

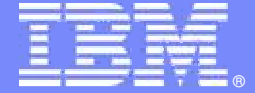


*The future runs on System
Z*

Dan Wardman

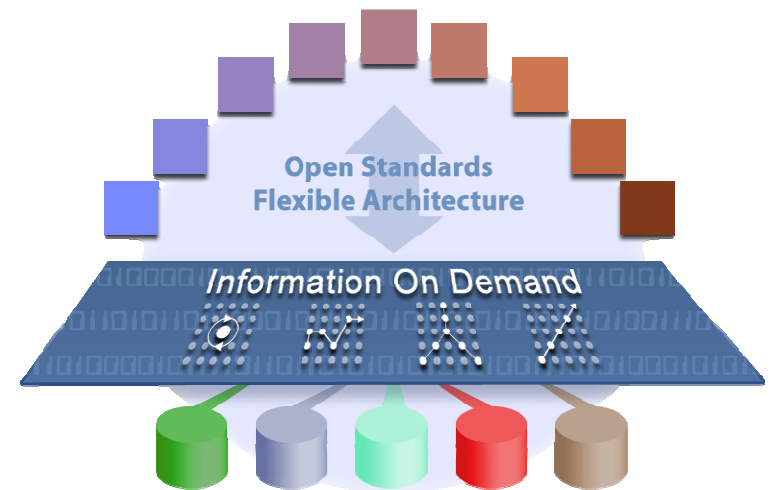
*Vice President, Information Management
Mainframe Software, Software Group*





Information On Demand

Unlocking the Business Value of Information for Competitive Advantage



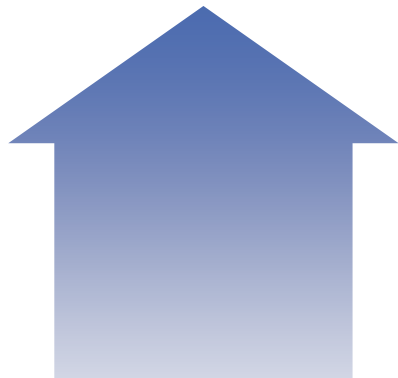
Information On Demand

Unlocking the Business Value of Information for Competitive Advantage

Customer & Product Profitability *Financial Risk Insight* *Workforce Optimization* *Dynamic Supply Chain* *Multi-Channel Marketing*

Business Optimization

Better Business Outcomes



Plan, understand and optimize business performance



Establish, Govern, and Deliver Trusted Information

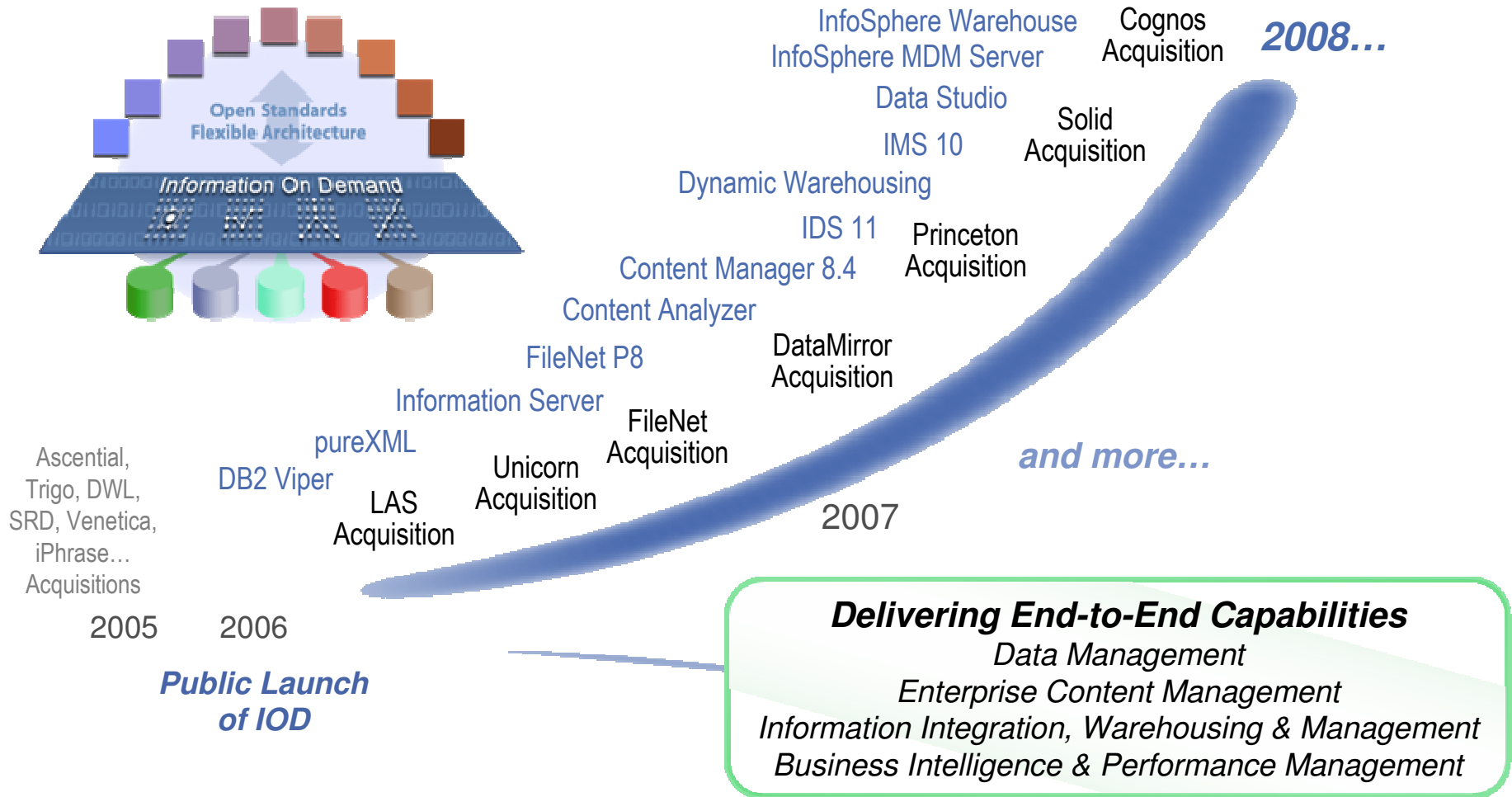
Flexible Architecture for Leveraging Existing Investments



Manage information over its lifetime and Optimize content-based processes

Information On Demand

Acquisitions and Continued Innovation Drive Increased Value



Information On Demand

Investment, Innovation and Deliveries Drive New Capabilities for System z

Unlocking the Business Value of Information
for Competitive Advantage



Cognos 8 BI for System z

Data Studio pureQuery
for z/OS

InfoSphere MDM Server
for System z

Optim/Data Governance
for System z

Information Server
for System z

Content
Manager 8.4

IMS 10

DB2 9
for z/OS

2008...

Cognos
Acquisition

Princeton
Acquisition

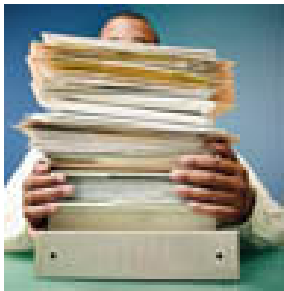
and more...

Ascential,
& DWL
Acquisitions
2005

FileNet
Acquisition
2006

2007

Are you effectively managing data over its lifetime?



“...Information is growing like crazy, we need to get control of it...”

- **Ensure accessibility, retention and compliance**
- **Reduce cost of deploying and managing data**



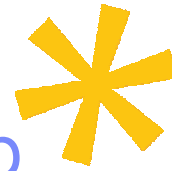
Information Management Software

- Database Management servers
- Integrated Data Management tools and solutions

Supporting Capabilities

- Storage Management Solutions
- Systems Management & Security
- Data management consulting & implementation services

IMS Roadmap



Most new releases every 2-3 years

- ▶ IMS 9 GA October 2004, IMS 8 GA October 2002
- ▶ IMS 10 QPP started Jan 2007
- ▶ IMS 10 GA October 2007
- ▶ IMS 10+1 development/test well underway
- ▶ IMS 10+2 in design phase

Two current supported field releases

- ▶ N-2 release out of service 1 year after current release GA

Key focus areas for new versions

- ▶ Scalability, performance, throughput, RAS

IMS 10

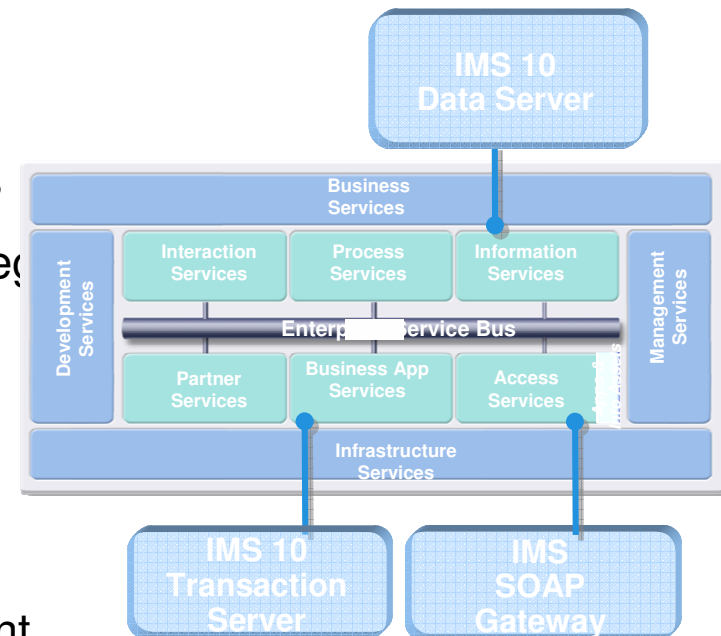
Reduce management cost and accelerate use of data

Accelerate Integration in a Service Oriented Architecture

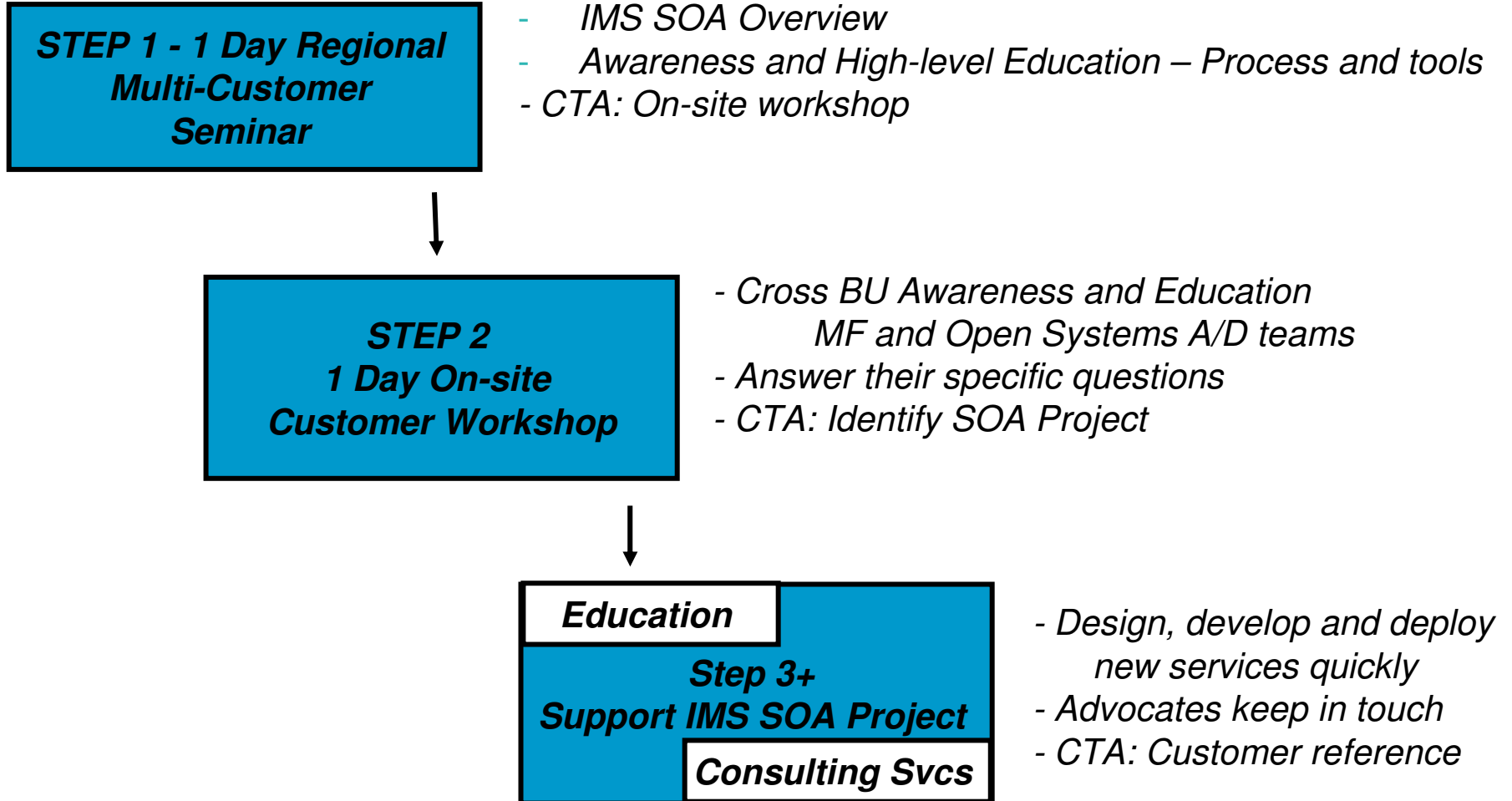
- Enable IMS as client and server to participate in SOA environments
- XQuery support and broader XML and Java Tools
- Reusable IMS services for SOA business flexibility
- Easier to expose IMS transactions as web services
- Application Connectivity - Reduced time/cost to integrate applications

Reduce operational costs

- Simplified development reduces time to value
- Enhanced commands ease operations management
- IMS tools suite enhanced and ready for IMS 10



IMS SOA Program – 3 Steps



Announcing IMS 11

Increased business flexibility for SOA environments

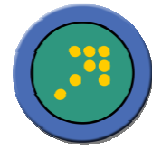
- Open Database Support
 - ▶ Allows any application on any platform to access IMS data directly and transparently
- Enhanced Application Development Tooling
 - ▶ Easier application development and modernization
- Autonomic Computing Capabilities
 - ▶ Relieve skill constraints
- Raising the Performance Bar Again
 - ▶ Extreme performance with greater than 22,000 transactions/second



DB2 9 for z/OS

Addressing Corporate Data Goals

<p>SOA Enablement</p>	<ul style="list-style-type: none"> • pureXML • Optimistic locking for WebSphere • LOB performance, usability
<p>Dynamic Warehousing</p>	<ul style="list-style-type: none"> • Many SQL improvements • Dynamic index ANDing • Histogram statistics • New built-in OLAP expressions • Optimization Service Center
<p>Simplification, Reduced TCO</p>	<ul style="list-style-type: none"> • Index compression • Partition By Growth tables • Cloned tables • Volume based backup / recovery
<p>Workload Consolidation</p>	<ul style="list-style-type: none"> • More online schema changes • Online REBUILD INDEX • Trusted context and ROLES



DB2 for z/OS with the z10 and z/OS

System z innovation, raising the IT bar and taking System z to the next level of...

... scalability and performance

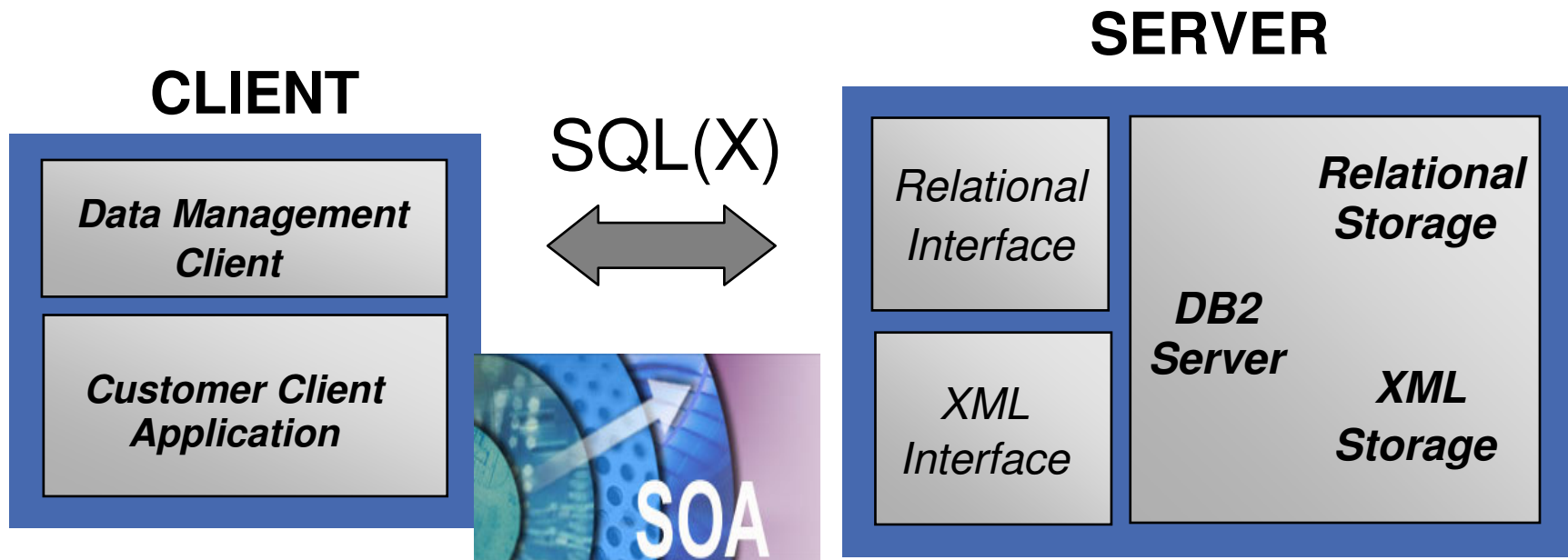
- z10 CPUs, memory, I/O and network bandwidth means:
 - Significantly improved SQL performance
 - Improved connectivity for remote apps, especially batch inserts for large queries
- Reduced allocation and catalog overhead
- Infiniband CF links, HiperDispatch
- More efficient disk usage minimizes disk constraints
- More efficient XML parsing
 - Up to 30% performance improvement
 - Up to 100% XML parsing on zIIP / zAAP
- Hash DSAB Searches brings faster startup/restart
- Basic HyperSwap
- zIIP assisted XRC





XML Capabilities Inside the Engine pureXML™

Performance, Performance, Performance



Native storage Schema Index Functions Utilities

DB2 X for z/OS At a Glance

Addressing Corporate Data Goals

Application Enablement	<ul style="list-style-type: none">• Temporal queries• pureXML enhancements• Generated columns• Last Committed reads• SQL improvements that simplify porting
RAS, Performance, Scalability, Security	<ul style="list-style-type: none">• Wide range of performance improvements• More online schema changes• Catalog restructure for improved concurrency• Fine grained access control• Hash access to data• New DBA privileges with finer granularity
Simplification, Reduced TCO	<ul style="list-style-type: none">• Full 64-bit SQL runtime• Auto stats• Data compression on the fly• Query stability enhancements• Reduced need for REORG• Utilities enhancements
Dynamic Warehousing	<ul style="list-style-type: none">• Moving sum, moving average• Many query optimization improvements• Query parallelism improvements• Advanced query acceleration

DB2 for z/OS Value Unit Edition - OVERVIEW

- **Drive Net New Workload Growth on new and existing DB2 for z/OS**
 - ▶ Offering DB2 for z/OS as OTC for qualified workloads
 - Available today for DB2 V8 and DB2 V9
 - ▶ Net new workloads limited to those that qualify for zNALC
 - For example: commercial packaged applications, data warehouses, and WebSphere applications running in a partition, machine, or sysplex
 - ▶ Available for on a standalone machine or restricted LPAR.
- **Strengthens System z's role as a cornerstone for key business initiatives**
 - ▶ Service-oriented architecture (SOA), Web-based applications, and pureXML; Data warehousing and operational business intelligence (BI); and Commercial (packaged) applications such as SAP, PeopleSoft, and Siebel.

IMS Tools Solution Portfolio

- Data Encryption for IMS and DB2 DBs
- IMS Database Repair Facility
- IMS HALDB Conversion and Maint. Aid
- IMS HD Compression-Extended
- IMS Library Integrity Utilities
- IMS Online Reorganization Facility
- IMS Parameter Manager
- IMS Sequential Randomizer Generator
- IMS Sysplex Manager
- IMS Tools Knowledge Base

- 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
- IMS Database Control Suite

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

End to End Management

Data Base Administration

Utility Management

Recovery Management

IMS TOOLS

Performance Management

TM Management

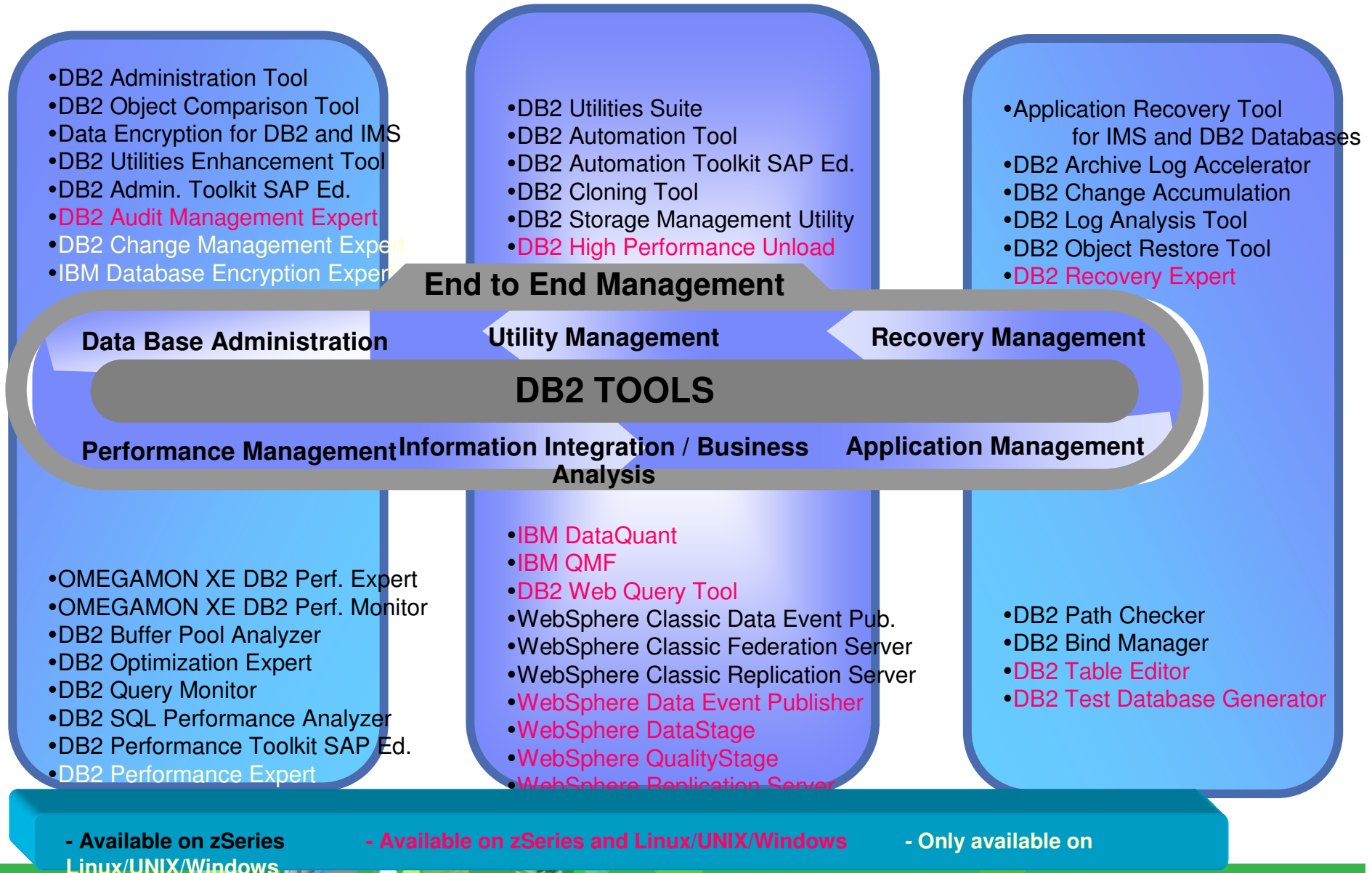
Application Management

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

- IMS Command Control Facility
- IMS ETO Support
- IMS HP Sysgen Tools
- IMS Queue Control Facility

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

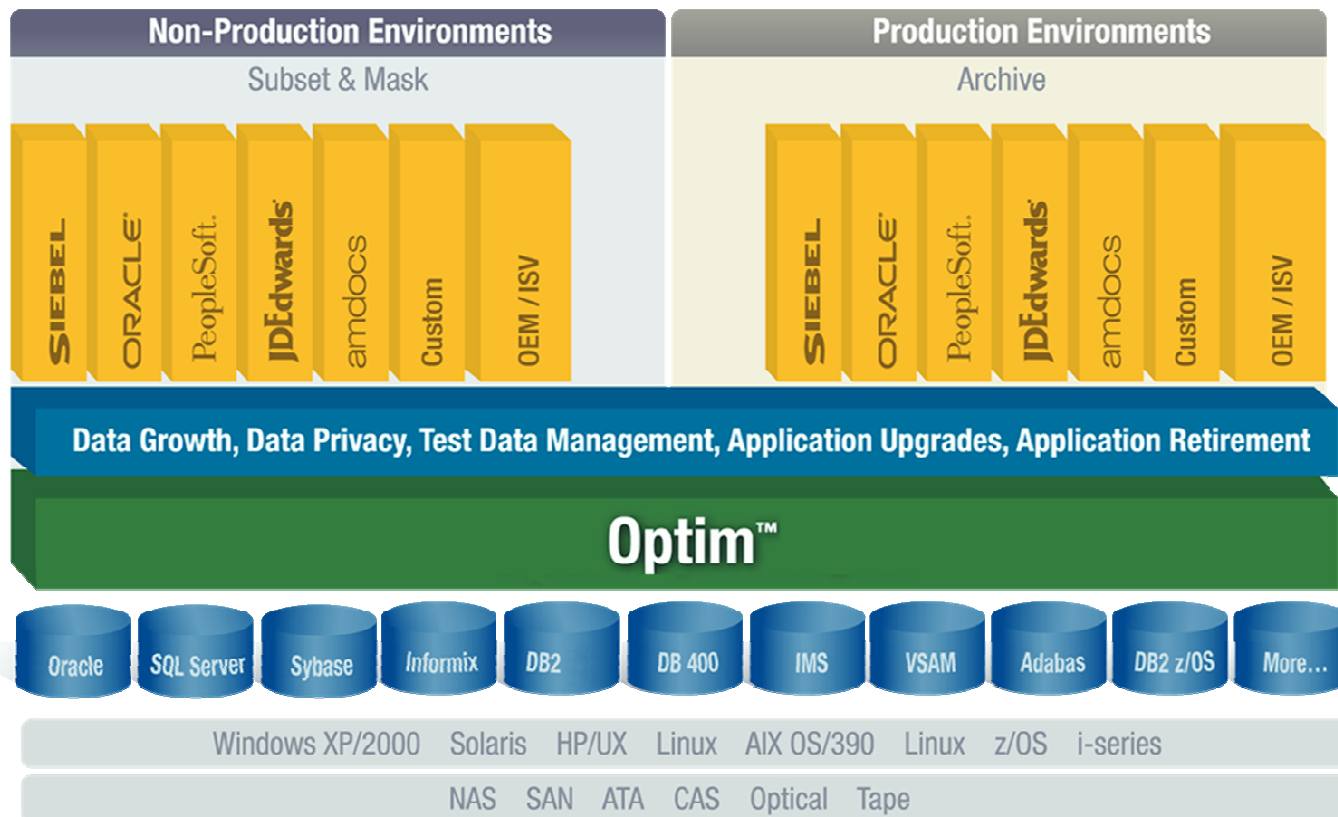
DB2 Tools Solution Portfolio



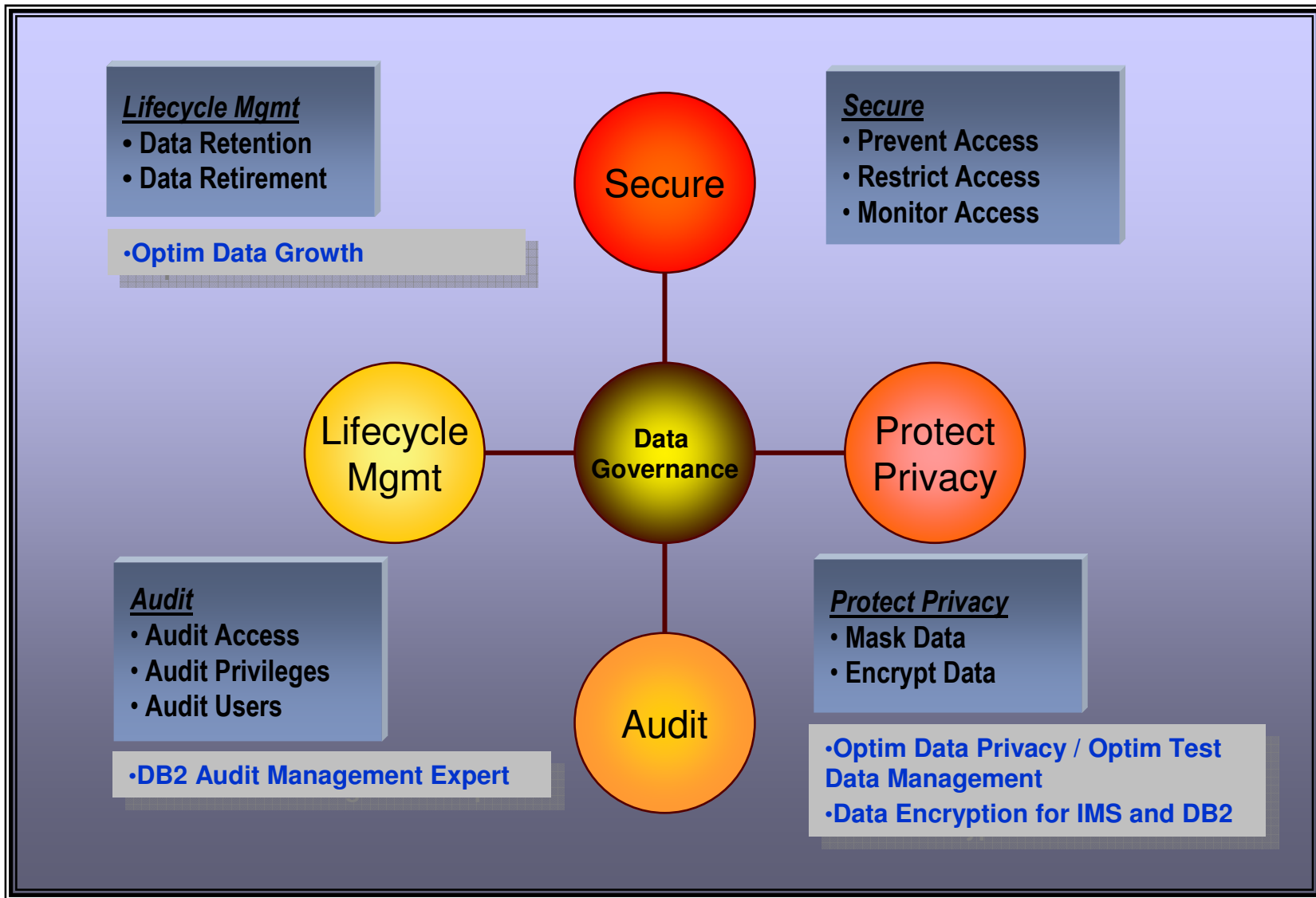
IBM Optim™

Innovation to manage the lifecycle of data

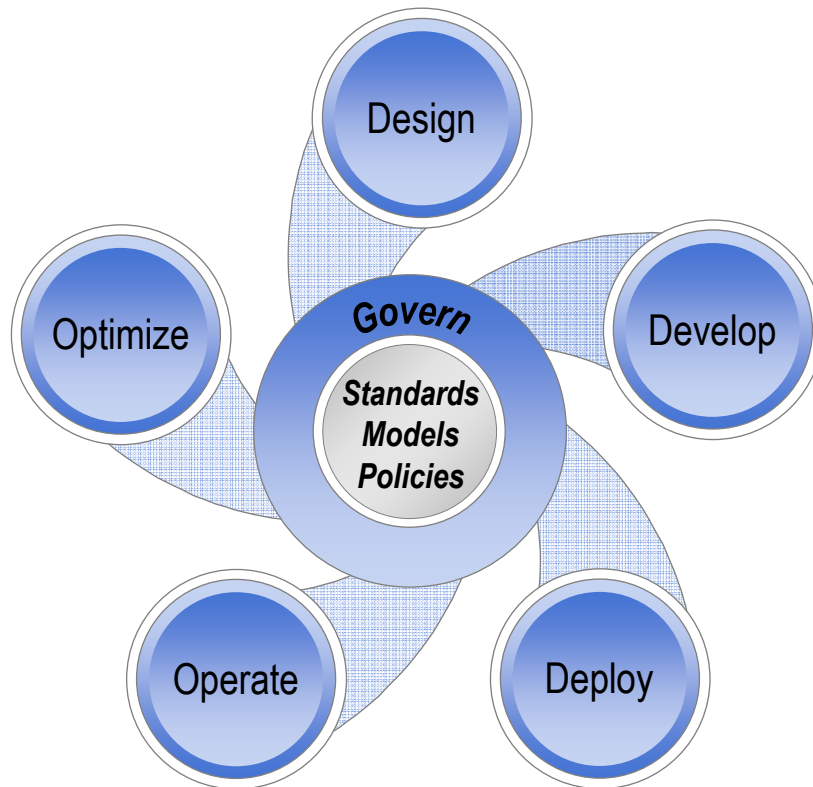
Scalable solution provides a central point to deploy policies and to extract, store, port, and protect application data



IBM Data Governance Software



Manage data across the lifespan - from design to delete



- The depth and breadth for virtually every business requirement
 - ▶ For information on System z and nearly every other platform
- Exceed business requirements for the toughest IT challenges such as Data Governance, Data Warehousing, Performance Management and more
- Deliver increased information availability with improved manageability

American Family Insurance leveraged IBM's integrated System z solutions to surpass internal and external audit and compliance requirements – while decreasing IT costs 20%.



IBM Data Studio

Improved Java data access



pureQuery for z/OS provides high-performance Java data access and simplifies development and management of applications that access data

Optimizing Java application database development and deployment

- ▶ Unrivaled monitoring and insight of executing SQL statements
- ▶ Integrated tools, APIs, and runtime
- ▶ Flexible deployment options with Static SQL support
- ▶ Speeds the development of high-quality applications by 25 to 50 percent
- ▶ Reduces developments costs by 50 percent



“pureQuery encourages developers to explore how workload is being executed without the performance and usability challenges with other tools.”

Kevin Campbell, Application Architect, Univar USA

Can you Optimize Content-based Operational & Compliance Processes

"... We need a better way to incorporate information into our business processes..."



- **Provide application optimization**
- **Transform paper-based processes**

Information Management Software

- Content Driven Process Optimization
- Enterprise Content Management
- Records Management & Compliance
- Content Classification & Search

Supporting Capabilities

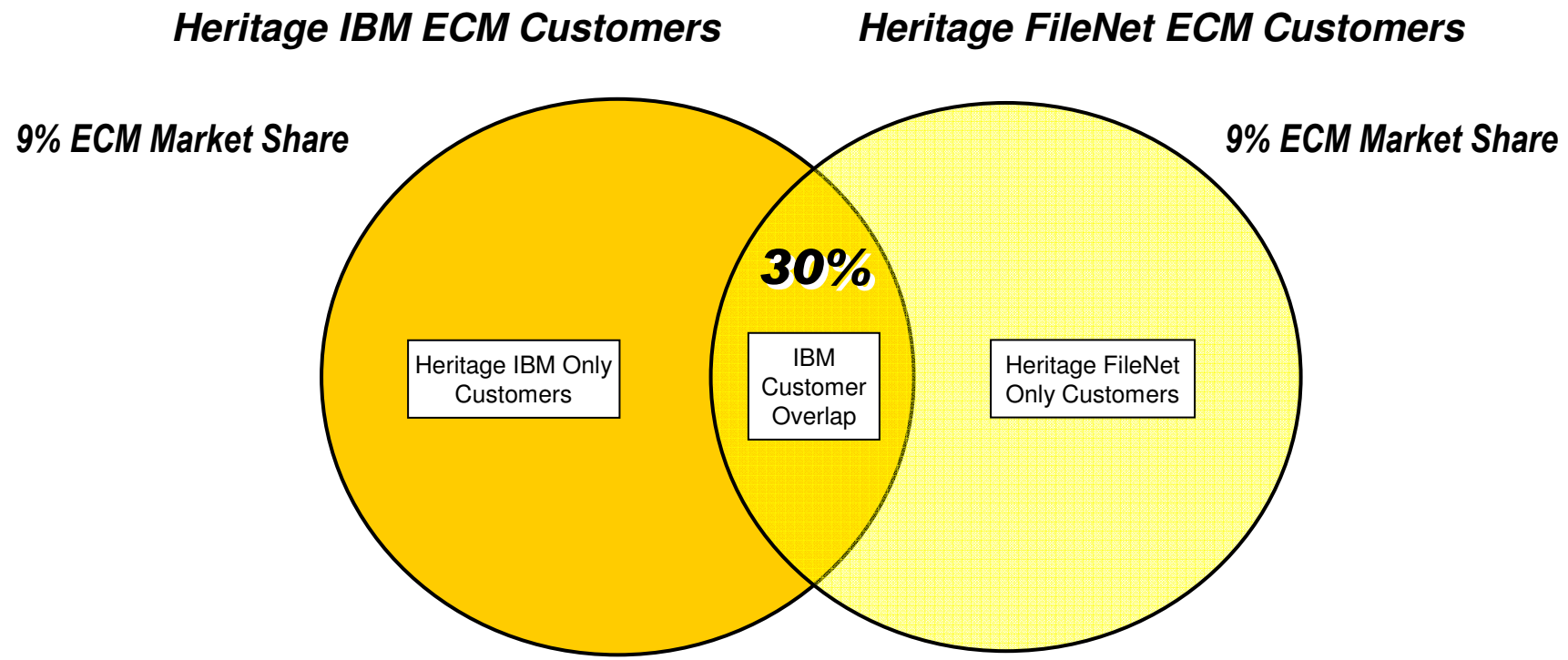
- SOA Infrastructure
- Transaction Processing
- Portals & Collaboration Tools
- Application Development Tools



Our ECM Strategy supports our Installed Customer Base

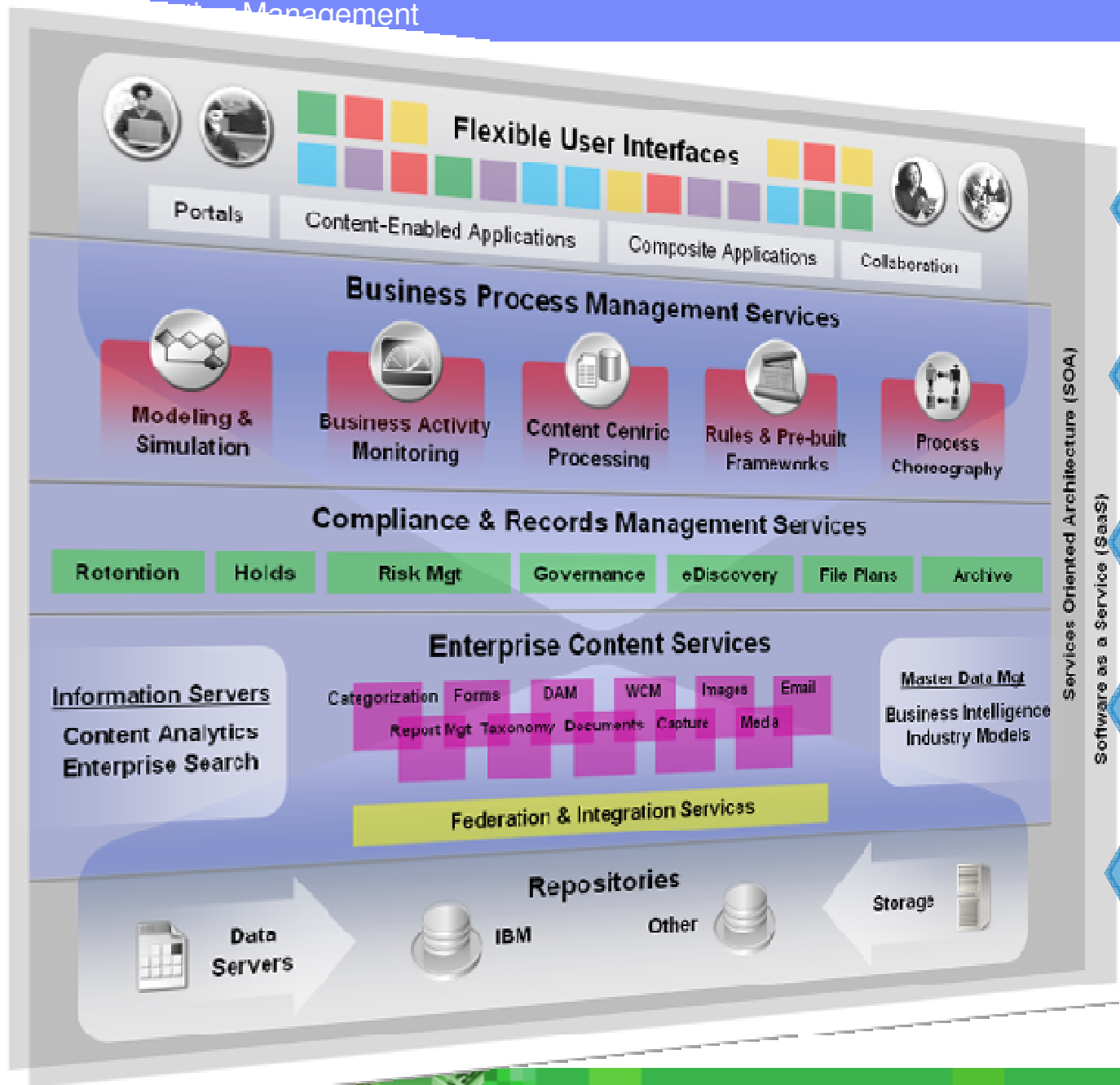
- **Significant Installed Customer Base that have both CM v8 and P8**
- **Significant Customer Investments across CM v8 and P8**
- **Existing Customers are critical to IBM ECM's success**
- **Extend Customer Investments by introducing new integrated capability**

Combined ECM Customer Base



IBM ECM Product Vision

Management



Services Oriented Architecture (SOA)
Software as a Service (SaaS)

Pervasive
Persuasive

Business
Agility

Enterprise
Compliance

Active
Content

Content
Anywhere

ECM Portfolio – Support of all Repositories

- **Preserve and extend existing content investments**
- **Scalability to billions of objects**
- **Performance to meet user SLA's**
- **Reliability for business continuity**

Repositories



IBM CM



IBM On Demand



IBM FileNet

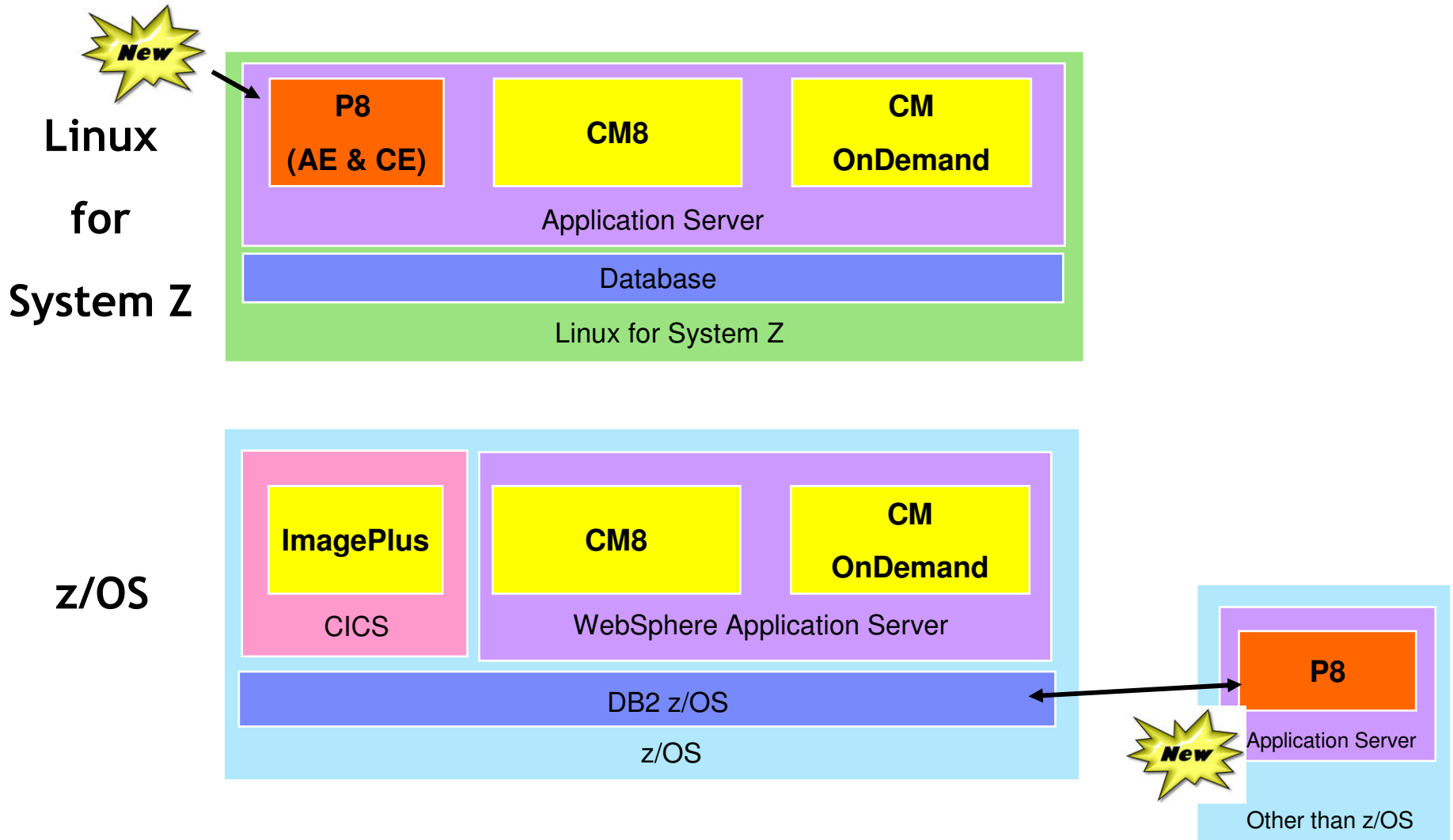


SharePoint



Other

ECM Products on System z



CM8 and OD on z/OS

- Both operate with WebSphere WAS and DB2 z/OS
- Both support content storage via DFSMS/OAM
 - ▶ Specialized storage subsystem unique to z/OS
 - ▶ Provides
 - hierarchical storage management
 - support for high performance channel attached storage
 - Support for secondary storage
 - Disk, tape, and virtual tape storage options
 - ▶ Same storage subsystem used in ImagePlus
- Both also support content storage via TSM
 - ▶ To a TSM server operating
 - on z/OS, or
 - Remote, on a distributed platform
 - ▶ This support permits operation with network attached DR550

Linux for System Z

- CM8 and OD are supported on Linux for System Z as on other Linux platforms. Exceptions are
 - ▶ Report Distribution
 - ▶ OD PDF Indexer
 - ▶ OD Web Administration
- P8 AE and CE are supported on Linux for Systems Z. Key exceptions are
 - ▶ P8 BPM, BPF, and portlets
 - ▶ P8 CE 4.5 Enterprise Manager
 - ▶ P8 RM tools

Can you Establish, Govern & Deliver Trusted Information

"...Information about our clients and products is fragmented and inconsistent across dozens of applications..."



- **Integrate, reconcile, transform and analyze data and content, regardless of type or complexity**
- **Deliver trusted information in context**



Information Management Software

- Information Integration
- Data Warehousing
- Master Data Management

Supporting Capabilities

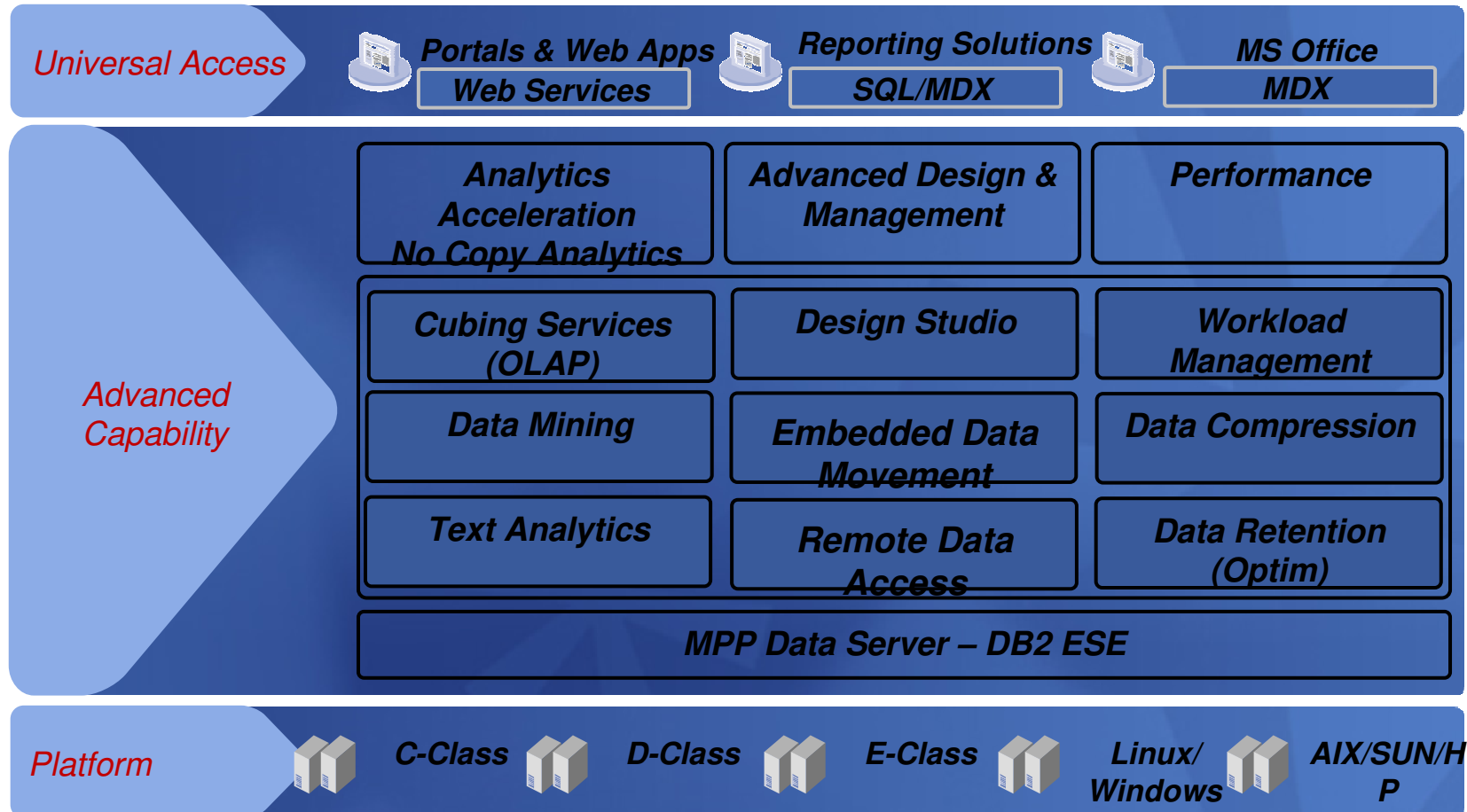
- SOA Infrastructure
- Storage Management Solutions
- Industry Specific Data and Process Models

Trends in Enterprise Data Warehousing and Business Intelligence (BI)

- **Resurging interest in Data Warehousing and BI on System z due to core strengths**
 - ▶ Co-locate with operational information to minimize data duplication & movement
 - ▶ Improve control and availability for critical business information
- **BI platform standardization**
 - ▶ Reduce loose collection of individual BI tools
 - ▶ BI platform accessed via a browser-based thin client
- **Operational BI (aka: Operational Intelligence)**
- **Information as a service (SOA) initiatives**

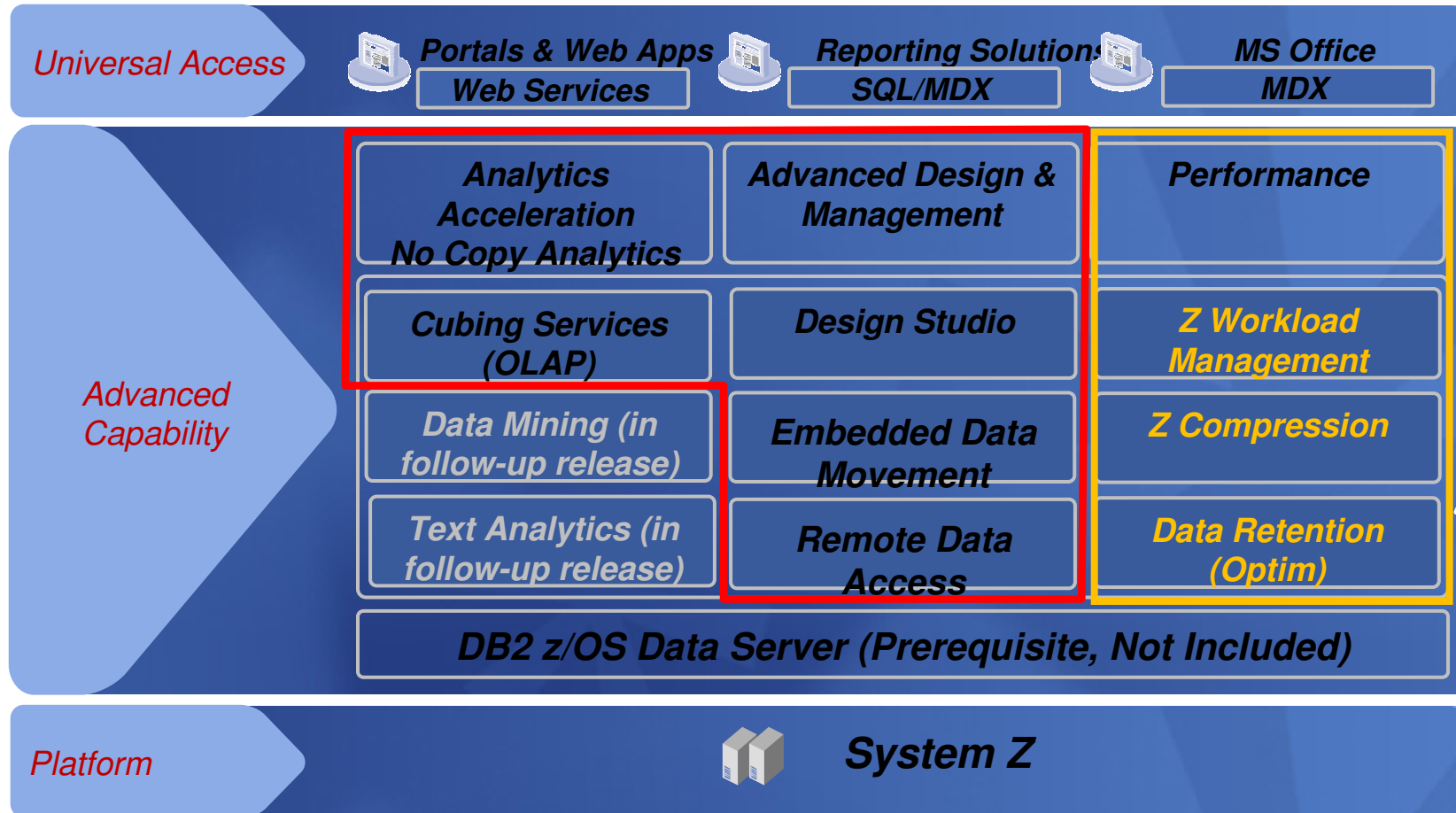


InfoSphere Warehouse 9.5 for LUW



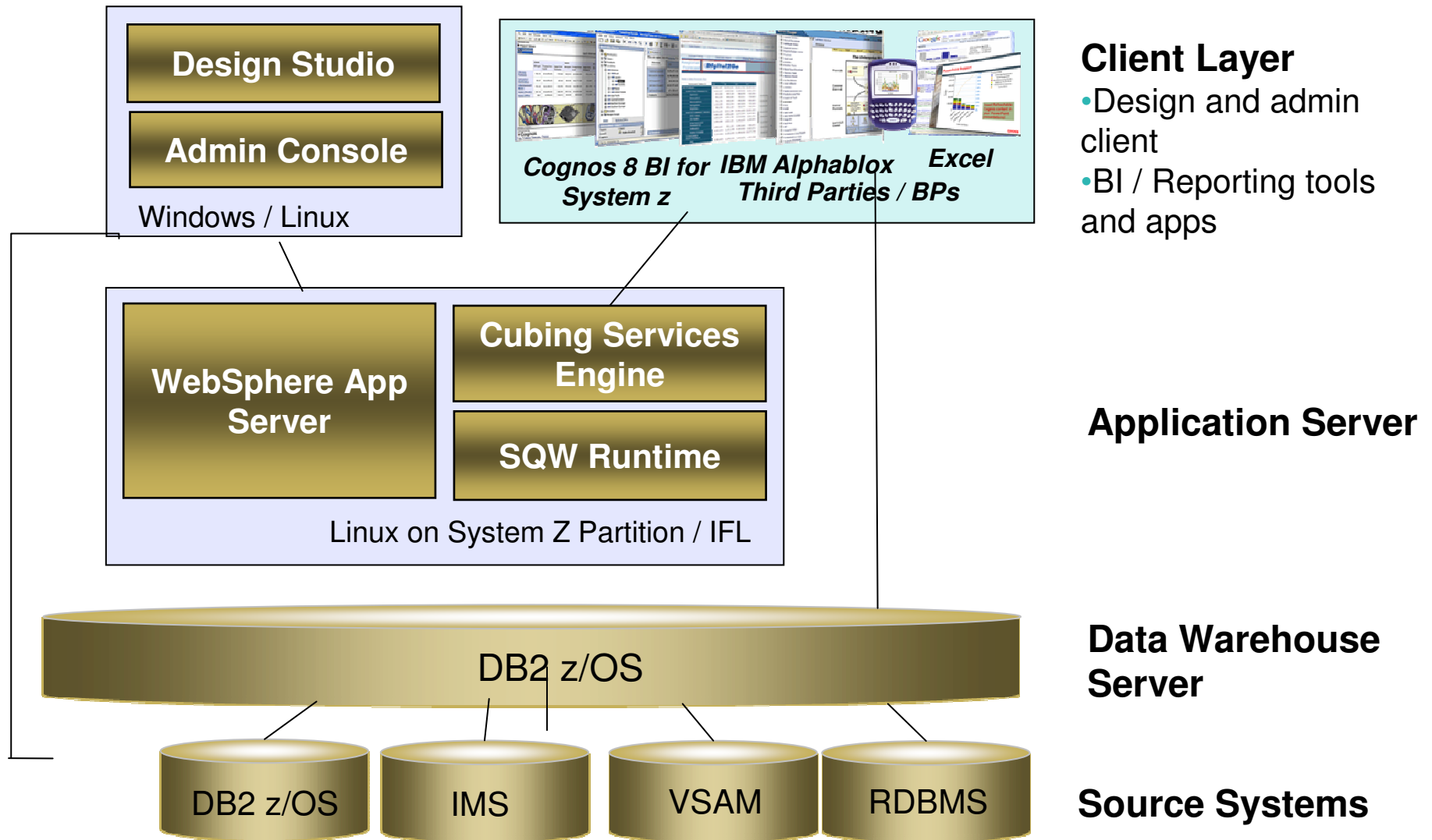
Extend InfoSphere Warehouse to System Z

InfoSphere Warehouse for System Z Edition 9.5



Complete Solution High Level Component Architecture

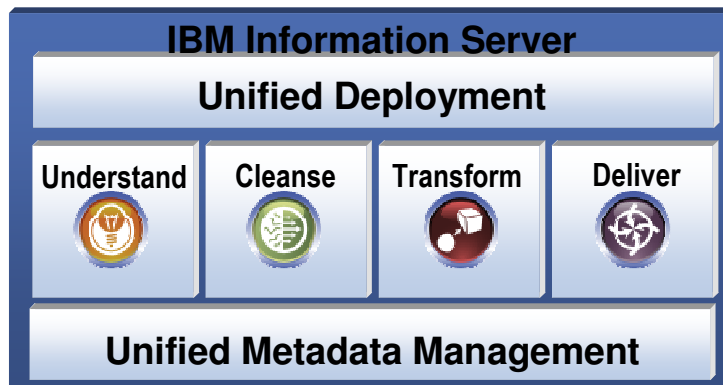
InfoSphere Warehouse for System Z



InfoSphere Information Server for System z

Accelerating the delivery of trusted information

Profile, cleanse, and transform information from heterogeneous data sources to drive greater business insight



- Significant cost savings on System z
- Scalable to any volume and processing requirements
- Fully integrated, auditable data quality
- Metadata-driven integration for increased productivity

AIG chose InfoSphere Information Server to modernize their financial reporting system to create a scalable and extensible solution that tightly integrates with SAP on System z



InfoSphere MDM Server for System z

The first multi-domain, multi-function MDM product in the market

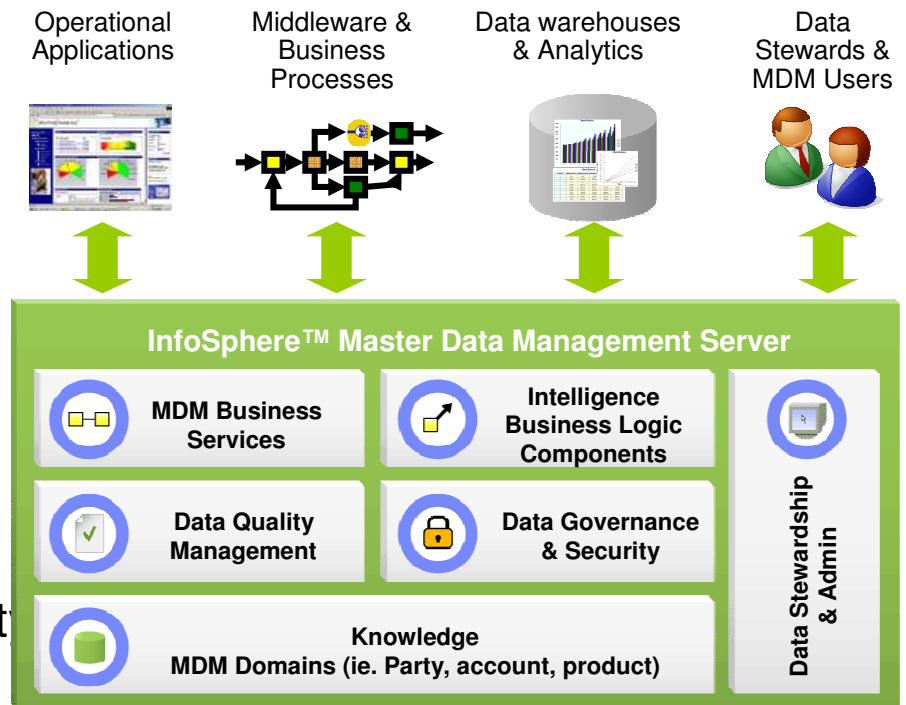
- Packaged to address all types of MDM implementations

- ▶ From small “registry” projects to strategic “transaction-hub” deployments
- ▶ Allows clients to grow as required by implementing existing functionality
- ▶ Significantly lowers client risk and time/cost to implement

- Enables a SOA Library

- ▶ 800 pre-packaged business services
- ▶ Significant out of the box functionality
- ▶ Reduces total cost of ownership

- Provides leading performance & scalability



Can you optimize business performance?

"...How am I supposed to get ahead of the competition? I don't have a good understanding of where I am, or what I should do differently..."



- **Know how you are doing**
- **Understand why**
- **Determine what you should be doing next**



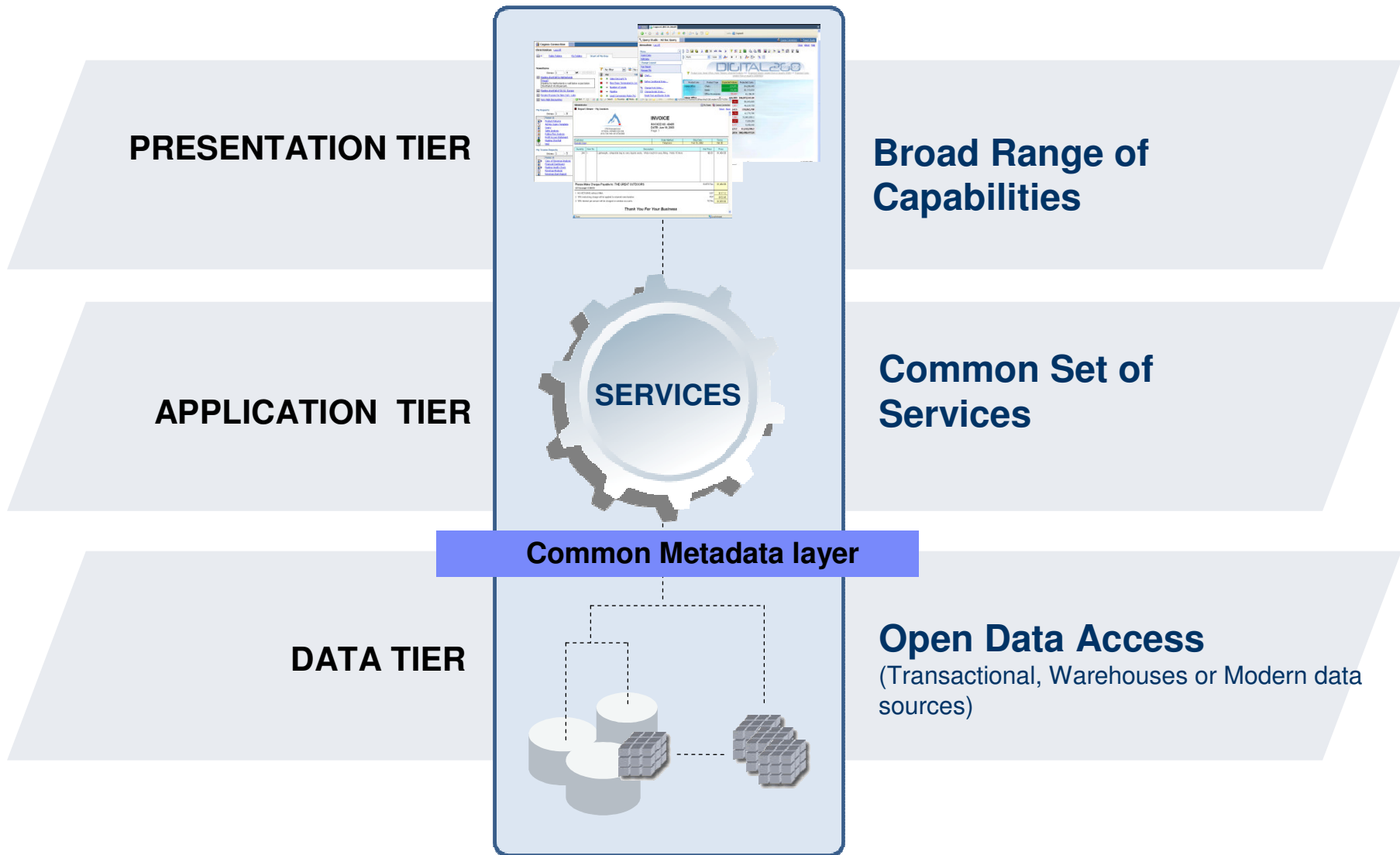
Information Management Software

- Scorecards & Dashboards
- Reporting & Analytics
- Planning, Budgeting & Forecasting

Supporting Capabilities

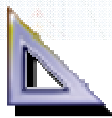
- Portals & Collaboration Tools
- Business Process Management

The IBM Cognos 8 platform



Cognos BI for System z

- Full range of BI capabilities
 - ▶ *All user communities receive relevant information how, when and where it is needed*
- Open enterprise-class platform
 - ▶ *Flexibility and cost effectively scalability to meet growing user demands across any platform*
- Frameworks and proven practices
 - ▶ *Projects get off to the right start with expertise to ensure success on the journey to performance management*



Reporting



Analysis



Dashboards



“This provides a single, real-time and consolidated view of business information to support operational processes and disperse information to the right teams across the company for more effective-decision making.”

Hemant Kulkarni, Head, BI Technology CoE, Satyam

IBM Cognos 8 BI for Linux on System z

Product Capabilities

- Adhoc query, reporting and analysis (Query Studio, Report Studio & Analysis Studio)
- Dashboards and charting (Cognos Connection & Report Viewer)
- Event management (Event Studio)
- Integration with Microsoft Office (Go! Office and CAFÉ)
- Cube building (Transformer)

Initial Conformance

Operating System: •Suse 10 Linux

Database Support: •DB2 z/OS 8 and 9
•DB2 LUW 9.5
•Oracle 10g

Application Server: •Apache Tomcat
•WebSphere 6.109

Content Store: •Derby on Linux for System z
•DB2 9.5 LUW
•Oracle 10g

Directory Server: •Netscape Directory Server 6
•Sun ONE Directory Server 5.1 SP1, 5.2
•IBM Tivoli Directory Server 5.2, 6.0
•Novell e-Directory Server 8.7.3
•LDAP version 3 compliant server

Web Server: •IBM HTTP server 2.0

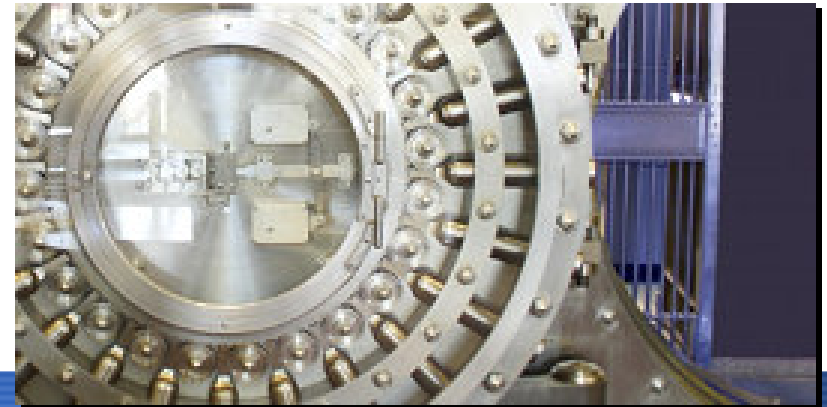
Not included in this initial release are Scorecards (Metric Studio), output delivery to mobile devices (Go! Mobile), and integration with enterprise search (Go! Search)

A Multitude of Information Projects

Each successful in its own right; but limited speed and flexibility...

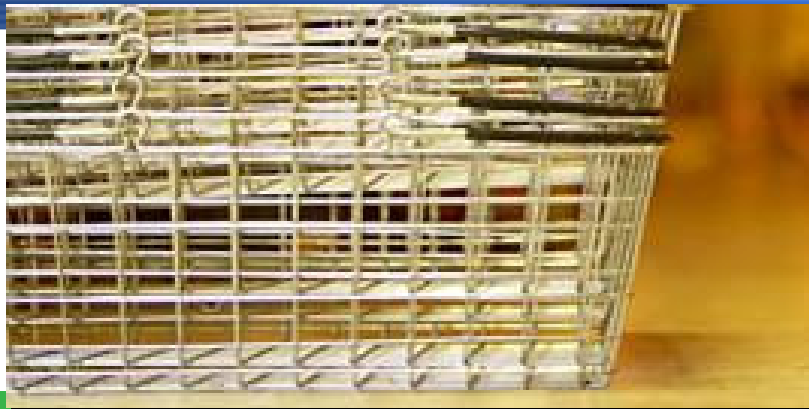
Large Global Bank

- 5 data warehouse projects in 5 years
- Large customer call center deployment
- Reengineered CIF System
- Millions invested



*“I still can’t sleep at night;
I don’t have a real time and accurate view into my risk posture” - Chief Risk Officer*

“I still can’t tell you who our most profitable customers are, let alone serve them well across my channels” - Chief Information Officer



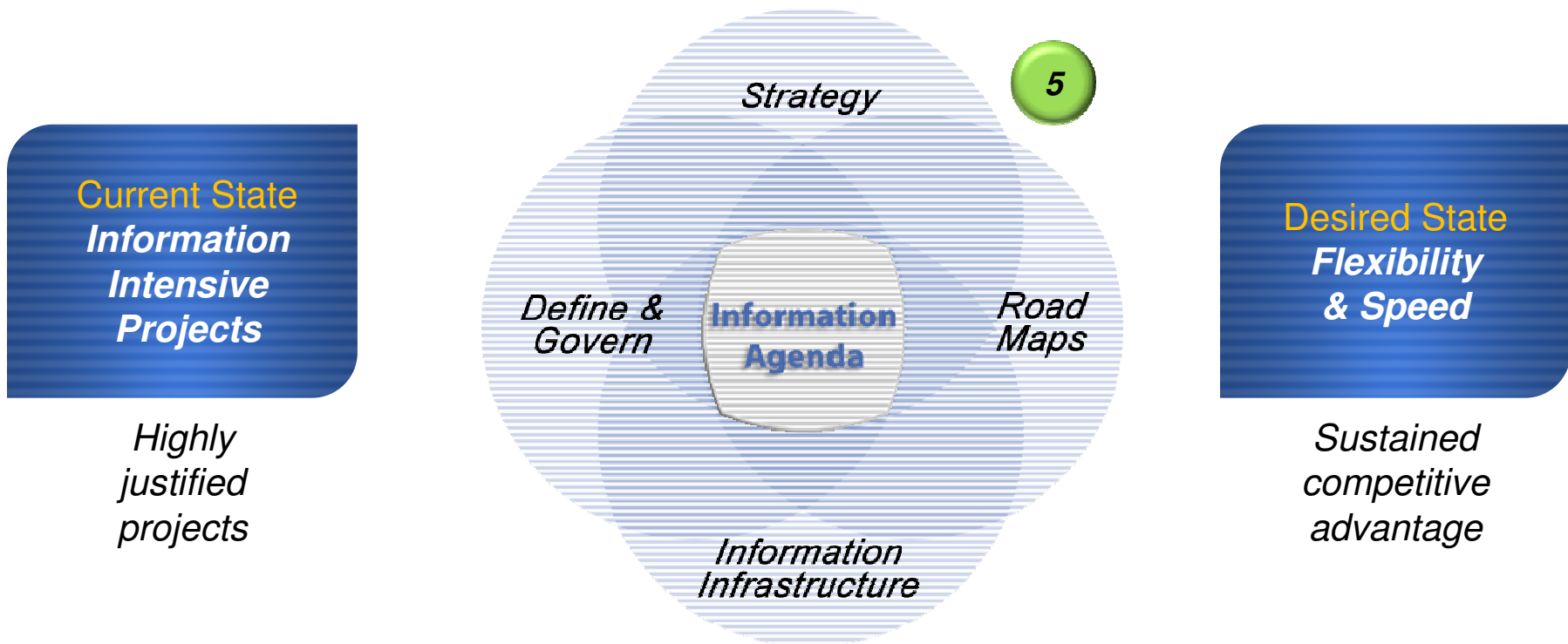
Multi-channel Apparel Retailer

- 3 brick & mortar and 1 web channel
- Multiple customer loyalty systems
- Multiple call centers
- 1 credit card

Becoming an Information Based Enterprise...

Information Agenda: The 5th entry point of Information On Demand

Creating an information agenda helps transform information into a trusted strategic asset that can be rapidly leveraged across applications, processes and decisions for sustained competitive advantage.



Accelerating Your Information Agenda

Recent Announcements result from \$1B+ investment & experience from thousands of client projects

New

Foundational Tools

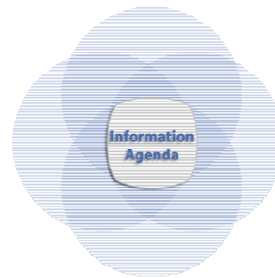
Software to help you convert your information into a trusted strategic asset



New

Information On Demand Competency Centers

Services to help you build information centers of excellence



New

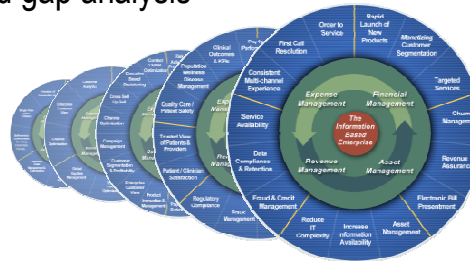
Information Agenda Guides & Workshops

Industry tailored sessions to guide future state design, identification of key information requirements and gap analysis

New

Information Accelerators

Industry specific assets to speed deployment

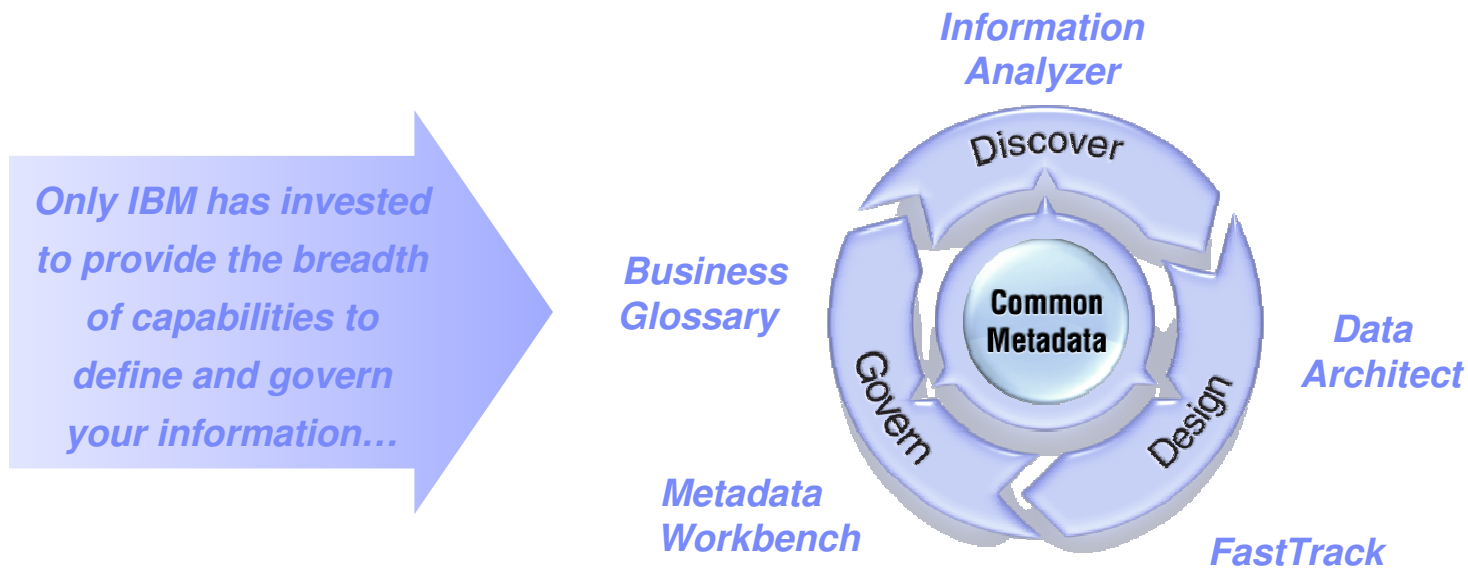


Foundational Tools

New

Software to help convert your information into a trusted strategic asset

Open tools that provide value to any data integration, business intelligence, or data warehouse projects...



- ***Discover, understand and relate the data you have to your business***
- ***Design your trusted information structure***
- ***Govern your information over time***

Information Agenda Guides & Workshops

New

Industry tailored sessions to guide future state design, identification of key information requirements & gap analysis

Banking, Financial Markets & Insurance Guides

- ▶ Banking Information Agenda Guide
- ▶ Insurance Information Agenda Guide

Industrial & Manufacturing Guides

- ▶ Automobile
- ▶ Aerospace
- ▶ Electronics
- ▶ Industrial Products
- ▶ Chemical & Petroleum*

Retail Guide

Consumer Products Guide

Travel & Transportation Guide*

Energy & Utilities Guide*

Healthcare & Life Sciences Guides

- ▶ Payer
- ▶ Provider
- ▶ Pharma

Comm. Service Provider Guide

Media & Entertainment Guide*

Government Guides

- ▶ Federal
- ▶ State & Local Government



Workshops & Guides...

- Workbook and Roadmap Templates
- Information Governance Best Practices
- Led by Subject Matter Experts across IBM

* available in October 2008; Other guides available now

Information Accelerators

140+ Industry-specific Assets to speed deployment



Financial Services

- Risk Adjusted Profitability
- Branch Performance
- Retail Banking Customer Segment Performance
- Corporate Banking Customer Segment Performance...



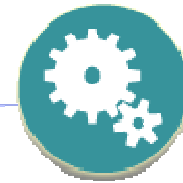
Insurance

- Product Profitability
- Claims Submission Optimization
- Insurance Self Service
- Insurance Scorecard...



Retail

- Store Development
- Strategic Promotions
- Financial Merchandising
- Financial Workbench & Scorecard...



Industrial

- Sales & Operation Planning
- Allocations Optimization
- Risk Analysis
- Trade Promotion Management
- Asset Management...



Telco

- Customer Service
- Customer Billing
- Compliance
- Simple Order...



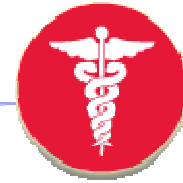
Energy & Utilities

- Intelligent Utility Network
- Asset Plant Lifecycle Mgmt.
- Central Engineering
- Rate Case
- Aging Workforce
- Violations...



Government

- Crime Information Warehouse
- Case Management
- Municipal Performance Management
- Court Management
- Fraud Investigation ...



Healthcare

- Enterprise Health Analytics
- Health Plan Industry Models
- Customer Care & Insight for Health Plans
- Risk, Fraud, & Compliance for Health Plans...

Information On Demand Competency Centers

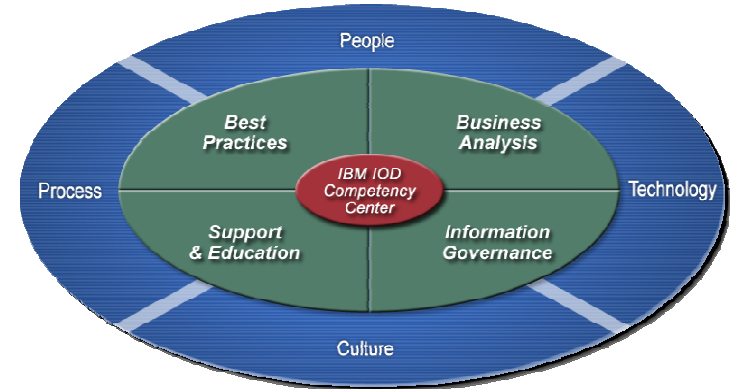
Services to help you build information centers of excellence



Enable organizations to establish their own competency center to empower and support their information agenda

- *A virtual or fixed team within an organization*
 - ▶ IT & line-of-business professionals
 - ▶ Focused on building expertise across the technology, process & skills required to deliver business solutions
- *Provides many services to the business...*
 - ▶ Business analysis, information governance, best-practice repositories, and support & education

...Everything organizations need to design, establish & run a competency center...



Services

- Expertise matching your Information Agenda. Covering people, process & technology
- **Today:** IOD CC Foundation Services. Integrated services across information lifetime.



On-line Community

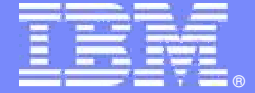
- Dedicated to sharing best practices.
- **Today:** Now spanning warehousing, data integration, and BI&PM



Research & Solutions

- Primary and secondary research, best practices, how-to guides, white papers, books
- **Today:** Expanded to span integration topics





Information Management

thank you!

wardman@us.ibm.com

