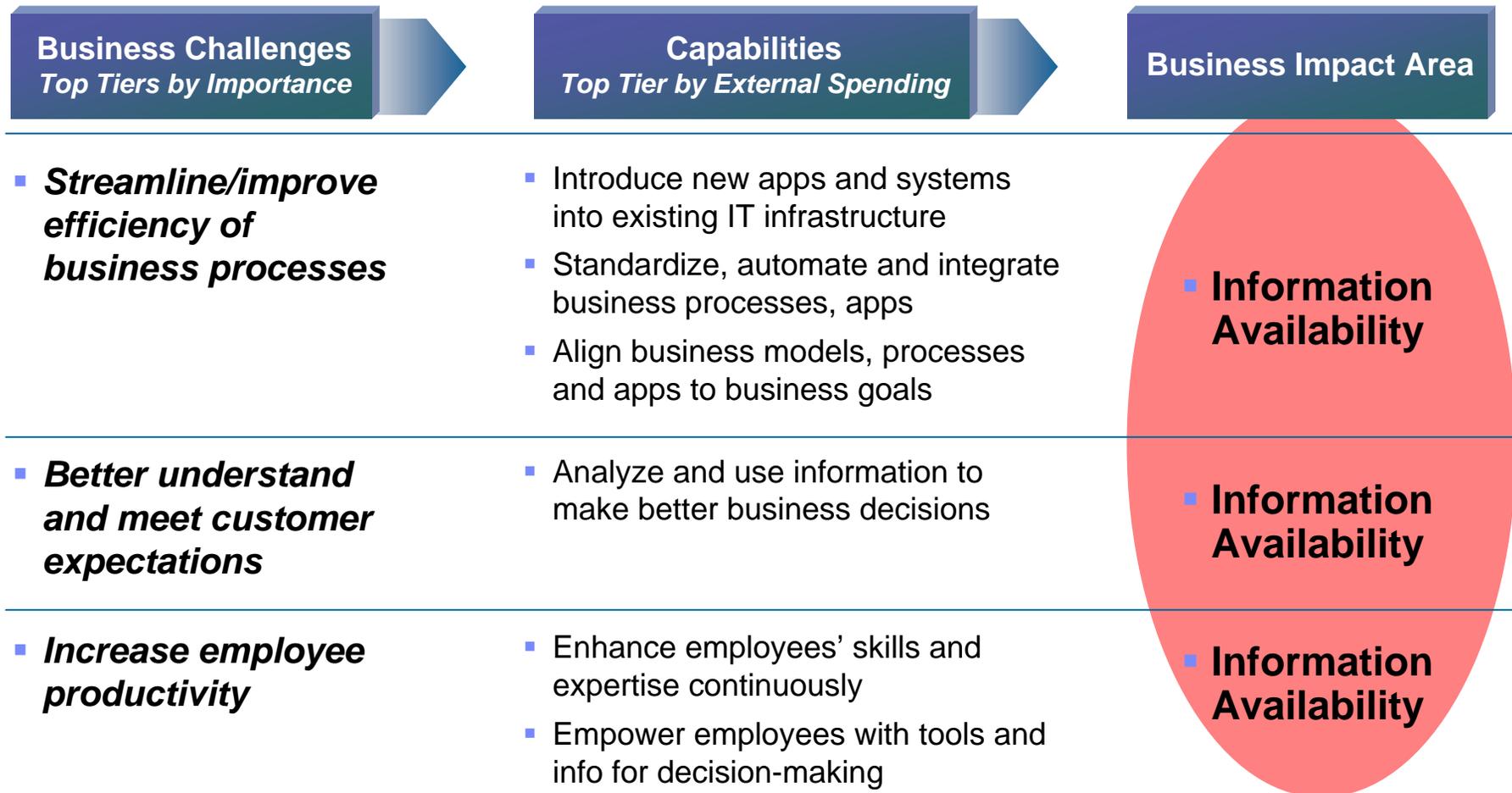
70% of people's time can be spent searching for relevant information

Sources: IBM Attributes & Capabilities Study, 2005; Client Interviews 2004; IBM CFO Study, 2006

Today's Business Challenges

Information Availability is the Top Priority

The most anticipated impact of business investing in IT has become information availability



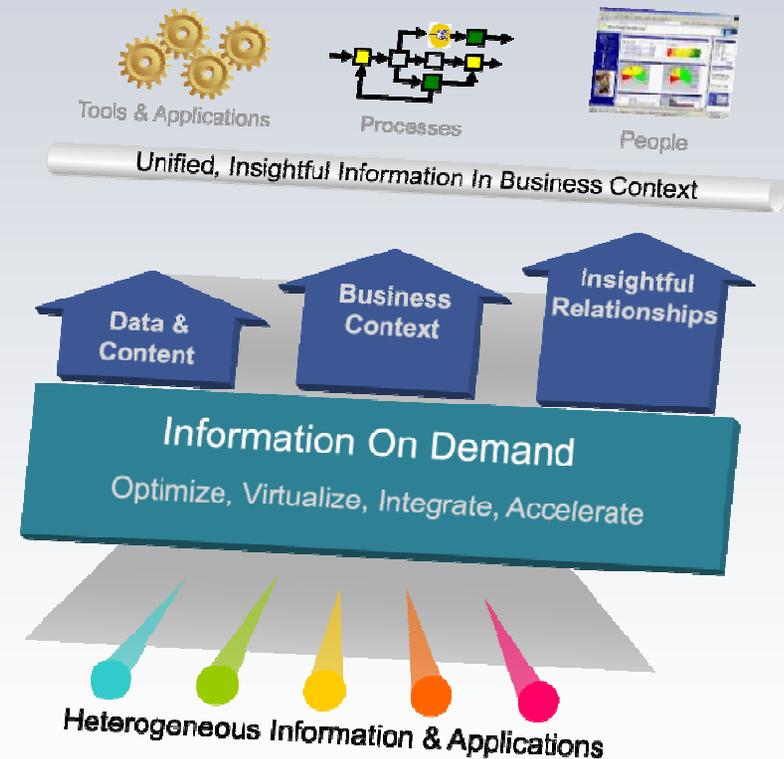
Source: IBM Attributes & Capabilities Study, 2005

Information On Demand

Key Value Proposition for System z Customers

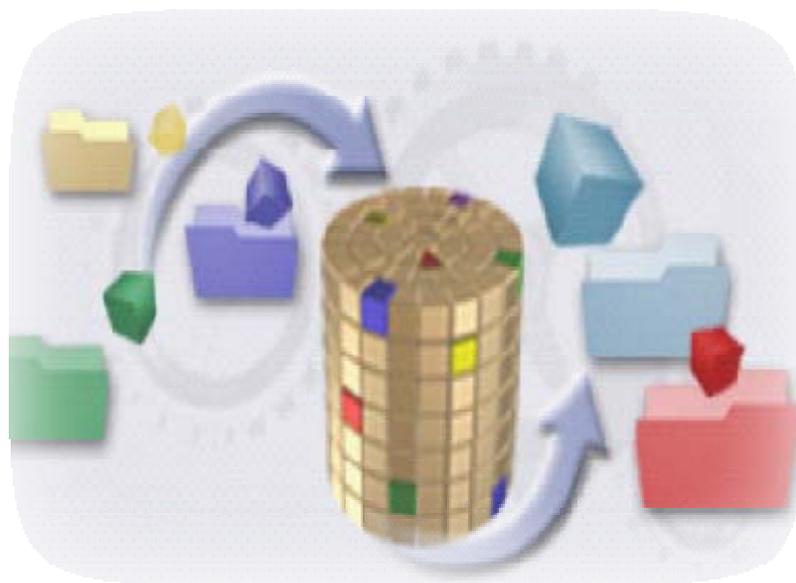
- Enhanced capabilities in DB2 for z/OS, IMS, and Tools
 - Mission critical databases and applications platform
 - Optimize IT infrastructure
 - Lower total cost of Ownership
 - Streamline Compliance and Auditability

- Open Connectivity and Information On Demand
 - Leverage your data and applications with Information integration and Virtualization
 - Leverage unstructured content
 - Achieve ROI with solution accelerators



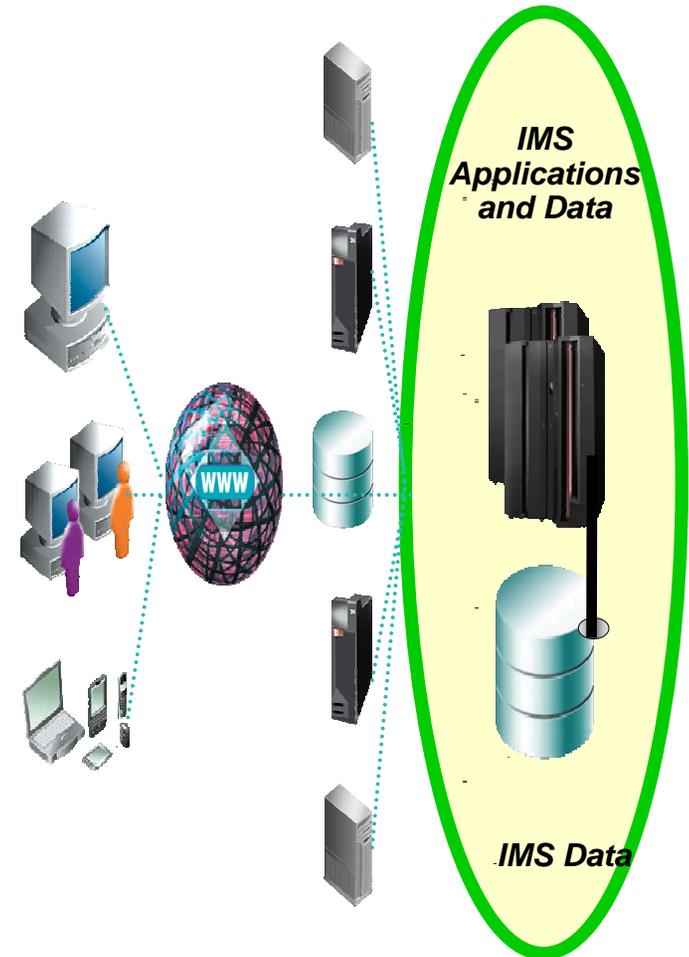
Information Services

Data Services



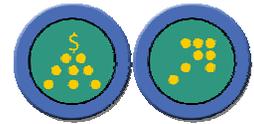
IMS – 37 Years of Proven Quality, Performance and Commitment

- ✓ **Over 95% of Fortune 1000 Companies use IMS**
- ✓ **Over 50 Billion Transactions with 200 Million Users a Day**
- ✓ **Manage over 15 TB of production Data**
- ✓ **Reengineered to provide new programming, tooling and connectivity options such as Java, XML and Web Services**



IMS Update

Continuing Growth, Function and Business Value



■ **IMS V9 Currently Available**

- XML database support
- Publish Transactions/Data as Web Services
- Integrated Connect function for High Performance access
- Integrated HALDB Online Reorganization for ultra scalable/available data
- Tooling to easily develop/deploy/manage applications at low cost

■ **2006 Targeted Delivery**

- SOA Enhanced Integration and Transformation
 - SOAP Gateway, XML Adapter, XQuery Preview, DLIModel Utility GUI Beta
- Further Enhancements for Integration, Manageability, Scalability



■ **Next Steps**

- Increasing Parallelism in Recovery/Connectivity
- SOA Support Enhancements
 - XML, Web Services, PL/I Transactions, IMS as a Client
 - Integrated Operations across Subsystems/Platforms
 - Enhancing Security
- Installation/Management Enhancements to Simplify Skill Requirements

IMS - China Construction Bank



■ Challenges

- ▶ Data center consolidation from mostly non-IBM environment
- ▶ Thousands of stations (sessions)
- ▶ 100+ million, soon to be 150 million savings accounts
- ▶ Phasing in branches (provinces) throughout 2003/2004/2005 resulting in
 - Drastic increases in amount of data
 - Exponential increases in transaction volume
- ▶ High availability essential

■ Solution

- ▶ IBM Parallel Sysplex
 - 2 way initial data sharing implementation going to 4-way soon
- ▶ IMS V8 Data Base Manager
 - HALDB for large DB's requiring multiple secondary indexes
 - Fast Path DEDB's using >240 Areas support for capacity and efficiency
 - Fast Data Base Recovery (FDBR) function used for continuous data availability
- ▶ Peer to Peer Remote Copy (PPRC)/Geographically dispersed Parallel Sysplex (GDPS) planned for remote site backup
- ▶ Automatic Restart Manager (ARM) used for quick image restart
- ▶ IBM System Automation tool used for subsystem startup / shutdown / etc.

DB2 for z/OS V8: At a glance

■ Improved IT Infrastructure In Support of Compliance Efforts

- Greater encryption capabilities (incl. DB2 data encryption tool)
- Common Criteria security certification currently in evaluation stage
- Multi-level & row-level security
- HW cryptographic features

■ Simplify development and porting

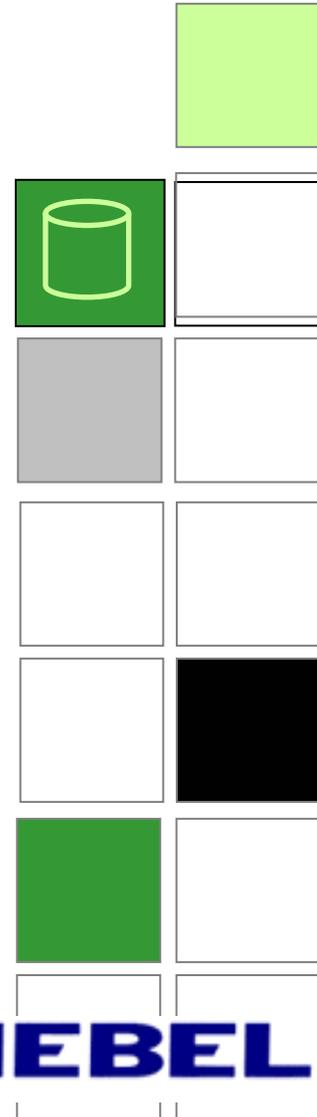
- Online Schema Evolution
- Rolling maintenance & upgrades
- DB2 SQL family improvements
- Dramatically increase limits throughout system

■ Decrease Complexity and Reduce Cost

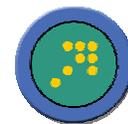
- 64-bit virtual addressing
- Built in data compression
- Autonomic capabilities
- Multi-row insert and fetch
- Increased optimization and query performance

■ Evolve Your Environment & SOA

- Improved XML capabilities
- WAS and Java integration



Leverage Existing Application Development Skills



- Exploiting new converged SQL

- Key Database Technologies

- SQL, SQL Procedures
- XML
- SOA, Web Services



- Developer communities

- COBOL, PL/I, REXX, C, C++
- Java (JDBC / SQLJ)
- .NET (C#, VB .NET)
- Open Source



- **PHP**
- **Perl**
- **Python**
- **Ruby on Rails**



DB2 Family SQL

z z/OS V7

common

LUW Linux, Unix & Windows V8.2



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Inner and Outer Joins, Table Expressions, Subqueries, GROUP BY, Complex Correlation, Global Temporary Tables, CASE, 100+ Built-in Functions, Limited Fetch, Insensitive Scroll Cursors, UNION Everywhere, MIN/MAX Single Index Support, Self Referencing Updates with Subqueries, Sort Avoidance for ORDER BY, and Row Expressions, Call from trigger, statement isolation

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Updateable UNION in Views, ORDER BY/FETCH FIRST in subselects & table expressions, GROUPING SETS, ROLLUP, CUBE, INSTEAD OF TRIGGER, EXCEPT, INTERSECT, 16 Built-in Functions, MERGE, Native SQL Procedure Language, SET CURRENT ISOLATION, BIGINT data type, file reference variables, SELECT FROM UPDATE, DELETE & MERGE, multi-site join, 2M Statement Length, GROUP BY Expression, Sequences, Scalar Fullselect, Materialized Query Tables, Common Table Expressions, Recursive SQL, CURRENT PACKAGE PATH, VOLATILE Tables, Star Join Sparse Index, Qualified Column names, Multiple DISTINCT clauses, ON COMMIT DROP, Transparent ROWID Column, FOR READ ONLY KEEP UPDATE LOCKS, SET CURRENT SCHEMA, Client special registers, long SQL object names, SELECT from INSERT

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DB2 Family SQL

z z/OS V8

common

LUW Linux, Unix & Windows V8.2



z

Multi-row INSERT, FETCH & multi-row cursor UPDATE, Dynamic Scrollable Cursors, GET DIAGNOSTICS, Enhanced UNICODE for SQL, join across encoding schemes, IS NOT DISTINCT FROM, Session variables

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Inner and Outer Joins, Table Expressions, Subqueries, GROUP BY, Complex Correlation, Global Temporary Tables, CASE, 100+ Built-in Functions including SQL/XML, Limited Fetch, Insensitive Scroll Cursors, UNION Everywhere, MIN/MAX Single Index Support, Self Referencing Updates with Subqueries, Sort Avoidance for ORDER BY, and Row Expressions, 2M Statement Length, GROUP BY Expression, Sequences, Scalar Fullselect, Materialized Query Tables, Common Table Expressions, Recursive SQL, CURRENT PACKAGE PATH, VOLATILE Tables, Star Join Sparse Index, Qualified Column names, Multiple DISTINCT clauses, ON COMMIT DROP, Transparent ROWID Column, Call from trigger, statement isolation, FOR READ ONLY KEEP UPDATE LOCKS, SET CURRENT SCHEMA, Client special registers, long SQL object names, SELECT from INSERT

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DB2 Family SQL

z z/OS V8 DB2 9

common

LUW Linux, Unix & Windows V8.2



z

Multi-row INSERT, FETCH & multi-row cursor UPDATE, Dynamic Scrollable Cursors, GET DIAGNOSTICS, Enhanced UNICODE for SQL, join across encoding schemes, IS NOT DISTINCT FROM, Session variables, TRUNCATE, DECIMAL FLOAT, VARBINARY, optimistic locking, FETCH CONTINUE, ROLE, MERGE

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Inner and Outer Joins, Table Expressions, Subqueries, GROUP BY, Complex Correlation, Global Temporary Tables, CASE, 100+ Built-in Functions including SQL/XML, Limited Fetch, Insensitive Scroll Cursors, UNION Everywhere, MIN/MAX Single Index Support, Self Referencing Updates with Subqueries, Sort Avoidance for ORDER BY, and Row Expressions, 2M Statement Length, GROUP BY Expression, Sequences, Scalar Fullselect, Materialized Query Tables, Common Table Expressions, Recursive SQL, CURRENT PACKAGE PATH, VOLATILE Tables, Star Join Sparse Index, Qualified Column names, Multiple DISTINCT clauses, ON COMMIT DROP, Transparent ROWID Column, Call from trigger, statement isolation, FOR READ ONLY KEEP UPDATE LOCKS, SET CURRENT SCHEMA, Client special registers, long SQL object names, SELECT from INSERT, UPDATE, DELETE & MERGE, INSTEAD OF TRIGGER, Native SQL Procedure Language, BIGINT, file reference variables, XML, FETCH FIRST & ORDER BY in subselect and fullselect, caseless comparisons, INTERSECT, EXCEPT, not logged tables

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Updateable UNION in Views, GROUPING SETS, ROLLUP, CUBE, 16 Built-in Functions, SET CURRENT ISOLATION, multi-site join, MERGE

Optimized for SAP

System z provides

- Continuous availability with data sharing
- True scalability with performance
- Storage cost savings with hardware compression
- Central server for SAP (MCOB)
- Customized infrastructure with zIIP
 - DB2 support available June 2006



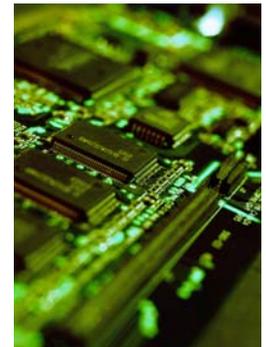
**DB2 and
System z
Unique**

DB2 for z/OS delivers for SAP

- Largest SAP implementation runs on DB2
- 50+ SAP requested features delivered in DB2 V8
 - SAP NetWeaver BI improvements
- 30+ more coming in DB2 9
- Ease of use and manageability
 - Self healing, self optimization
 - Utilities - DBA productivity
 - SAP toolkits for DB2

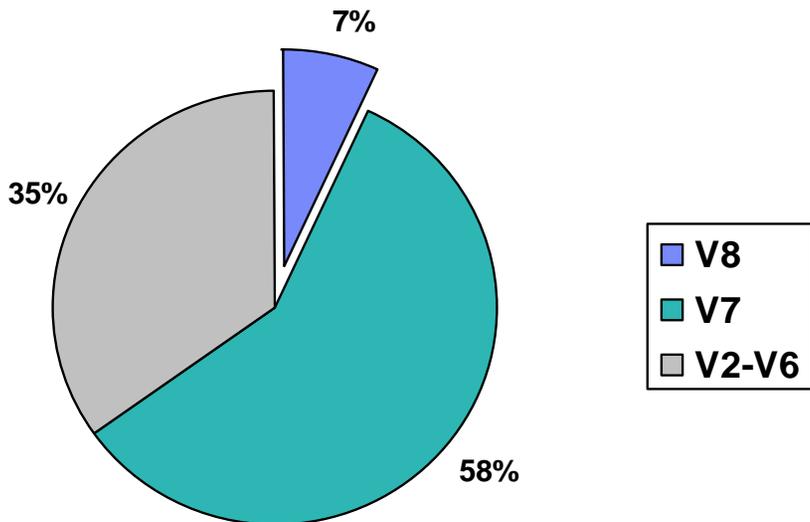


**DB2 9
Closed Beta
June 2006**

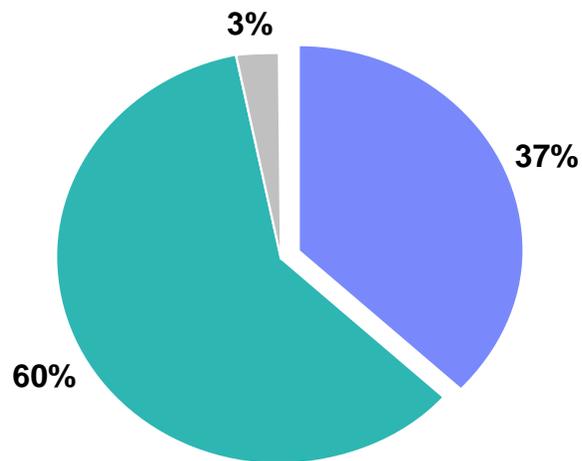
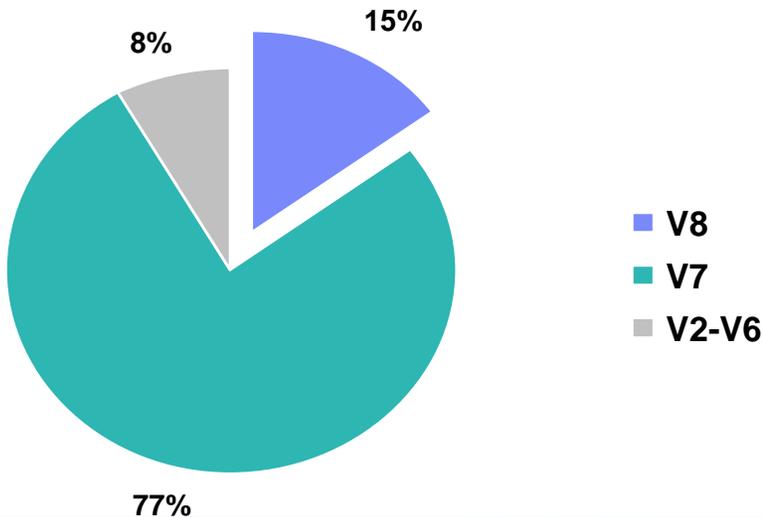
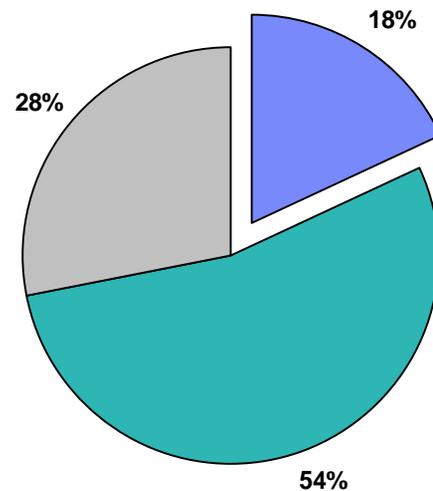


DB2 for z/OS V8 Upgrades

YE 2004



YE 2005



HVBInfo -- HypoVereinsbank AG

Challenge:

HVBInfo provides IT services for HypoVereinsbank, one of the three largest banks in Europe and the leading real estate financier. Their 2400 branches serve 8 million customers. Their challenges were to:

- Deliver a true 24x7 application environment with access to updated, consistent and secure data
- Upgrade database platform to improve stability, availability, and performance
- Exploit 64-bit accessibility and achieve better integration with DB2 software applications

Solution:

HVBInfo upgraded to DB2 for z/OS V8 on an existing eServer System z platform and improved availability and data sharing. The solution also includes:

- DB2 Connect Enterprise Edition, V7 and V8
- DB2 QMF, V8
- DB2 Administration Tool for z/OS, V7

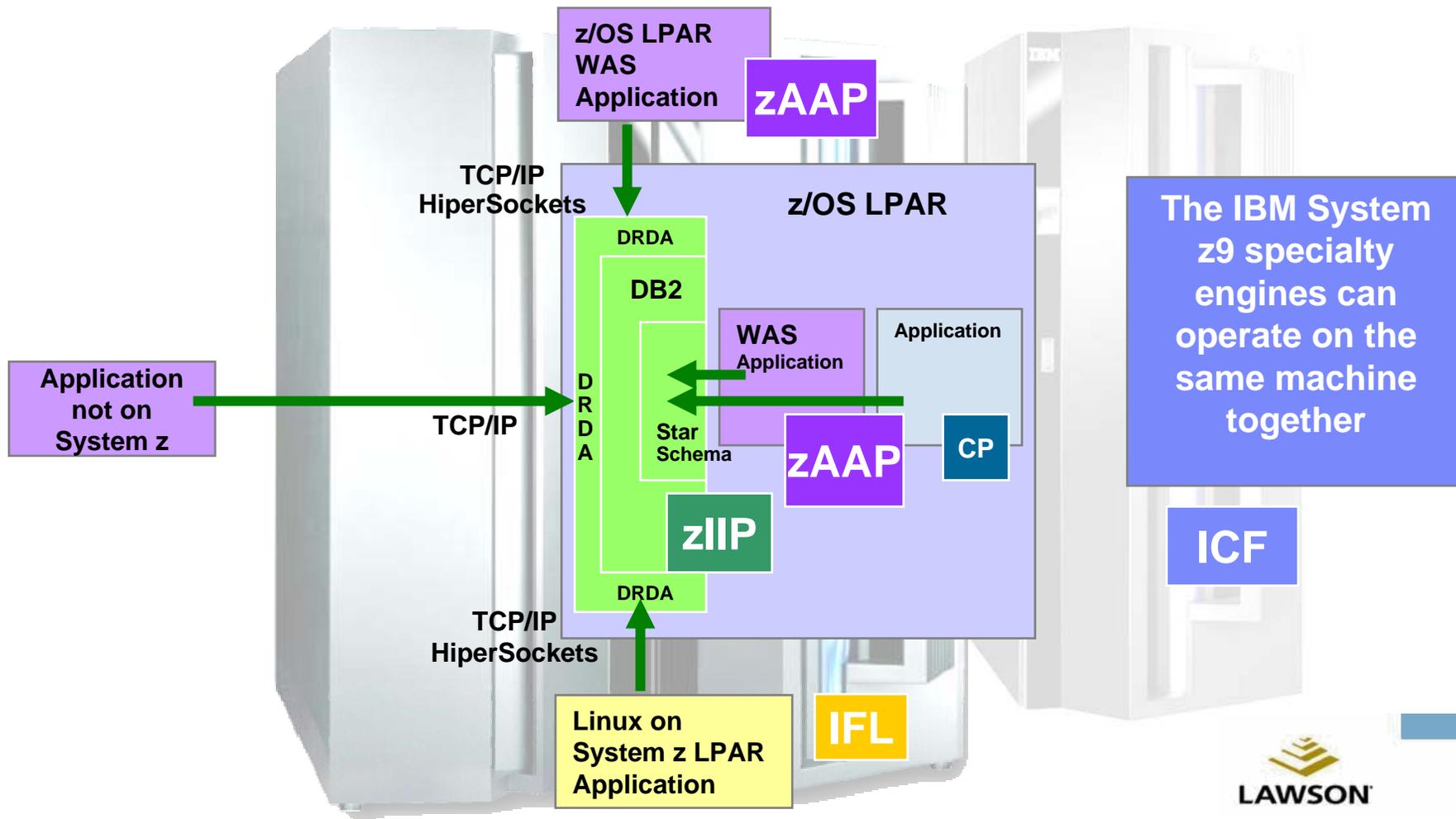
Business Benefits:

- **Increased flexibility in application environment**
- **Ability to integrate Java applications easily**
- **20 to 30% decrease in time to market for new banking applications**
- **Significant cost savings are projected**

Technology Benefits:

- **DB2 for z/OS V8 provides automated resolution of database logical page list and virtual storage constraint relief**
- **DB2 Connect accesses data on workstations**
- **DB2 QMF retrieves specific data stored in a data warehouse**
- **DB2 Admin Tool manages objects, tables, indexes through online schema evolution**

Optimize Costs... Specialty Engines



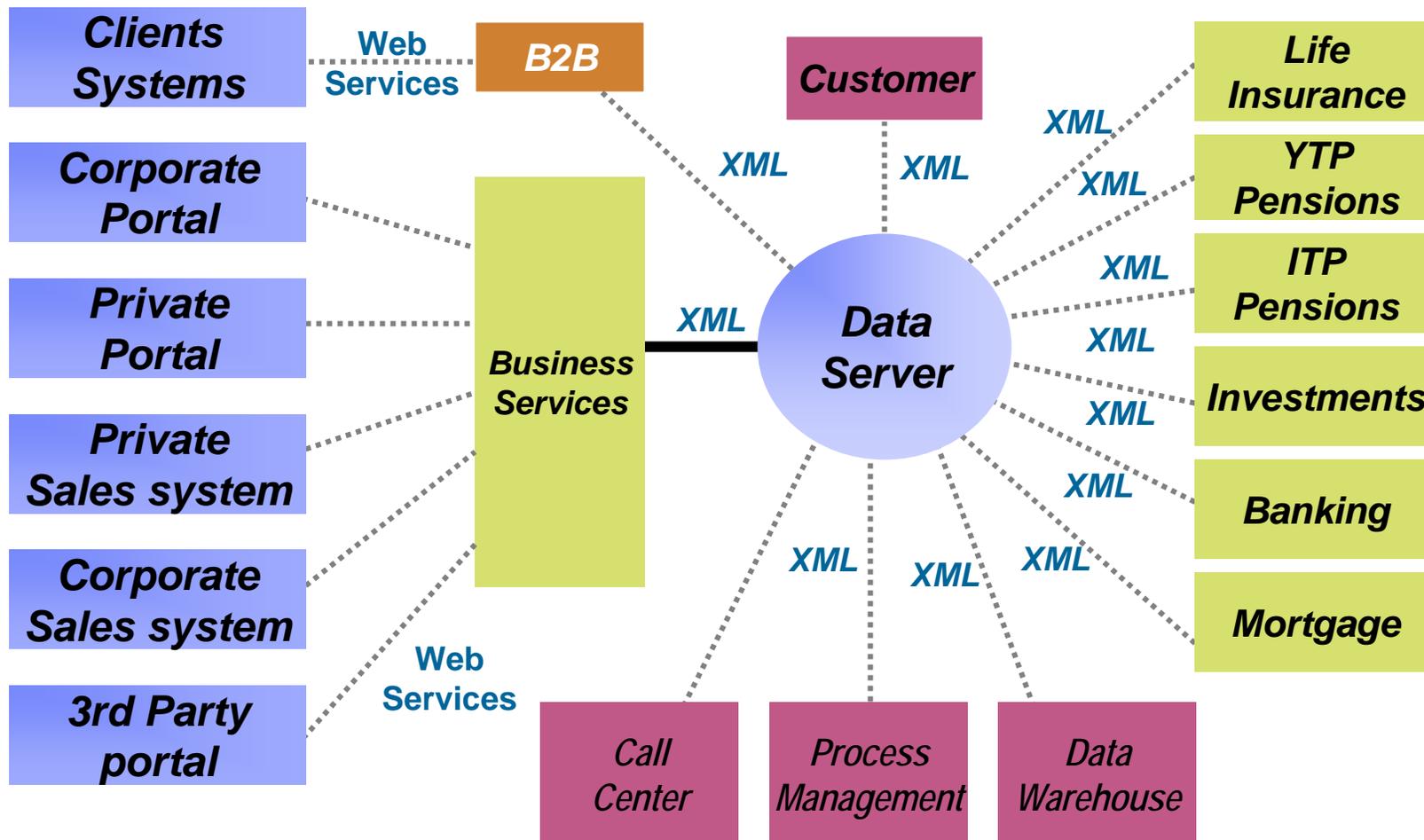
The IBM System z9 specialty engines can operate on the same machine together

ICF



Powering a Flexible Approach

XML and SOA are the Keys

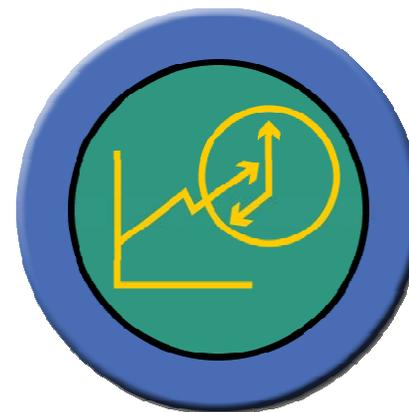


DB2 Viper for z/OS

Scalability, Availability, Performance

**Closed Beta
Starts
June, 2006**

- **Hybrid Data Server with Pure XML**
- **Data Definition On Demand**
 - Online reorganization with no BUILD2 phase
 - Fast replacement of one table with another
 - Rename column and index
 - Alter index to change page size
 - Table space that can add partitions, for growth
 - Modify early code without requiring an IPL
 - Alter table space and index logging
 - Clone Tables
- **CPU reductions in LOAD and REORG**
- **Online REBUILD INDEX**
- **Insert performance**
 - APPEND, INDEX, LOG
- **LOB performance, function, scalability**
- **INDEX on expression**
- **SQL and optimization improvements**



and more...

DB2 Viper for z/OS

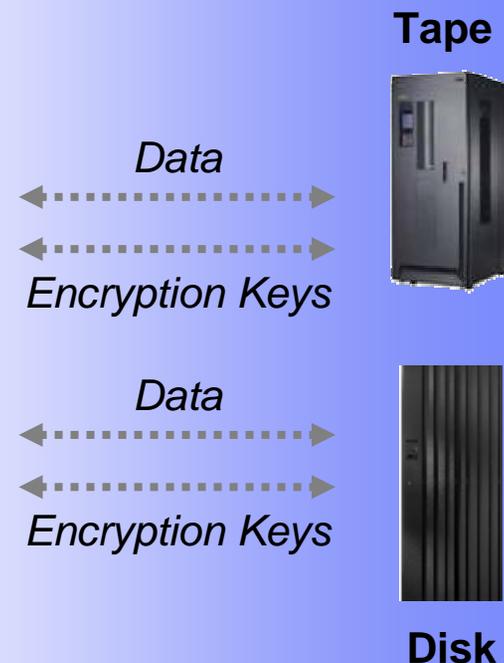
Securing the Information Asset



DB2 9 for z/OS

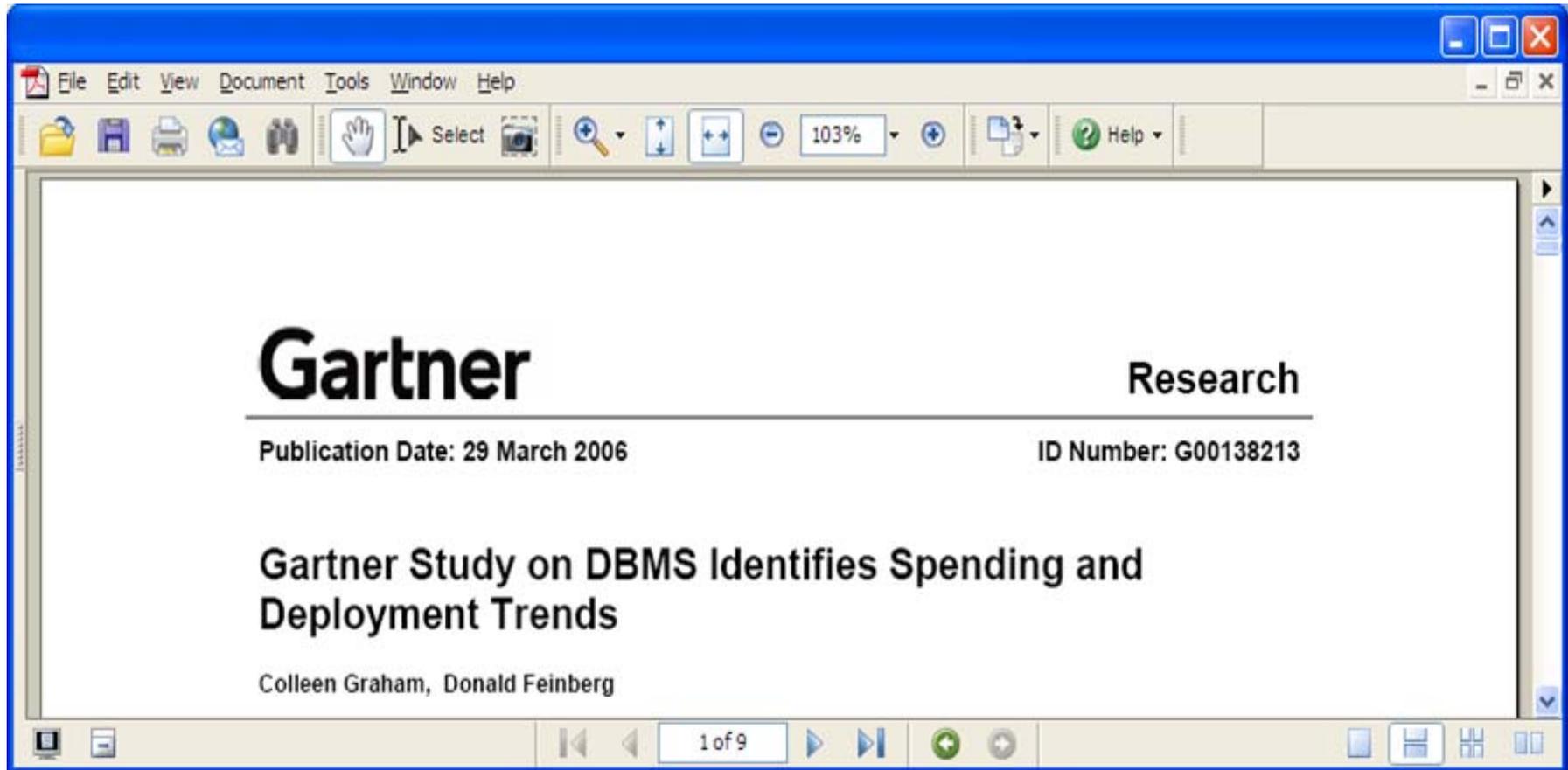
- **Roles**
- **Network Trusted Contexts**
- **Instead of Triggers**
- **Improved Auditing**
- **Secure Socket Layer**
- **Data Encryption**

Enterprise-wide Key Management



Future Direction

What are Others Saying About DB2?



What are Others Saying About DB2?

“...The biggest surprise is DB2 from IBM, with 19 percent planning to install DB2. This is nearly 50 percent higher than the number planning to install Oracle.

...Nearly 30 percent intend to transition some of their DBMS workload on to z/OS, a large percentage of whom are making a transition from Windows to z/OS.

...DBMS is one area in which organizations can leverage the power and throughput of the platform through one consolidation of systems and headcount.

.... We continue to see the mainframe chosen as older applications are rewritten or purchased.

...The overall numbers so strongly in favor of DB2 indicate a pending increase in IBM's market share for DBMS during the next few years...”

DB2 and IMS Tools

Reducing TCO is our first focus

- ✓ Provide autonomic features to add capability and simplify operations
- ✓ Avoid tedious tasks and reduce errors
- ✓ Preserve your investment in z/OS applications and databases



2005: Reduce your TCO

2004 Autonomic Computing and End to End Monitoring

2003: Integration of products, new capabilities, better performance

2001-2002 Product replacements

2000: Reduce your TCO

Today's IBM DB2 Tools

Utilities Management

- DB2 Utilities Suite
- DB2 Automation Tool
- **DB2 HP Unload**
- DB2 Automation Toolkit SAP Edition

Database Administration

- DB2 Administration Tool
- DB2 Object Comparison Tool
- Data Encryption for DB2 and IMS
- DB2 Thread Expert
- DB2 Administration Toolkit SAP Edition

Performance Management

- **DB2 Performance Expert**
- DB2 Performance Monitor
- OMEGAMON XE for DB2 on z/OS
- DB2 Buffer Pool Analyzer
- DB2 Query Monitor
- DB2 SQL Performance Analyzer
- DB2 PerformanceToolkit SAP Edition

Recovery Management

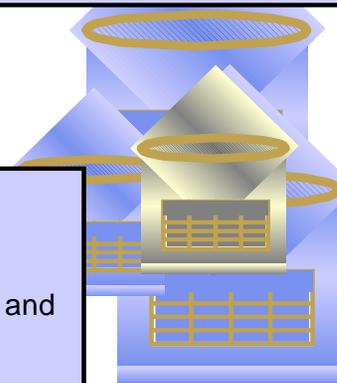
- Application Recovery Tool for IMS and DB2 Databases
- DB2 Archive Log Accelerator
- DB2 Change Accumulation Tool
- DB2 Log Analysis Tool
- DB2 Object Restore Tool
- **DB2 Recovery Expert**

Application Management

- DB2 Data Export Facility
- DB2 Path Checker
- DB2 Bind Manager
- DB2 Data Archive Expert
- **DB2 Table Editor**
- **DB2 Web Query Tool**
- **DB2 Test Database Generator**

Information Integration

- DB2 DataPropagator
- SQData
- WebSphere II Replication
- WebSphere II Classic Federation
- WebSphere II Event Publisher for z/OS



Available on System z

Available on System z and multiplatforms

Currently only available on multiplatforms

Today's IBM IMS Tools Product Portfolio

Database Administration

- Data Encryption for IMS and DB2 Databases
- IMS Database Repair Facility
- IMS HALDB Conversion and Maintenance Aid
- IMS Hardware Data Compression Extended
- IMS Library Integrity Utilities
- IMS Parameter Manager
- IMS Sequential Randomizer Generator

Recovery Management

- Application Recovery Tool for IMS and DB2
- IMS DEDB Fast Recovery
- IMS Database Recovery Facility
- IMS High Performance Change Accumulation
- IMS High Performance Image Copy

Utilities Management

- IMS Database Control Suite
- IMS High Performance Fast Path Utilities
- IMS High Performance Load
- IMS High Performance Pointer Checker
- IMS High Performance Prefix Resolution
- IMS High Performance Unload
- IMS Index Builder
- IMS Parallel Reorganization

TM Management

- IMS Command Control Facility
- IMS ETO Support
- IMS High Performance System Generation Tools
- IMS Queue Control Facility

Information Integration

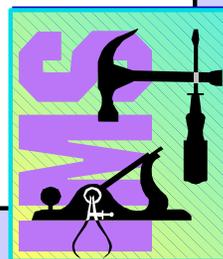
- IMS DataPropagator
- WebSphere II Classic Event Publisher for IMS
- WebSphere II Classic Event Publisher for VSAM
- WebSphere II Classic Event Publisher for CA-IDMS
- WebSphere II Classic Federation for z/OS

Performance Management

- IMS Buffer Pool Analyzer
- IMS Performance Analyzer
- IMS Problem Investigator
- IMS Network Compression Facility
- Tivoli OMEGAMON XE for IMS

Application Management

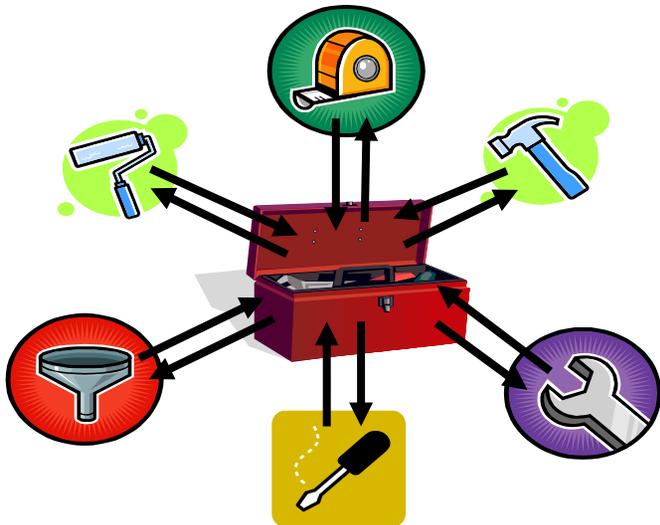
- IMS Batch Backout Manager
- IMS Batch Terminal Simulator
- IMS Connect
- IMS Connect Extensions
- IMS MFS Reversal Utilities
- IMS Program Restart Facility



New Tools to address TCO in 2006

■ DBA Time = Money

- Managing application changes
- Tuning for performance
- Optimizing repetitive tasks
- Managing Complexity
- Complying with regulations and audit



■ Time savers

- DB2 Change Management Expert
 - Automates and simplifies the most time consuming DBA task
- Omegamon DB2 Performance Expert
 - Tunes DB2 systems
 - Finds performance problems
 - Eliminates bottlenecks
- DB2 Optimizer Expert
 - Optimizes query performance
- DB2 Utilities enhancements
 - V8 zIIP exploitation
 - vNext volume based utilities
- IMS Sysplex manager
 - Simplifies complex IMS sysplex management
- DB2 Thread Expert
 - Manages DB2 Threads
- DB2 Audit Management Expert & IMS Audit Management Expert
 - Enables fast auditing of DB2 and IMS users and data
- DB2 Regulatory Compliance Suite
 - Combines 4 tools, including Audit Expert into a single compliance offering

Aids to DB2 Optimization – New in DB2 9

Optimization Service Center (OSC)

Part of the new DB2 9 Base offering

- **Visual Explain**
 - Easy to use SQL Explain function
- **Stats Advisor**
 - Helps you determine when to run Statistics
- **Service SQL**
 - Helps to resolve performance bugs
- **Visual Plan Hint**
 - Visual building for Plan hints

Optimization Expert (OE)

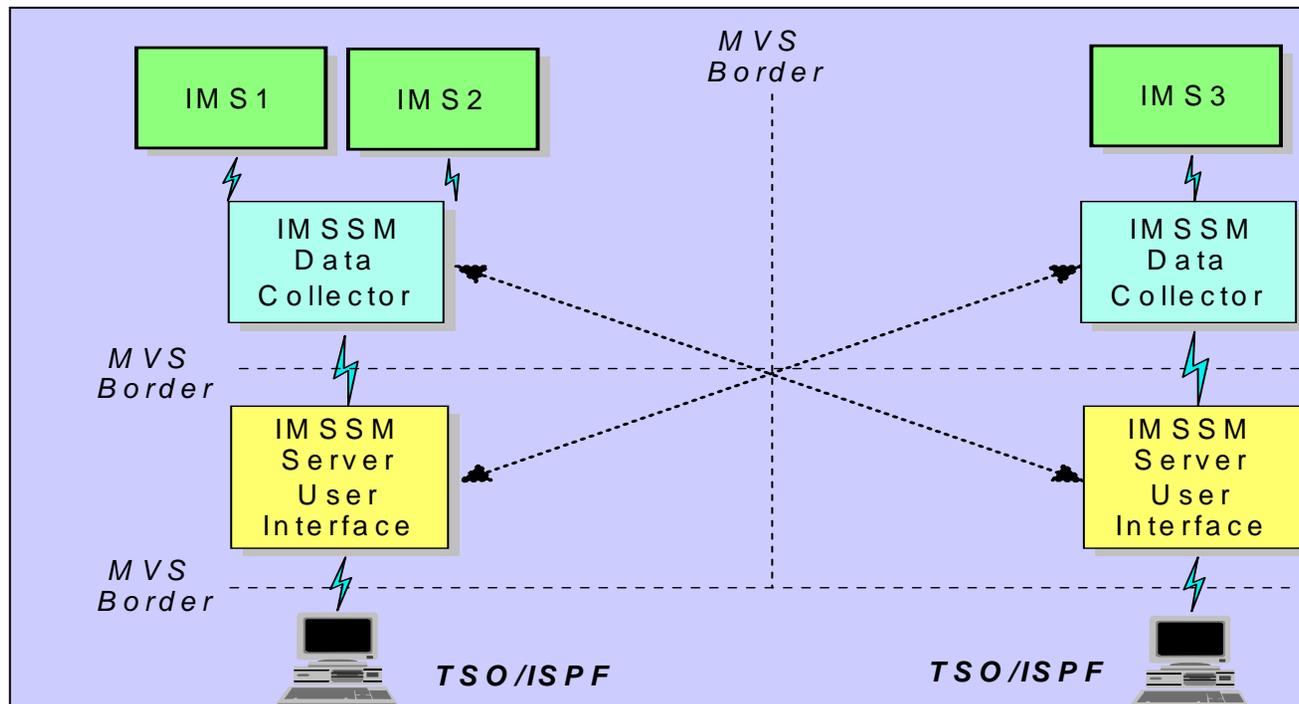
A new product complimentary to DB2 9

- **Index Advisor**
 - Enables you to select the best index to optimize query and application performance
 - Provides advice on what indexes to create
- **Query Advisor**
 - Advice for writing queries for best performance
- **MQT Advisor**
 - Advice on when to use Materialized Query Tables

Managing large IMS complex systems

IMS Sysplex Manager Improves IMS availability and scalability

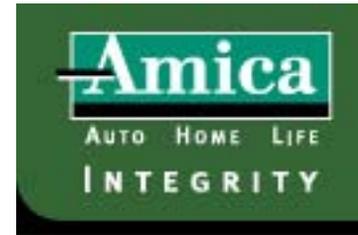
- Real-time management of IMS Sysplex
- Single system image for operation of IMS in Sysplex environment
- Aggregated or local view
- Simplified User Interface to reduce operational complexity
- Structured displays of IMS address spaces, CF structures, & resources
- Recorded System Exceptions and Console alerts
- Supports IMS DB/TM, DBCTL, and DCCTL for IMS V8, V9, ...



DB2 Regulatory Compliance Suite

Key Requirements	Set of Tools
<p>Use encryption to protect your vital information</p>	<p>Encryption Tool for DB2 databases</p> <ul style="list-style-type: none"> – Supports both secure key and clear key encryption – Low overhead, high performance
<p>Generate test data while protecting your assets</p>	<p>DB2 Test Database Generator</p> <ul style="list-style-type: none"> – Protects sensitive data when needed in test environments – Preserves data relationships
<p>Retaining data to comply with policies</p>	<p>DB2 Data Archive Expert</p> <ul style="list-style-type: none"> – Simplifies and automates archive of data for retention requirements
<p>Analyze unauthorized usage of your data</p>	<p>DB2 Audit Management Expert</p> <ul style="list-style-type: none"> – Lets you determine who did what to whom and when

Tools - AMICA



Challenge

- Need to increase the efficiency of its IT operations
- Need to reduce total cost of ownership (TCO) of database platform
- Want to maintain competitive edge

Solution

- Suite of database management tools from IBM helped Amica improve its database administration efforts
- Respond to its employees' needs for quick and reliable access to information
- Created an end-to-end solution tailored to business needs providing the power needed at an attractive price

Business Benefits

- Reduced staff training time
- Enhanced database administrator (DBA) productivity
- Increased ability to respond to workforce's need for high-performance business applications --ability for IT team to institute proactive database maintenance
- Migration completed three months ahead of schedule

Alitalia SERVIZI

improves IT services while reducing costs



Challenge

- Alitalia SERVIZI relies on an IBM IMS database to store enormous amounts of critical data, and to serve as a transaction manager. More than 2,500MB of data are defined by the database, and a high number of IMS transactions access the IMS data each day.
- When Alitalia SERVIZI increased its computing power by adding more central processing units (CPUs), existing tool vendor required that the company pay more for the database management tools. They wanted a new database management solution that would offer similar functionality but at a lower cost.

Solution

- By replacing its current database management tools with IMS tools from IBM, Alitalia will save money through cost reduction.

Business Benefits

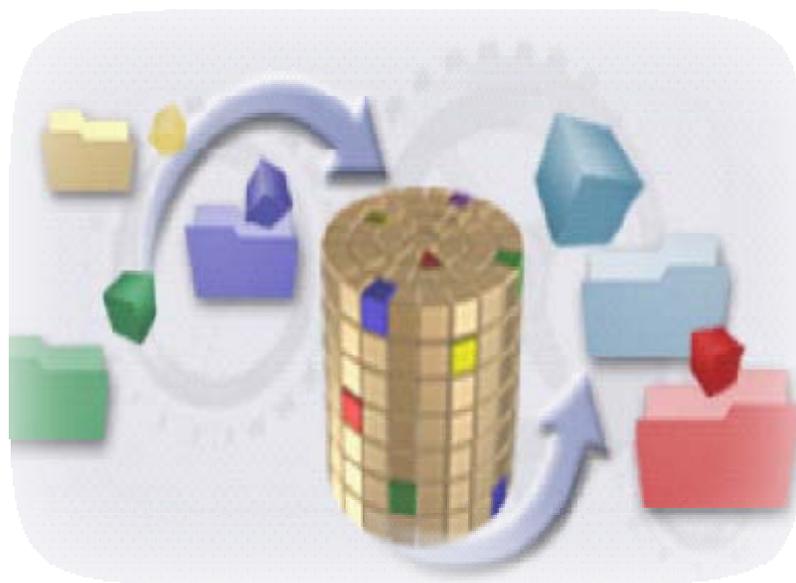
- The solution from IBM aligns with customer's goal to improve IT services while reducing costs.

Technology Benefits:

- Improved data availability, guaranteed data coherency and facilitated data management. IMS tools speed IMS database reorganization through faster database unload, load and image-copy processes.

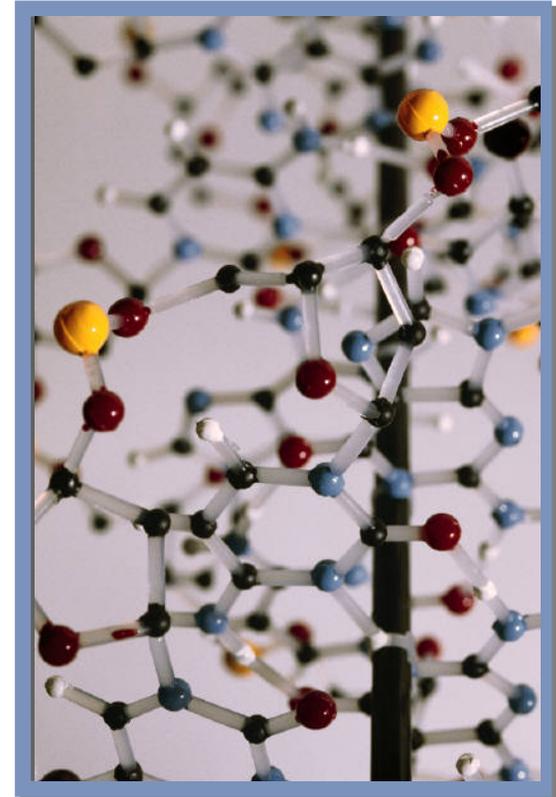
Information Services

Content Services

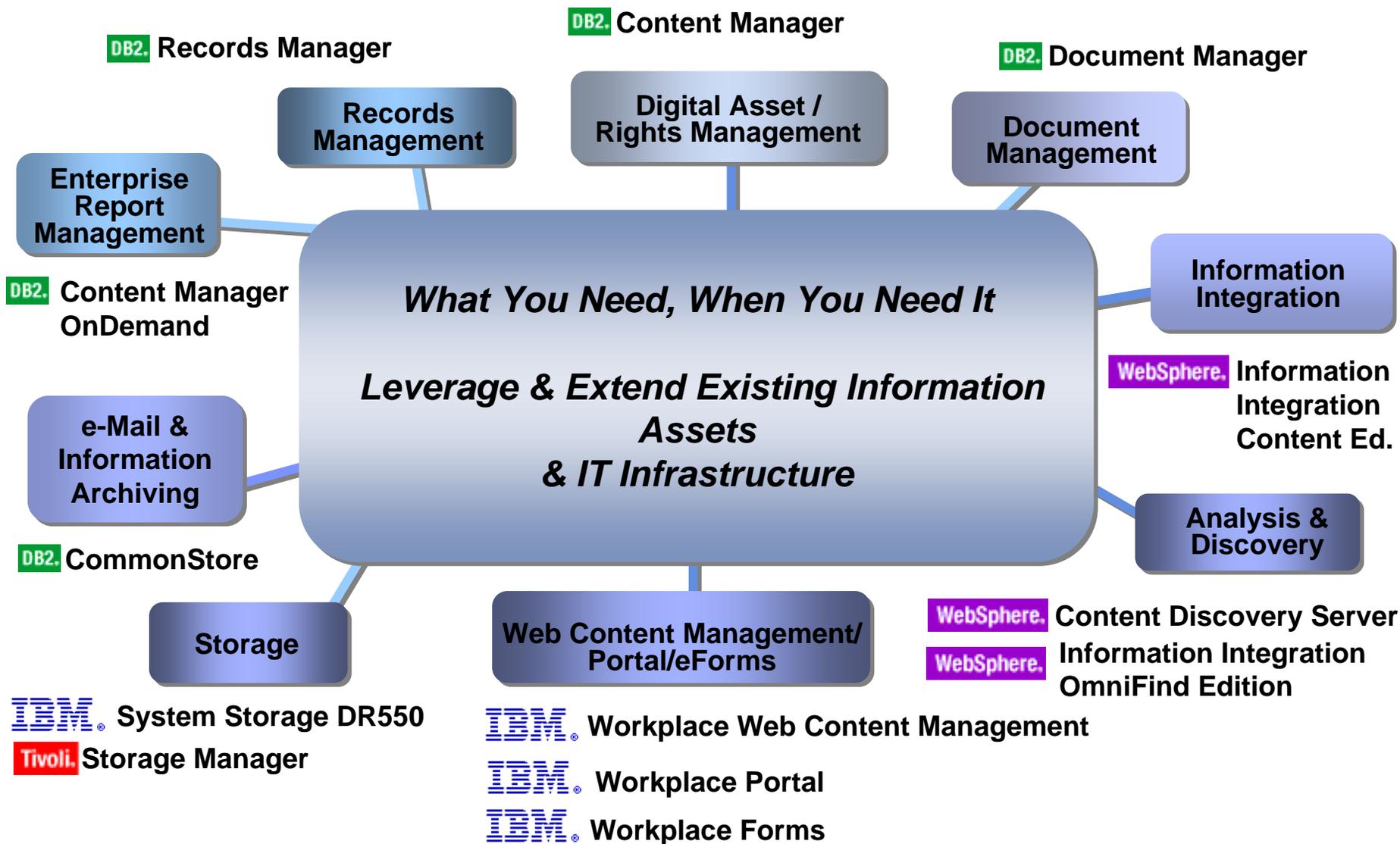


IBM Content Management & Discovery Services

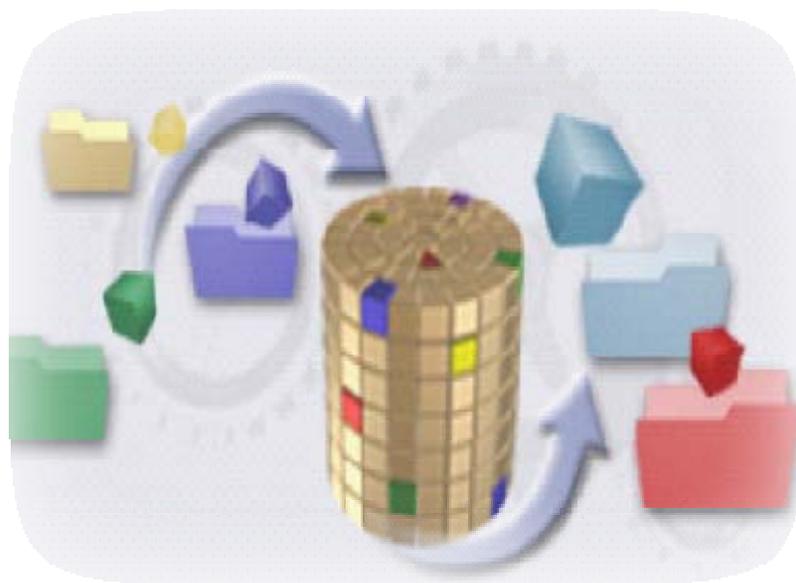
- The ability to capture, integrate, manage, deliver **all forms of digital content in-context based on specific user needs** across an entire company to create real business value.
 - **Leverage Data for Business Transformation**
 - Manage information across repositories
 - Declare, classify records across business solutions
 - Open standards/Java Content Repository support
 - **Manage Risk & Streamline Compliance**
 - Automate records management
 - industry-specific CM compliance solutions
 - **Gain Insight through Analysis and Discovery**
 - Scalable search capabilities
 - Extract knowledge and meaning for greater relevance and insight



IBM Content Management & Discovery Portfolio



Information Services
Information Integration Services
and
Business Information Accelerators



Information Integration Business Drivers

Where Business and IT Initiatives Meet

Initiative

Example Projects

Proof Points

Client Value

Insight from Information Analysis

Demand-driven Supply



Enterprise warehouse around SAP BW **reduced inventory by 30%**. Order fill rate improving to 98%.

Master Data Integration

Product Information Management



Consolidated inventory across branches in 9 months..2.5% inventory reduction...**£18 million savings**.

Infrastructure Rationalization

M&As, Consolidations



Consolidated disparate systems from merger...**£1M per week savings**. Reduced time to deliver by 45%.

Risk and Compliance

Basel II Compliance



Basel II compliance without disruption across 23 systems, 2,500 branches.

Business Transformation

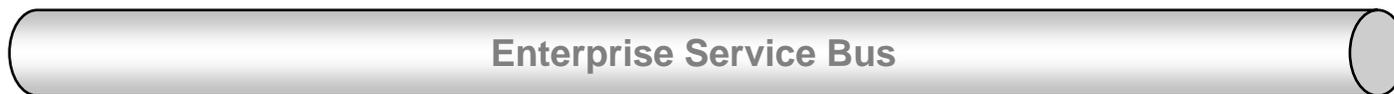
Customer Service Innovation



Consistent global metrics of 30,000+ stores **enables one-on-one CRM to 47M daily customers**.

IBM WebSphere Information Server

Delivering information you can trust



WebSphere Information Server

WebSphere Information Services Framework

Understand



- WebSphere Information Analyzer
- WebSphere Business Glossary
- Rational Data Architect

Cleanse



- WebSphere QualityStage

Transform & Move



- WebSphere DataStage
- WebSphere Replication Server
- WebSphere Data Event Publisher

Federate



- WebSphere Federation Server

WebSphere Metadata Server

Parallel Processing

Data



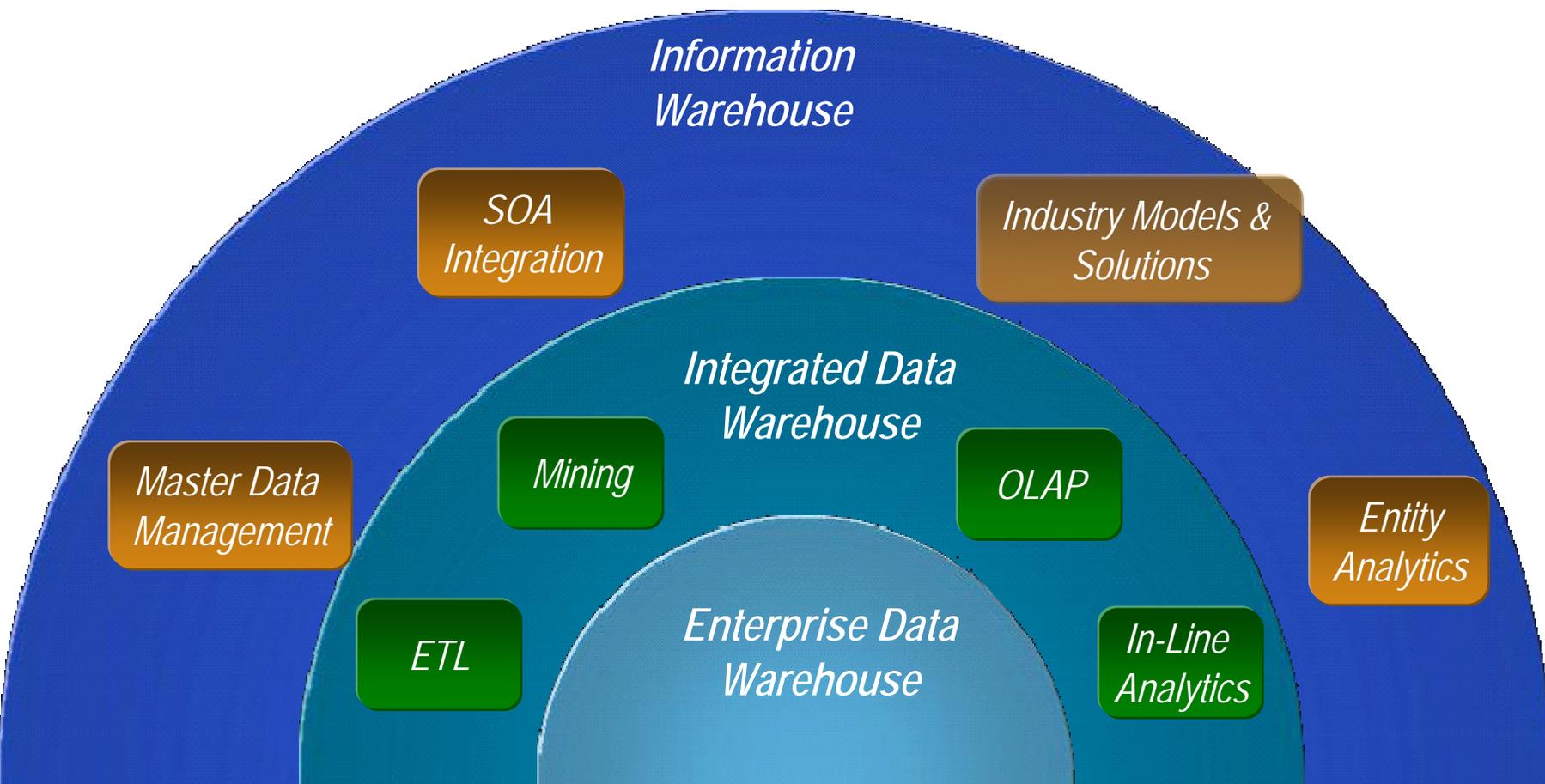
Common Connectivity



Content

From Data Warehousing to Information Warehousing

The core of the information warehouse is an enterprise data warehouse providing a single version of the truth, implemented as a single scalable database.



Entity Analytics Solutions



**DB2 for z/OS V8
Support GA
May 26, 2006**

Who is Who?	Who Knows Who?	Who Knows Who Anonymously
<p>Establish Unique Identity</p> <ul style="list-style-type: none"> • Same, Similar, Different • Full Attribution • Self-correcting • Never reload • On Demand Context • Enterprise Discovery 	<p>Relationship Awareness</p> <ul style="list-style-type: none"> • Relationship Awareness • Obvious and Non-Obvious • Links People and Groups • Degrees of Separation • Instant Alerts 	<p>Privacy-enhancing</p> <ul style="list-style-type: none"> • Analytics on Anonymized Data • Lowers Risk of Unintended Disclosure • Discovery Without Disclosure



Entity #14465

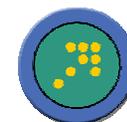


Identity Resolution	Relationship Resolution	Anonymous Resolution
---------------------	-------------------------	----------------------

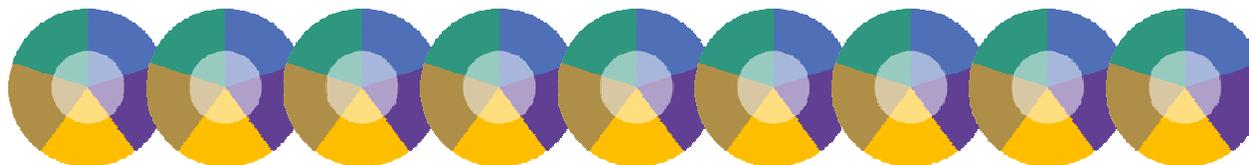
IBM Entity Analytics Technology

ADDRESSES	NAMES	ADDITIONAL
4737 Cimarron Dr. Easton, MA 02334 1 Bourne St. Bolton, MA 01512 P.O. Box 12743 Clinton, MA 01510	Katherine D. Green Kate Mills-Green Katie Green Kate Mills Kate Green Kate M. Green	DOB: 12/13/71 Phone: (508)278-6019 (978)365-6631 (501)661-8044 Work: Zycast Int. Silverback Kinear

Enable New Applications *Leveraging System z Values for Master Data Management*

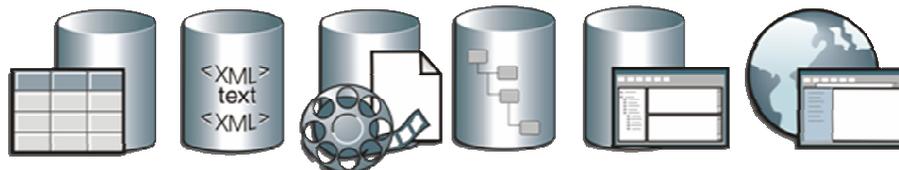


Existing Information Assets, Control, TCO, Service Level Quality...



Product...Customer...Supplier...Location...Employee...Consumer...Asset...Applicant...

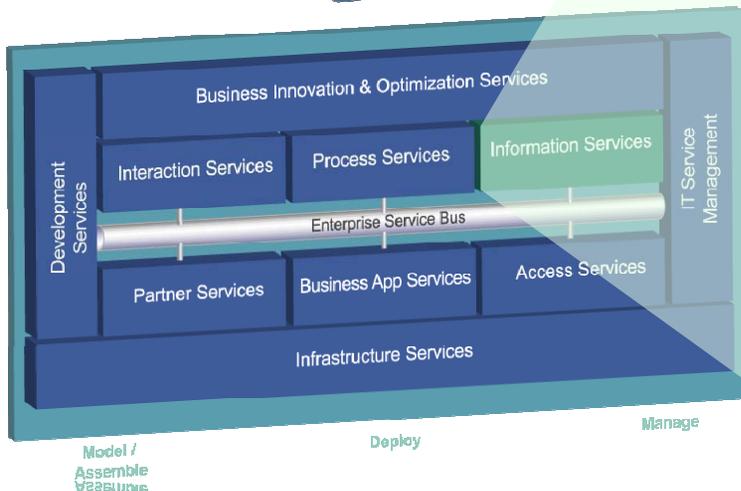
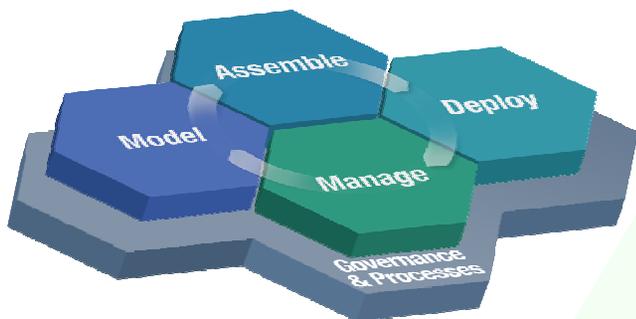
Master Data Solutions



IBM Information Management software

Unmatched Breadth and Depth of Capabilities

Information Delivered On Demand Based on Services Oriented Architecture



**#1, #2 in Share
450,000+ Clients**

- **Data Services**

- Data Servers, Warehouses, Tools...

- **Content & Discovery Services**

- Content Mgmt Svcs
- Discovery Services

**#1 in Share
13,000+ Clients**

- **Information Integration Services**

- Quality Services
- Transformation Services
- Federation Services
- Metadata Services

**#1 in Share
5,000+ Clients**

- **Business Information Accelerators**

- Master Data Management
- Entity Analytics
- Information Warehousing
- Industry Models

**Leading Space
1,000+ Clients**

Where You Put Your Information Matters

Flexible, Reliable, Scalable, Manageable, Affordable

- “It’s easier to manage the mainframe than a bunch of Windows servers. We have a smaller staff running the mainframe and those functions run 80% of our business.”

Bill Homa, CIO, Hannaford Brothers

- “What we are looking for is the flexibility to quickly respond to business changes. The mainframe will be a transaction engine that the insurance company’s business partners will access through SOA.”

John Campbell, Senior VP and CIO, American Modern Insurance Group

- “The industry tried, 'Let's everyone get off of the mainframe,' in the late 90s. It didn't work because there are many organizations that need that level of power. Mainframes have been used for applications insulated from the public security breaches of newer technologies. It's a natural to expose those transactions as services.”

Phil Murphy, Principal Analyst at Forrester Research

- “System z is clearly becoming a cornerstone of SOA strategy. This is a seismic shift from just a few years ago when the role of the mainframe had been reduced to ‘legacy’ applications.”

Feedback from zSummit attendee

Slides taken out

Addressing the spectrum of data serving needs

DB2 Everyplace	Cloudscape	U2	IDS	IMS	DB2
OLTP	OLTP	OLTP	OLTP	OLTP	OLTP & BI
Relational structure	Relational structure	Multi-value structure	Relational structure	Hierarchical structure	Relational & XML structure
Mobile Embedded	Intra-App / Single-App	Intra-App / Single-App	Intra-App / Single-App	Single / Multi-App	Single / Multi-App
Linux PalmOS Symbian	Java	AIX, etc. Linux Windows	AIX, etc. Linux Windows	z/OS	z/OS i5/OS AIX, etc. Linux Windows

Superior capabilities across a spectrum of requirements

Where you put your Data Matters....

Confidence in System z, z/OS and DB2 for z/OS

■ Integrity

- z/OS System Integrity Programming Standard – in writing
- System z integrity features that help protect data

■ High availability

- Designed with a 'Never go down' philosophy as opposed to a 'rapid reboot' philosophy
- Capability of providing concurrent HW maintenance and upgrades and rolling changes to DB2 for z/OS (in a Parallel Sysplex) can mean fewer database outages

■ Security

- Encryption, encryption, encryption – comprehensive solution
- MLS – merge data into single server and helps preserve data isolation.
- Helping address regulatory compliance with ability to establish centralized policies and procedures for privacy, security and audit

■ Systems and database management

DB2 for z/OS in:

- 25 of the top 25 WW banks*
- 23 of the top 25 US retailers**
- 9 of the top 10 global life/ health insurance providers***

Information is the Critical Business Issue

Globalization Integration Innovation

*Organizations highly effective at using information as an asset across the enterprise were **5 times** more likely to drive value creation than those who were poor at it...*

IBM Global CFO Survey, 2006

Structural complexity and a lack of integrated information are critical drivers of key business performance gaps...

IBM Global CFO survey, 2006

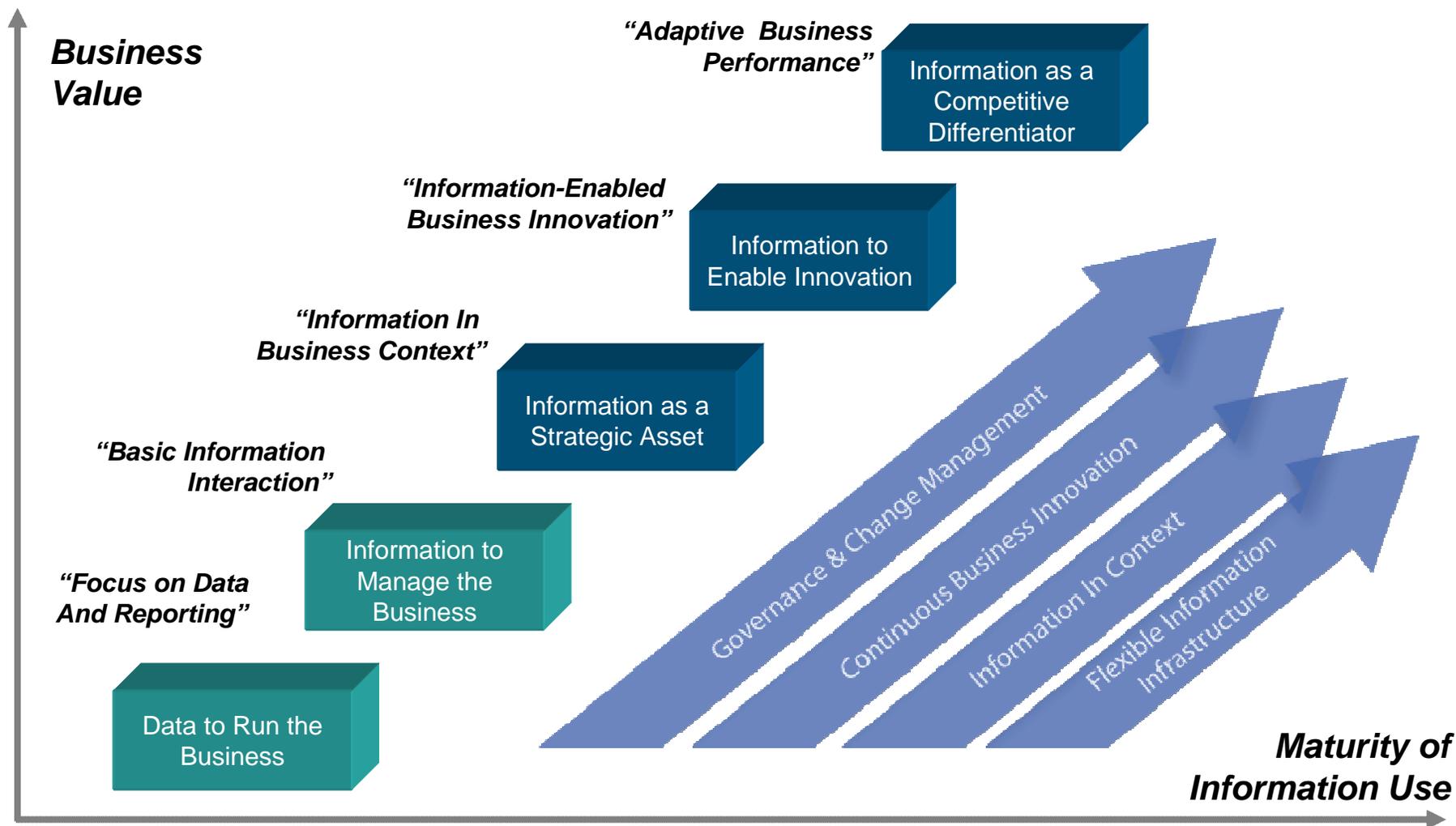
“We need data, not anecdotes – process data that reflects the contribution of a process to the business results rather than just how well run the process is.”

**Telecommunications Company, North America
IBM Chief Human Resources Officers Study, 2005**



Changing the Game with Information

Maturity Model Provides a Roadmap for Defining New Value



Achieving Business Flexibility and Agility

Separating Information & Process Enables Enterprise-wide Re-use



- ▶ *Business required an integrated view of customer information across multiple business units within the bank after merger*
- ▶ *Customer information stored across disparate environments - IBM ImagePlus, FileNet Image Services, Mobius....*

Key to Success

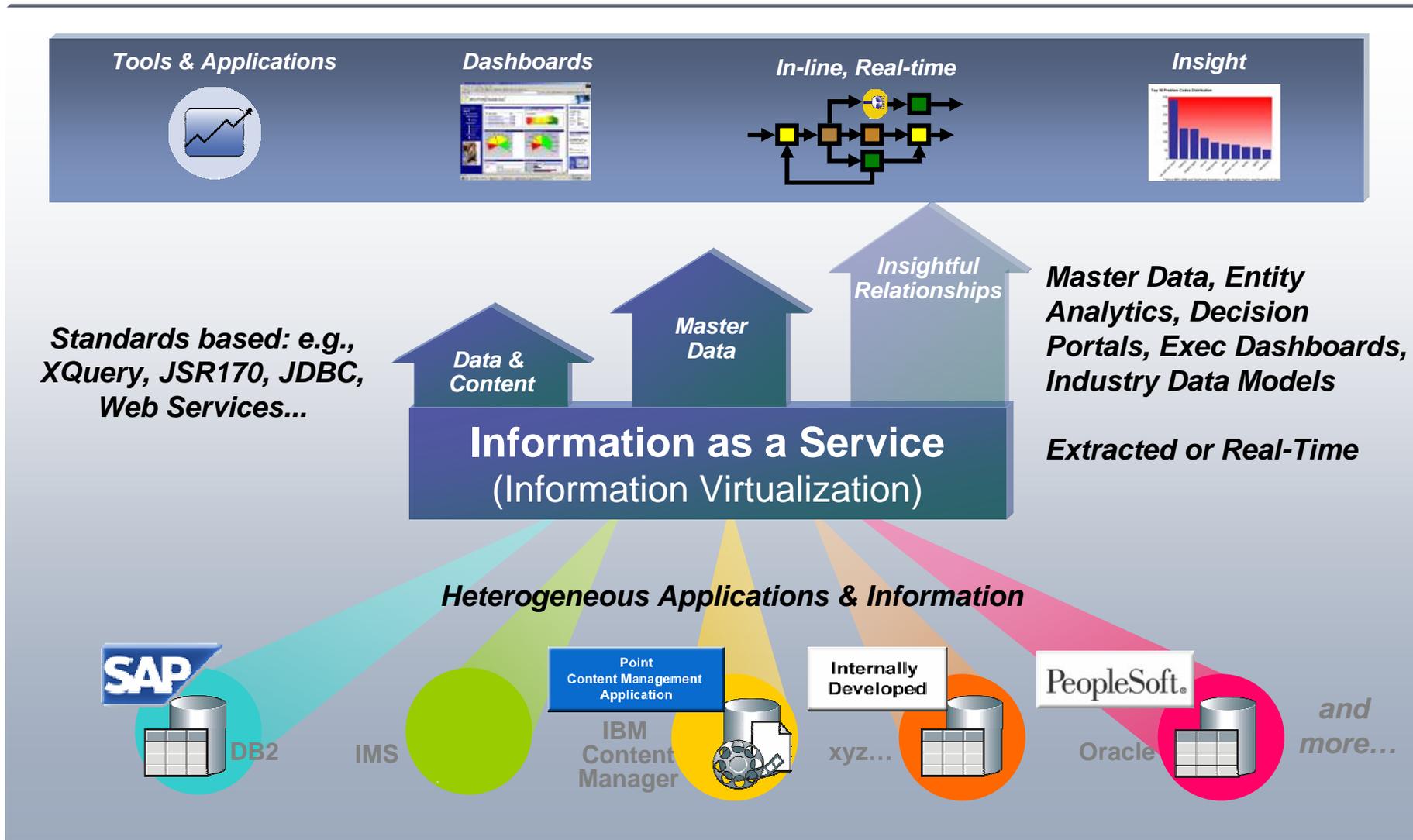
- Good Business Design - Separation of Information & Process

Result

- 50X increase in requests for content shows customers are being served better
- \$2.3 million savings in 2 years; 64% ROI
- \$1M savings for each new business unit needing a common view of the client

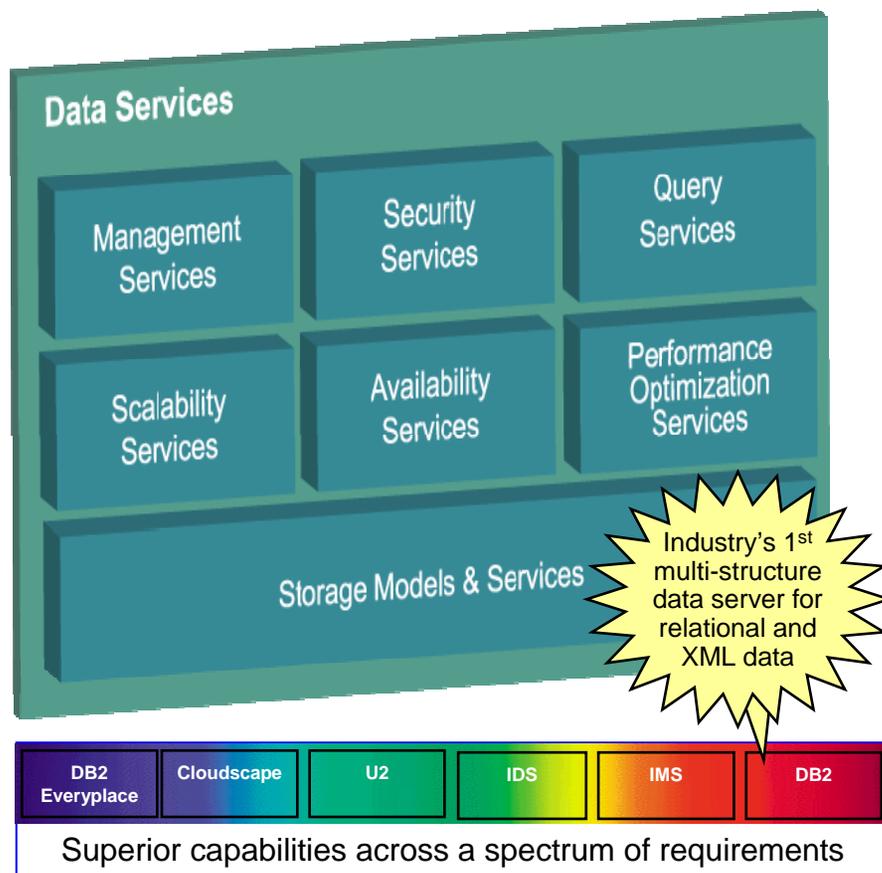
Information as a Service

Moving From a Project-Based to a Flexible Architecture (SOA)



Data Services

Secure and efficient management of structured information powering a wide range of innovative business solutions.



Required by every business application

- No business solution works without data
- Essential elements of an application platform
- Data service requirements span a broad spectrum

Protect most valuable business assets

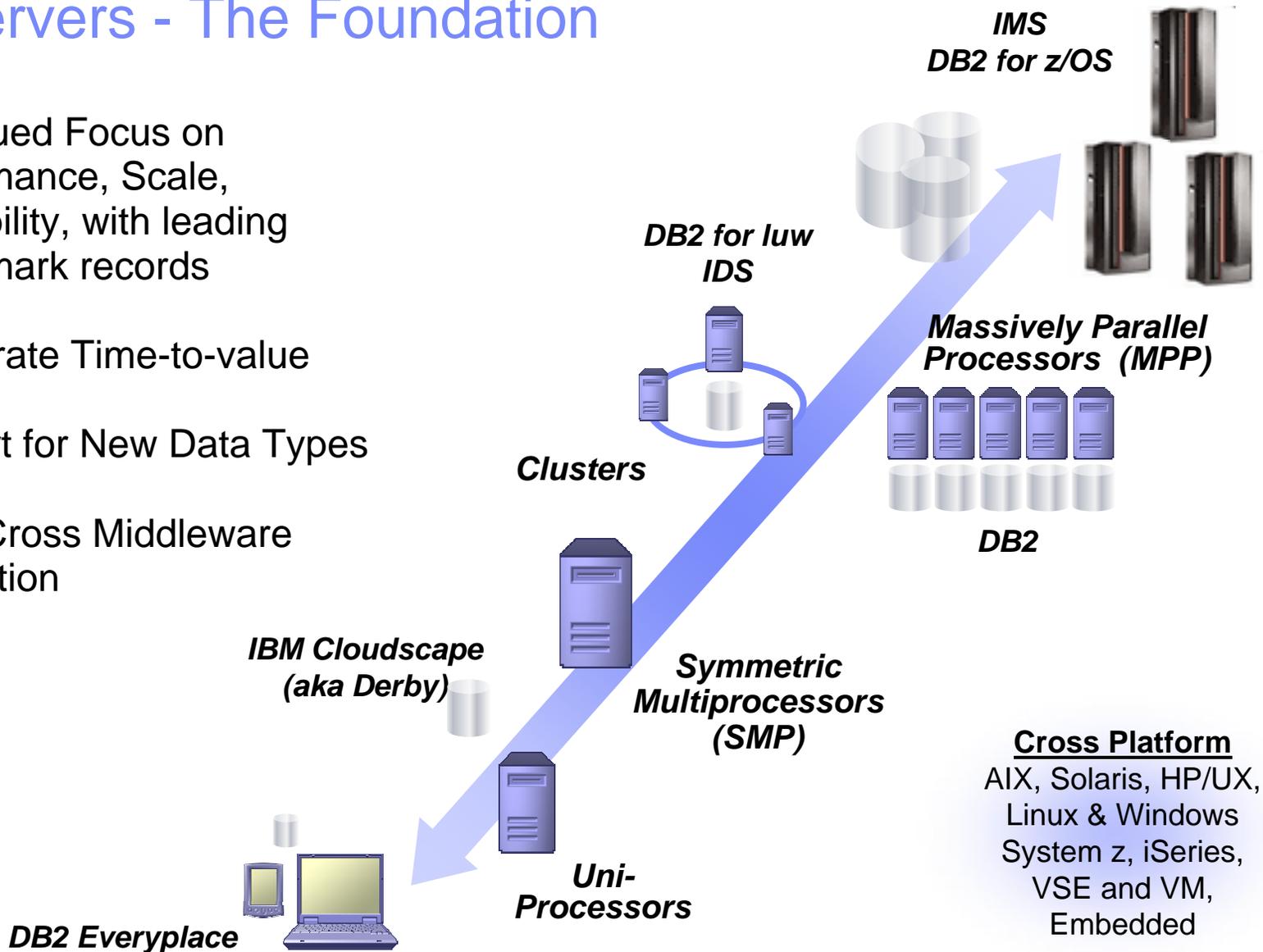
- e.g., Client, employee, product and financial data
- Data availability and performance impacts results
- Secure and private access affects brand value

A fundamental control point

- Not a commodity in most use cases
- Unique advantages for solution developers
- Cross platform integration = competitive advantage

Data Servers - The Foundation

- Continued Focus on Performance, Scale, Availability, with leading benchmark records
- Accelerate Time-to-value
- Support for New Data Types
- Deep Cross Middleware Integration



Addressing Customer Requirements

IMS is Ideal for Powering your On Demand Business

- ✓ Integration/Openness with Application Development and Connectivity
- ✓ Manageability with Autonomic Computing
- ✓ Scalability with Virtualization for Ultra-High Availability, Recovery, Performance, and Capacity



IMS V7

- Large DB
- High Avail. DB
- IMS Java
- Rapid Restart

IMS V8

- Extend DB Connectivity
- Enhance Sysplex Operations
- Simplify Install Process

IMS V9

- On-Line Reorg
- Enh Commands
- Reduced Sysgen Efforts
- Fast Path Enh
- DBRC Enh
- XML DB
- Integ IMS Connect

IMS X

- Systems Enh
- Operatins Enh
- DBRC Parallelism
- MSC Bandwidth
- Incremental Application Dynamic Resource Definition
- Enh Connectivity
- XQUERY
- Enh IMS SOAP

IMS Y

- Sysplex Enh
- Config Mgmt
- Enhanced Dynamic Resource Definition
- HALDB/OLR extensions
- Fast Path extensions
- XML DB enh
- Enh Connectivity

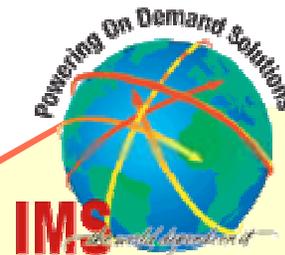
IMS Z

- Sysplex Availability Enhancements
- Autonomic Management Enhancements
- Enhanced Dynamic Resource Definition
- Config Mgmt Enh
- Enh Connectivity

- IMS Connect V1
- IMS Connect V2
- Enhance IMS Tools

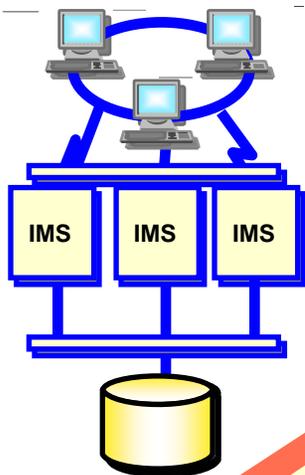
- Enh IMS Tools

IMS Version 9



Ideal for Driving On Demand Business

- ✓ Integration with Application Development and Connectivity
- ✓ Manageability
- ✓ Scalability in Performance, Capacity, Availability, Recovery



**Strategic Open Access
z/OS Enterprise Servers**

Benefits

- ✓ Enable Customer Growth
- ✓ Enhance Workload Balancing
- ✓ Increase Availability; Ease of Use
- ✓ Preserve Current Application Investment
- ✓ Enable New Applications

Enhancements

- Integration
 - ▶ Integrated Connect Function
 - ▶ Enhanced Security
 - ▶ XML data in IMS Databases
 - ▶ Broadened Java/XML Tooling
- Manageability
 - ▶ Eased Sysplex Manageability
 - ▶ Eased Serviceability/Usability
 - ▶ Simplified Install/Definition Process
 - ▶ Enh Systems/Data Mgmt Tools
- Scalability
 - ▶ Integrated HALDB Online Reorganization
 - ▶ Enhanced Recovery/Control
 - ▶ System Growth

A few of our partners supporting System z as the enterprise data server



DB2 V8 Exploitation of IBM zIIP can add value to database workloads

- Portions of the following DB2 for z/OS V8 workloads may benefit from zIIP*:

- ERP, CRM, Business Intelligence or other enterprise applications

- Via DRDA over a TCP/IP connection



**New Specialty
Engine**

- Data warehousing applications*

- Requests that utilize star schema parallel queries

- DB2 for z/OS V8 utilities*

- Internal DB2 utility functions used to maintain index maintenance structures

* The zIIP is designed so that a program can work with z/OS to have all or a portion of its enclave Service Request Block (SRB) work directed to the zIIP. The above types of DB2 V8 work are those executing in enclave SRBs, of which portions can be sent to the zIIP.

Content and Discovery Services

Improving the Automotive Quality Process

2 Add insight from mechanics reports and analysis of written comments

Customer's Complaints and Technician's Comments for 'FUEL PUMP' Reported Claims		
Repair Date	Customer complaint	Technician Comment
7/28/04	CUST SMELLED BURNING UNDER THE HOOD	RUSTY CONNECTION TO FUEL PUMP RELAY. WIRING HARNESS CORRODED
7/27/04	CUSTOMER STATES GET GAS ODOR INSIDE VEHICLE AFTER EVERY FILL UP:	VERIFIED CONCERN PERFORM FUEL SYSTEM LEAK TEST FOUND FUEL TANK LEAKING REPLACE FUEL TANK ASSEMBLY:
7/22/04	CAR JUST STALLED AND WOULD NOT START	FOUND SHORT IN HEADLIGHT W
7/19/04	CAR WILL NOT STARTAFTER DRIVING IN THE SNOW. CUST. BRINGING IN CAR FOR SECOND TIME	NEED TO CHANGE HARNESS RO
7/19/04	CUST REPORTS HEADLIGHTS FAIL	REPLACED FUEL PUMP AND FU WIRING HARNESS FOUND WHE HARNESS COVER. RECOMMEN HARNESS BUT WE DO NOT HAY SHOULD RESCHEDULE
7/17/04	C S THAT THE VEHICLE WOULD NOT START AFTER FUELING:	REPAIRED FAULTY HARNESS

Omnifind Warranty Claims Search

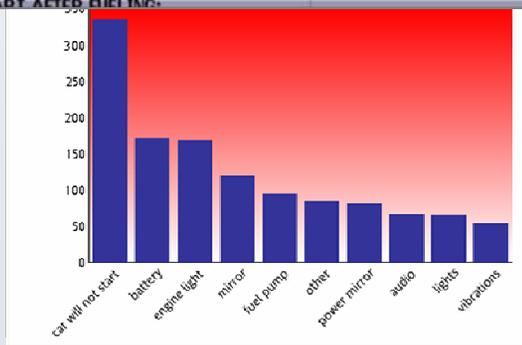
Search : **(Part:fuel pump) & wiring harness**

Total Results : **7**

Query Time : **47 ms**

Score	Results
98.74%	1. All-01098.txt file:///C:/QEWClaims/All-01098.txt All-01098.txt. REPLACED FUEL PUMP AND WIRING HARNESS
85.15%	2. All-01139.txt file:///C:/QEWClaims/All-01139.txt All-01139.txt. REPLACED FUEL PUMP AND FUEL FILTER FROM WIRING HARNESS FOUND WHEN I REMOVED THE HARNESS COVER. RECOMMEND REPLACING WIRING HARNESS DO NOT HAVE ACCESS TO PART. SHOULD RESCHEDULE
85.15%	3. All-01102.txt file:///C:/QEWClaims/All-01102.txt All-01102.txt. REPLACED FUEL PUMP AND FUEL FILTER

1 Report on actual problem codes

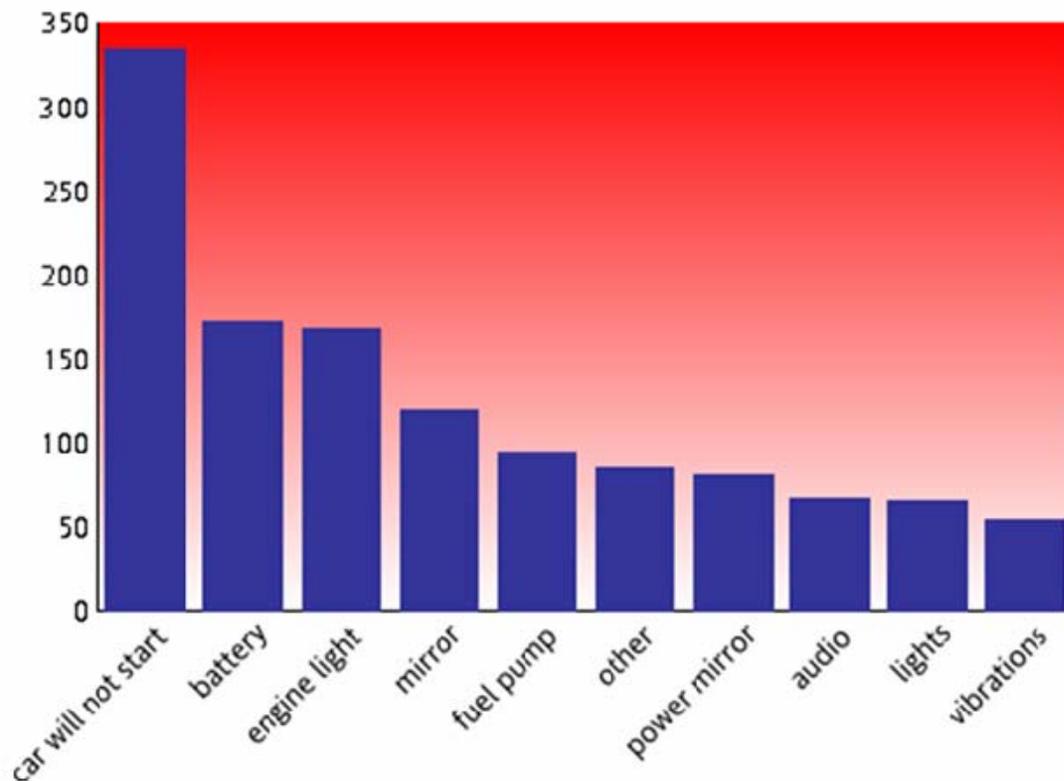


Content and Discovery Services

Improving the Automotive Quality Process

- 1 Report on actual problem codes

Top 10 Problem Codes Distribution



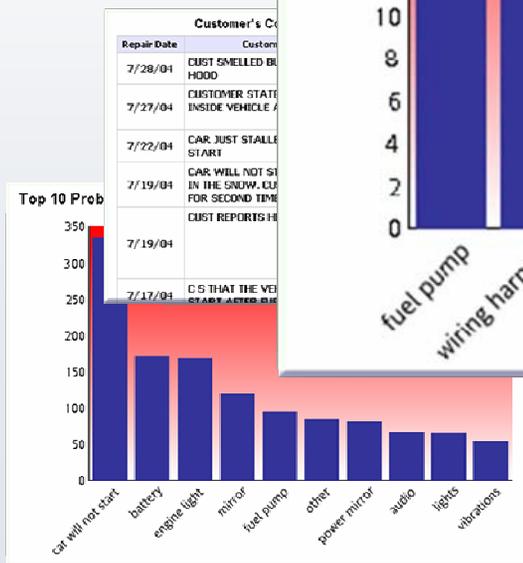
Content and Discovery Services

Improving the Automotive Quality Process

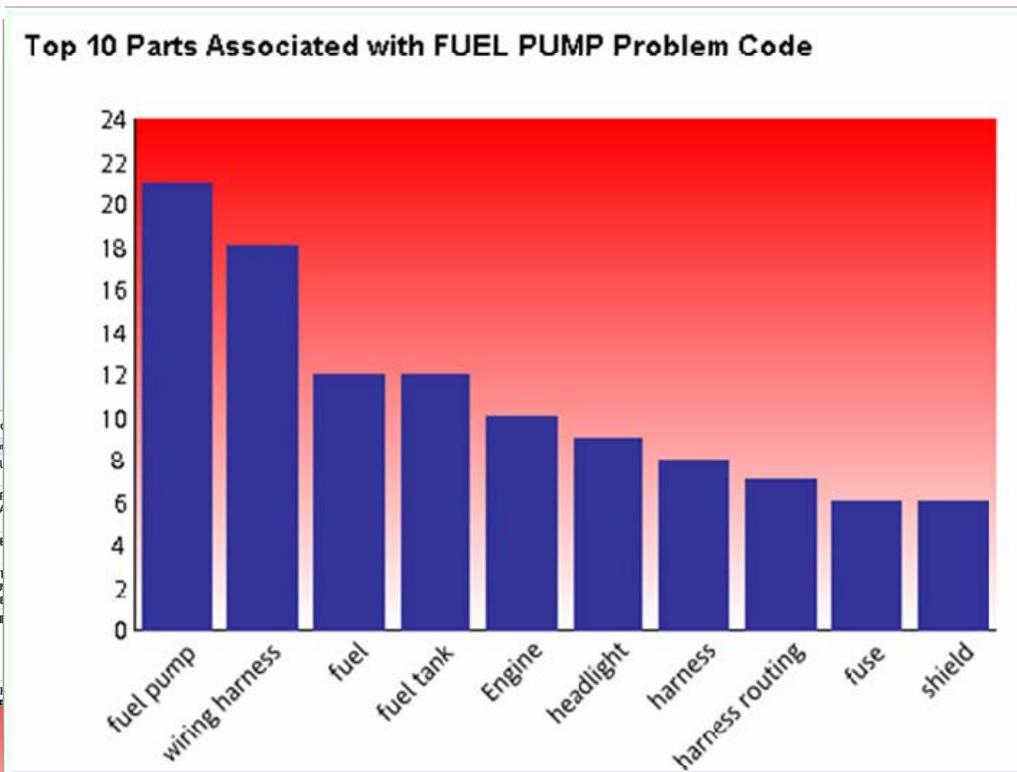
3 Relate problems to actual parts

2 Add insight from mechanics reports and analysis of written comments

1 Report on actual problem codes



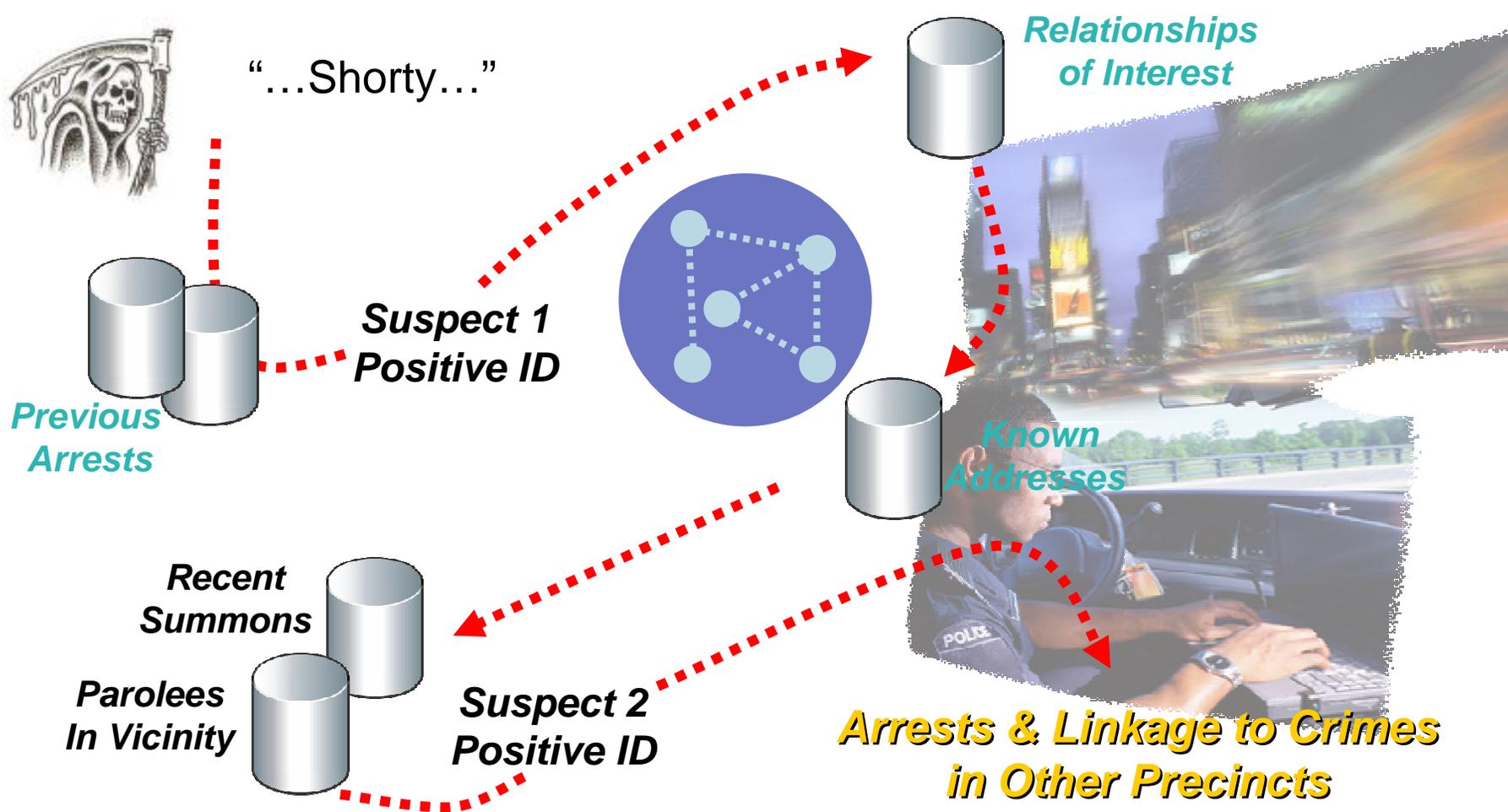
Repair Date	Customer's Comment
7/28/04	CUST SMELLED B... HOOD
7/27/04	CUSTOMER STATE INSIDE VEHICLE A...
7/22/04	CAR JUST STALLE START
7/19/04	CAR WILL NOT ST IN THE SNOW. CL FOR SECOND TIME
7/19/04	CUST REPORTS H...
7/17/04	C'S THAT THE VE STABLY AFTER B...



DO NOT HAVE ACCESS TO PART. SHOULD RESCHEDU
 85.13% 3. All-01102.txt file:///C:/QEWClaims/All-01102.txt
 All-01102.txt. REPLACED FUEL PUMP AND FUEL FILT

“...Comprehensive, highly relevant, instantaneous information... transforming the way we solve crimes...”

In context, in the hands of detectives, at the scene...



IBM Provides a Complete Portfolio of Offerings Based on Client & Internal Experiences

New Investment

65% more practitioners... adding to a **base of 15,000 practitioners** with relevant skills



New & Expanded Solution Portfolios



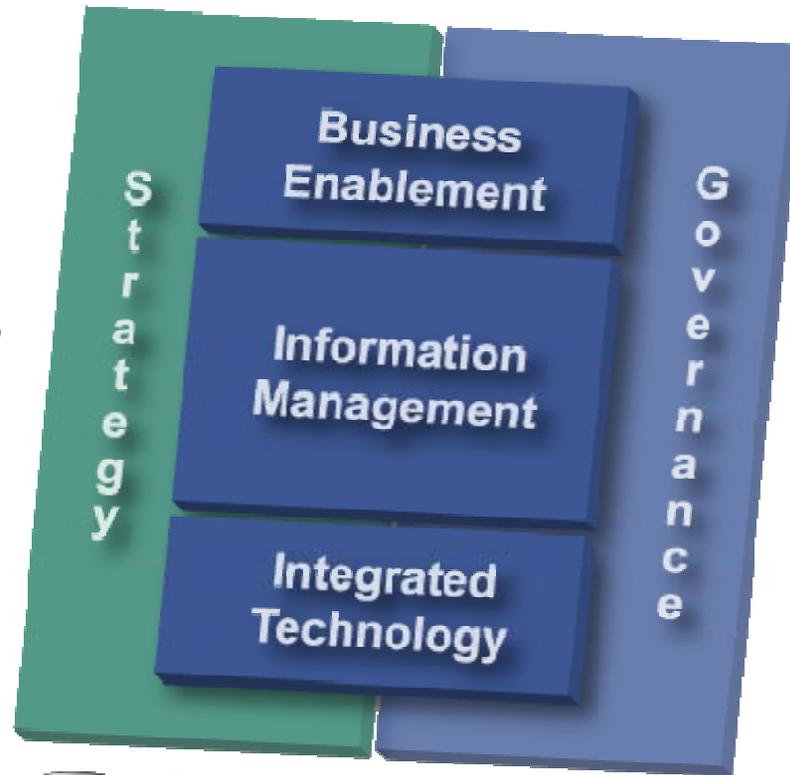
Delivering the Business Value of Information

A Holistic Offering Framework for Cross IBM Solutions

Globalization Integration Innovation

Integrated Approach

- Skills
- Methodology
- Information
- Technology

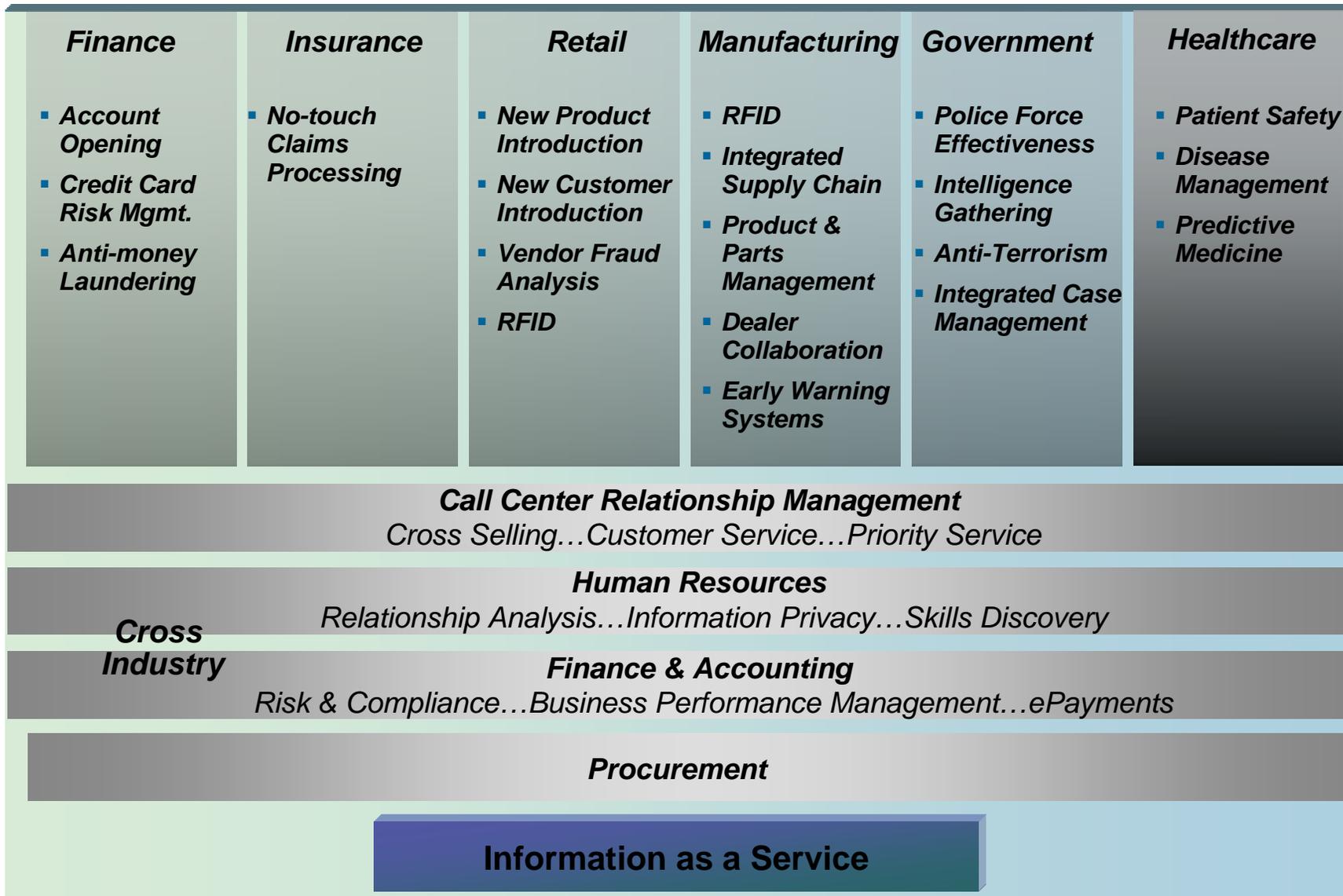


Experience-based

- Clients
- IBM Research
- IBM Internal



Industry Information Accelerators



Requirement is Holistic Reference Information Structured and Unstructured – From many sources

Web Hierarchy and Categories

Images

Marketing Benefits

Buyer Behavior Model

Cross-Sell & Up-sell

Marketing Database

- 1969 Denim Collection
- 1969 Collection for Men
 - [1969 original fit](#)
 - [1969 selvage jean jacket](#)
 - [1969 boot fit \(dusted\)](#)
 - [1969 range fit \(infused\)](#)
 - [1969 boot fit \(indigo arctic\)](#)
 - [1969 boot fit \(black crunch\)](#)
 - [1969 explorer shirt \(tinted black\)](#)
 - [1969 western shirt jacket](#)
 - [1969 boot fit \(panhandle\)](#)
 - [1969 western shirt \(dark indigo\) sale](#)



1969 original fit

1969 original fit

- The Limited Edition
- 1969 Collection:
- Premiere, Authentic GC
- Made from a premium denim fabric in a dark shade of indigo with very subtle whiskering and grinding.
- Sits just below waist. Low rise. Slim, straight leg.
- Five-pocket styling, button fly.
- 100% cotton. Machine wash. Made in USA.

SIZE: 30w x 32l - 36w x 32l

price: ~~\$98.00~~
now \$39.99

item: #191458

color: select one

size: select one
30w x 32l
32w x 32l
33w x 32l
34w x 32l

Promo. Price

[size charts](#)

Sizes

You'll also like:



[hand-knit zip sweater](#)
~~\$98.00~~
\$59.99



[hand-knit half zip sweater](#)
~~\$98.00~~
\$59.99

Supplier Database

Supplier Content Repository

Supplier Database

Shown in: rusted
[view larger image](#)

Finance System

Available colors:



Colors

Mfg. System

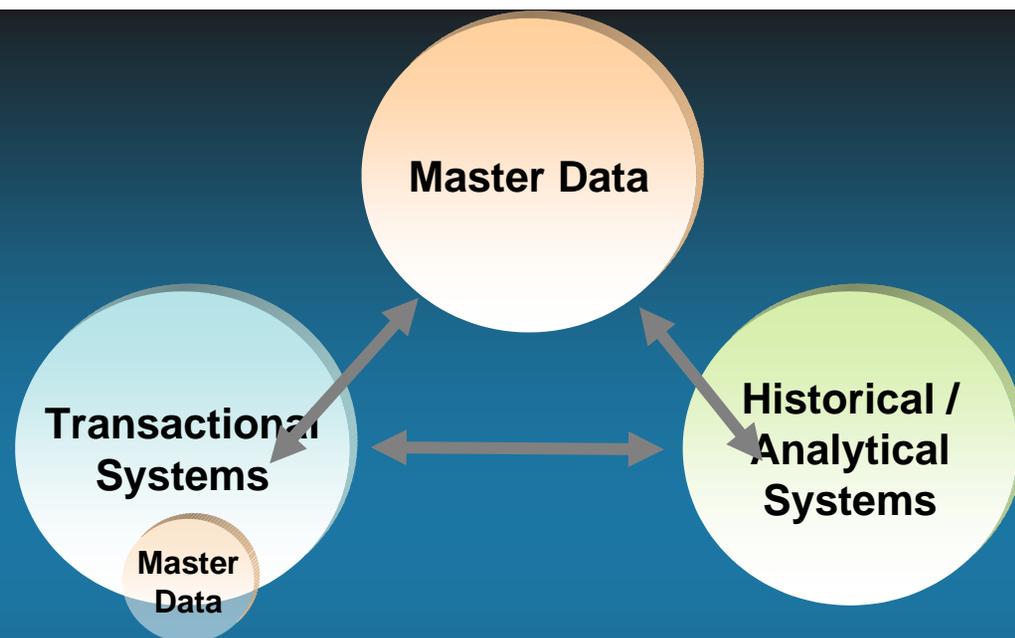
Master Data Management

Solving the Problem: The Closed-Loop Nature of the Information Lifecycle

Decouple master information from individual transaction applications

Ensure consistent master information across transactional and analytical systems

Address master data issues strategically, not just “after the fact” in the data warehouse



For All Types of Master Data

...products, organizations, locations, trading partners, employees, customers, consumers, citizens, assets, accounts, policies...

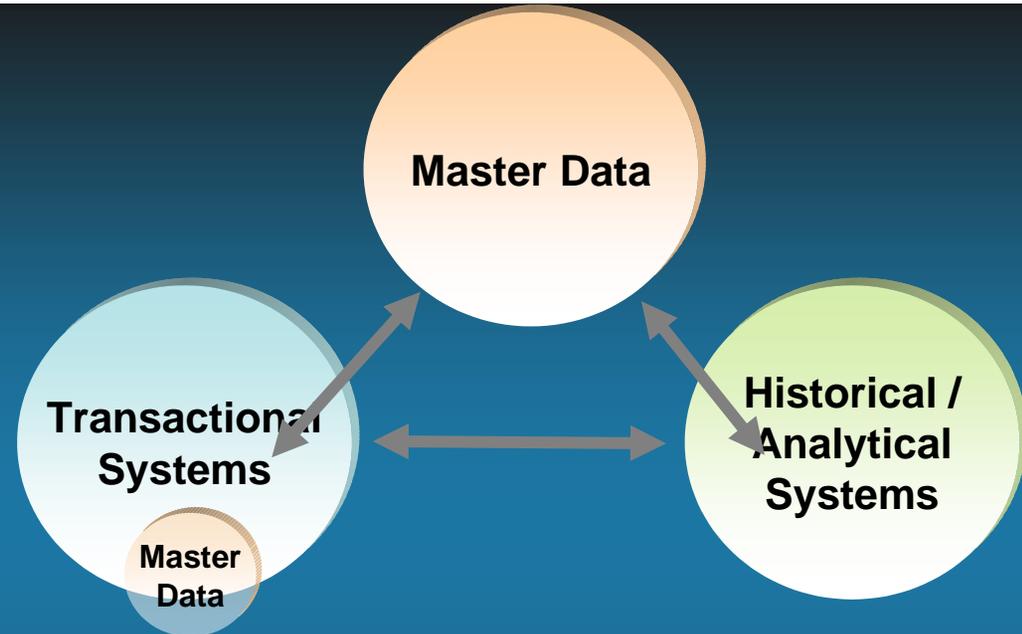
Master Data Management

Solving the Problem: The Closed-Loop Nature of the Information Lifecycle

Decouple master information from individual transactions

Master Data Management is a set of disciplines, technologies, and solutions used to create and maintain consistent, complete, contextual and accurate business data for all stakeholders (users, and applications) across and beyond the enterprise

warehouse



For All Types of Master Data

...products, organizations, locations, trading partners, employees, customers, consumers, citizens, assets, accounts, policies...

Financial Services Giant Achieves Extreme Scalability and Performance Using WebSphere Customer Center & DB2 for z/OS

Challenge

- High performance, highly scalable solution to drive improvements to customer relationship management

Solution

- WebSphere Customer Center
- WebSphere Application Server & Messaging
- DB2 for z/OS

Benefits

- Near-linear scalability of solution
- Increased performance & throughput



Implications

- Compelling Master Data Management solution for demanding, high performance environments
- Service Oriented Architecture key to scalable applications for customer data integration

Information Becomes a Strategic Asset

Timely & Accurate Information Fights Crime



- ▶ *Need for on-scene insight from billions of records across multiple police databases*
- ▶ *Correlate arrests, complaints, summonses, homicides, shootings, locations, 911 calls...*

Key to Success

- Timely Delivery of Structured and Unstructured Information

Result

- Timeliness means the difference between life & death
 - Information reaches detectives within minutes, instead of days or weeks
- Rapid trend analysis improves resource deployment
- Rapid repeat offender identification

Business need

- Implement Global Data Synchronization and Trading Partner Portal for Carrefour's 30,000 suppliers
- Integrate between Carrefour's legacy systems for a single source of product information management
- Focus on implementation roll-outs in France, Spain and Belgium

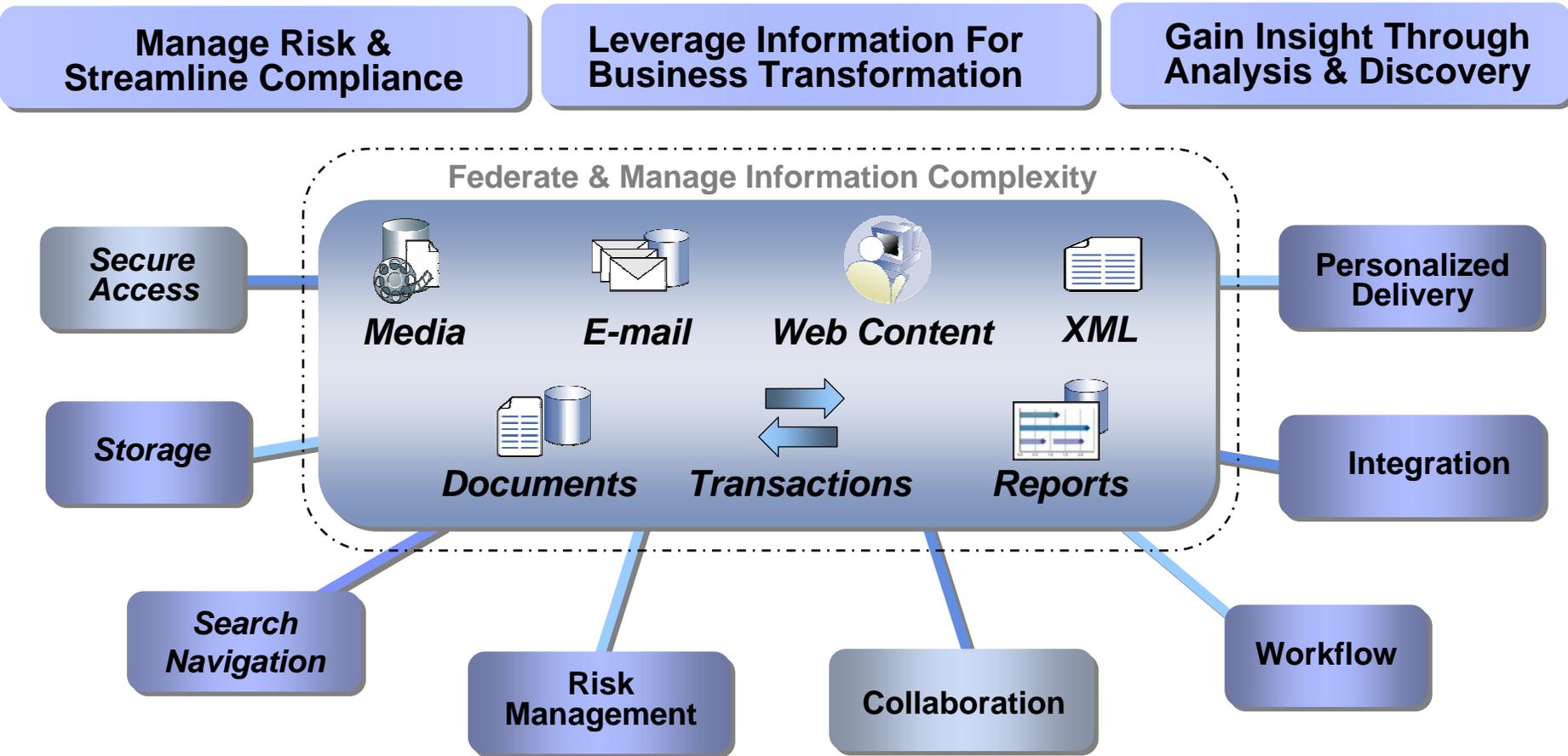
Master Data Management System: IBM WebSphere Product Center

- Global product information management system
- Improve product information consistency through a central repository
- Improve the organizational handling of product information through workflow



IBM Content Management & Discovery Essentials

With Key Offerings to Address Specific Customer Needs



Open, Integrated Infrastructure

Access To Multiple Repositories

Manage All Content Types

Information Becomes a Strategic Asset

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Baldor Electric Company



Challenge

Core SAP R/3 Enterprise Resource Planning (ERP) software was spread across multiple systems, creating an environment that was increasingly complex and expensive to support.

Solution

- Baldor selected IBM DB2 for z/OS V8 and DB2 Connect Application Server Edition V8.2.
- They consolidated their SAP servers to a single machine, allowing them to quickly assign and reassign resources to support user demand.
- Weighing heavily in the decision: no mainframe downtime since 1997

Value

- Near continuous availability
- Perform regular systems management activities with server still in production
- Reduced cost & complexity
- IT spending reduced from 1.7% to 1.2% of sales