

Smarter technology for a smarter planet:

**IBM® Enterprise
Advance**

Advancing Business Intelligence

The New Era of Business Analytics from IBM

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Data Warehousing

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System z: The platform for the future

"you cannot think seriously about your longer-term IT architecture without thinking equally seriously about what today's mainframe environment has to offer"



CIO Magazine: Mainframe computing is set for a rebirth
– September 29, 2009

Organizations are Operating with Blind Spots

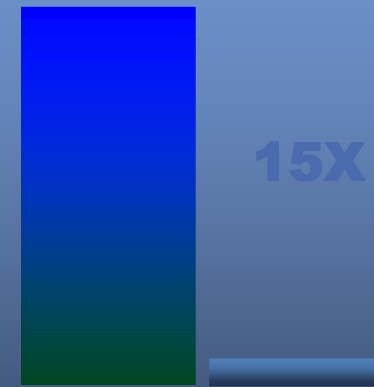
1 in 3

Business leaders frequently make decisions based on information they don't trust, or don't have

1 in 2

Business leaders say they don't have access to the information they need to do their jobs

Top Performers Demonstrate Expertise



Predict and prepare for the future by evaluating trade-offs proactively

■ Industry Top performers
■ Industry Under performers

Source: IBM: Break Away with Business Analytics and Optimization Study

Why is BI/DW the #1 investment area?

Because the results are changing the playing field!

*Organizations are focusing on BI and analytics projects that help reduce costs or retain customers. There is growing evidence that **more pervasive BI and analytics have a direct impact on competitiveness.***

Better decision making is more important when resources become restricted during a recession, so BI and analytics projects will still appeal to management.

The gains from business analytics projects

- 54% from business process improvements
- 42% from productivity gains
- 4% from technology cost savings

Source: IDC Dan Vesset, [The Road to BI Success](#), Jan 2010



Operational information to drive the business

Using information to make fact-based decisions

- **See:** *Observe trends, identify events, and detect changes within the business and external activities that affect the business.*
- **Respond:** *Take actions using current information in the context of the issue, at the time of decision*
- **Evaluate:** *Categorize, classify, and understand the information of the business, predicting future outcomes and behaviors.*
- **Transform:** *Optimize business processes to be compliant, that reduce costs, increase sales, and enable better customer service*



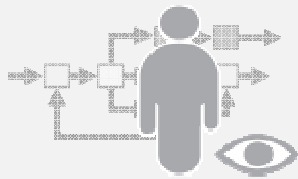
Imagine If Your Decision Makers Could...

...predict and treat high-risk patients to proactively intervene at time of visit?

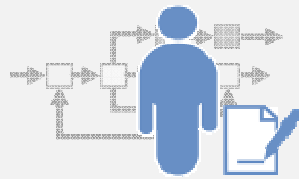
...identify suspects based upon initial witness information on arrival at scene?

...provide targeted cross sells that drive additional sales when offered at time of sale?

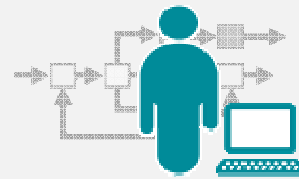
... predict correct order levels at time of purchase?



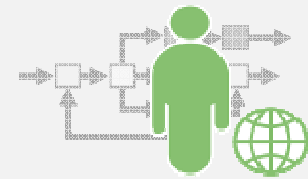
Physician



Police Detective



Retail Sales Manager



Purchasing Agent

...optimize every transaction, process and decision at the point of impact, based on the current situation, without requiring that everyone be an analytical expert

For some it is more than a vision

Predictive Analytics



Center for Disease Control Improve Health Care and Patient Outcomes

- Quickly capture and analyze data on critical public health issues, characterize diseases, identify risk factors and quickly assess medical needs
- Predict the expected course of outbreaks and plan the response for improved public safety



Richmond Police Department Predict and Prevent Criminal Activity

- Analyse incident reports, tips and service calls and identify and predict crime patterns, pinpoint “hot spots” and place tactical units where they are needed most
- 20-30 % decrease in violent crime and homicides in a 12-month period

Business Intelligence



Selling fish while fishermen are still out at sea

- Fishermen selling their catch before they arrive in port, evaluating the market for each type of catch and focusing their efforts on the best return

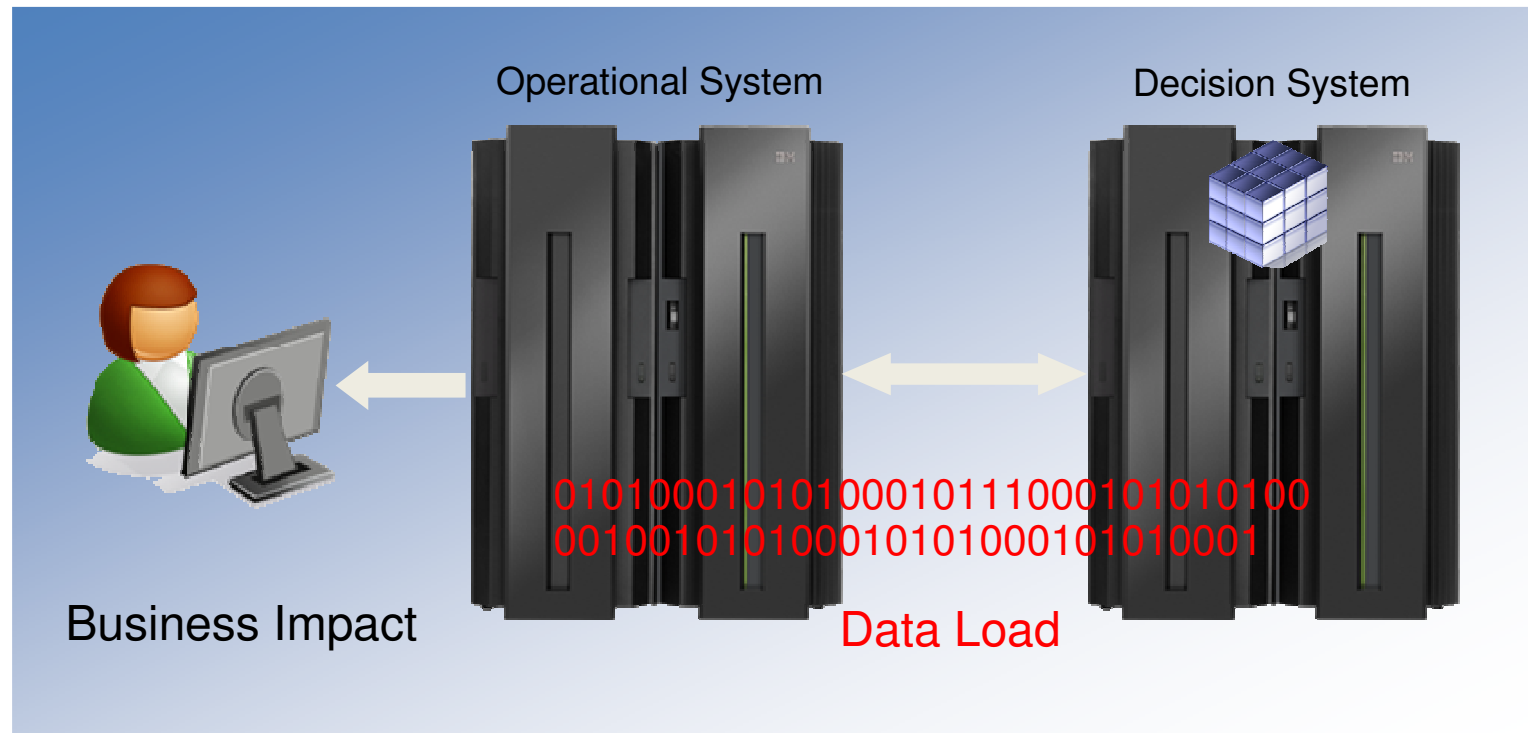


Rescheduling passengers while they are still in the air

- Airline rebooking passengers onto new flights based upon business impact, that will not be able to connect because of a late flight

Decision and operational systems in concert

Operational facts from current analysis in context



Analytics delivered via SOA

Gartner on next generation systems

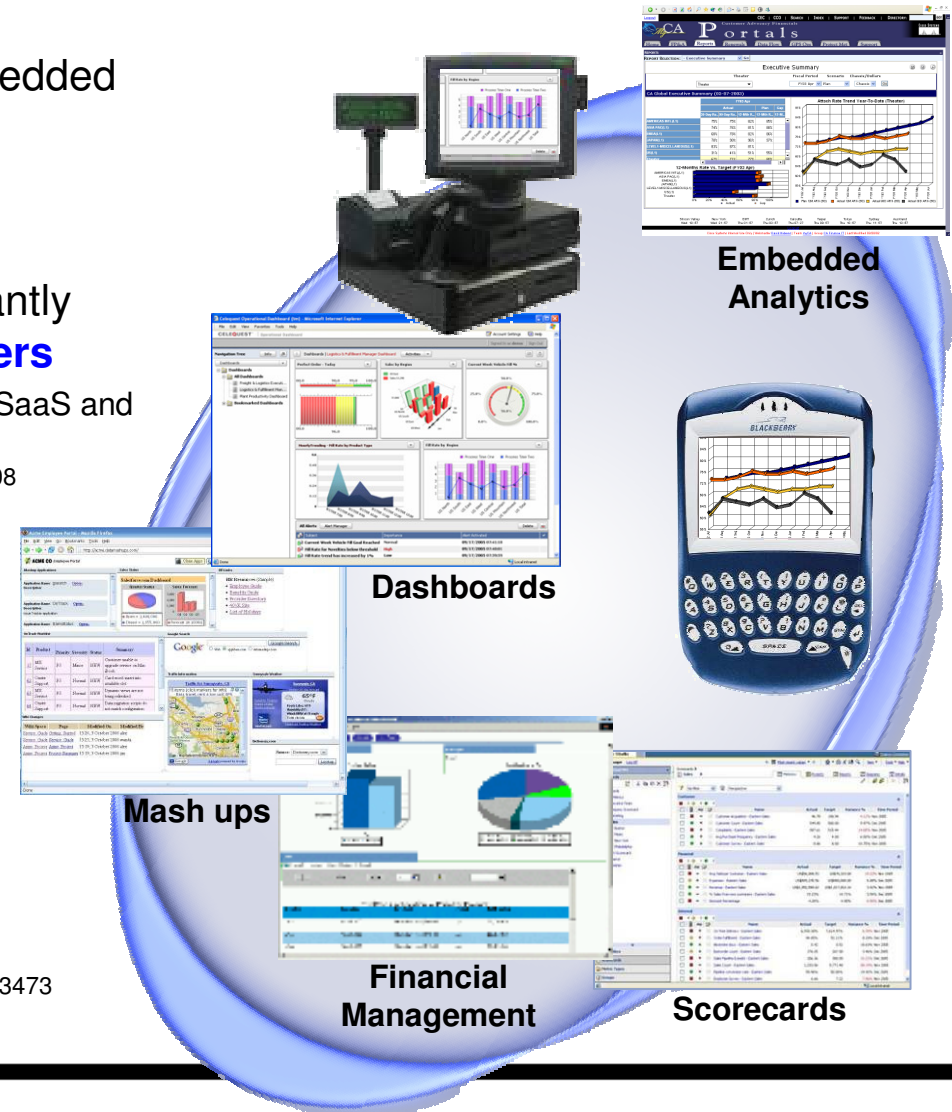
By 2012, BI Platform capabilities will be embedded as a service within **75% of new business applications**.

By 2012, emerging technologies will significantly drive adoption of **BI to 50% of business users** (e.g. interactive visualization, in-memory analytics, search, SaaS and SOA)

Source : Gartner BI Summit 2008, 4/2008

The data warehouse is a **mission-critical** system, with data warehouses serving in an increasingly **mixed workload** capacity with **different SLA agreements**, including as a data source for online applications.

Source: Gartner, Inc. 23 December 2008/ID Number: G00163473



The two constraints to operational BI

1. Availability of the analytics providing platform

- Must have same availability as operational system
- Must meet required SLA – can not be weak link in the chain
- Must be able to be recovered with operational system in a disaster

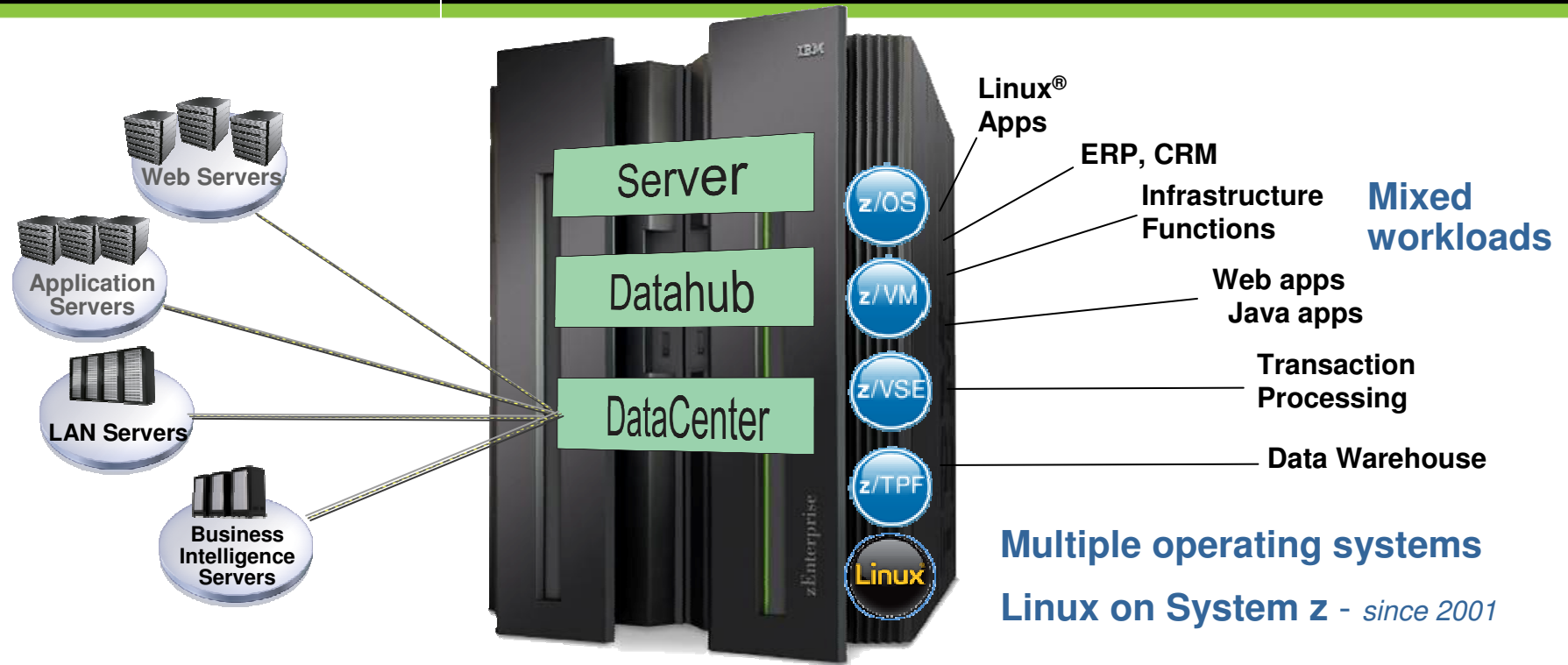
2. Speed of analytics must be comparable to operational system

- Analytics must be fast enough to be used at the time of event
- May require in-depth analysis
- May require follow-on queries



System z with the Smart Analytic Optimizer addresses these 2 issues

What is a System z?



 **Most scalable**
Scale up and out

 **Unmatched security**

 **Extreme virtualization**
Up to 100% utilization

 **Highest throughput for high I/O transactions**

 **Unparalleled reliability, highest availability***

 **Leader in green technologies**

IBM® Enterprise Advance

11 Advancing Business Intelligence

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* z/OS® sysplex



60% of Enterprise Information is on System z

Unlocking the Business Value of Information to Optimize

\$3 trillion/day transferred through IMS by one customer

95% of top Fortune 1000 companies use IMS

Over 15 billion GBs of production data in IMS...

8 of every 10 of the largest retail banks in the US, Germany, Japan, and Australia use IMS for their core banking

24x7 ATM Deposits & Withdrawals

Reserves airline seats



Runs the world's stock exchanges & banking networks

Tracks the world's packages

DB2 for z/OS supports the world's largest known peak database workload

DB2: 9 of the top 10 global life/health insurance providers

DB2: 59 out of the top 59 banks in the world

23 of the top 25 US retailers

Information on Demand Software Stack is now on System z ...

System z: The More You Use It, the More You Save

Based on an analysis of actual IT spend and business performance, comparing companies with greater than average mainframe mix vs. less than average mainframe mix...*



44%

lower IT cost per credit card transaction



31%

lower IT cost per consumer loan



25%

lower IT cost per mega watt hour produced



24%

lower IT cost per hospital bed



20%

lower IT cost per airline passenger



26%

lower IT cost per new vehicle



25%

lower IT cost per retail store



23%

lower IT cost per barrel of oil

“...in the long run the marketplace rewards those that make the optimum use of the right computing resources in the right way as evidenced by business performance”

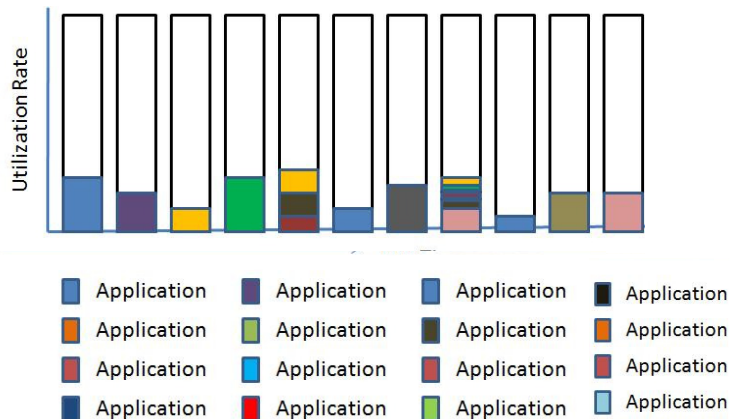
Dr. Howard Rubin, CEO and Founder, Rubin Worldwide

Maximizing Utilization of Resources

- Up to 100% server utilization compared to 10-20% distributed server utilization¹
- Shared everything infrastructure allows for maximum utilization of resources
 - CPU, Memory, Network, Adapters, Cryptography, Devices

Lowest power consumption for each work unit

Underutilized distributed servers

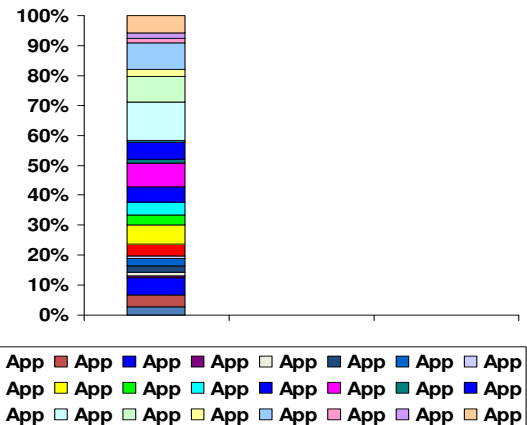


Typically single application per server

¹ Source: gomainframe.com Joe Clabby

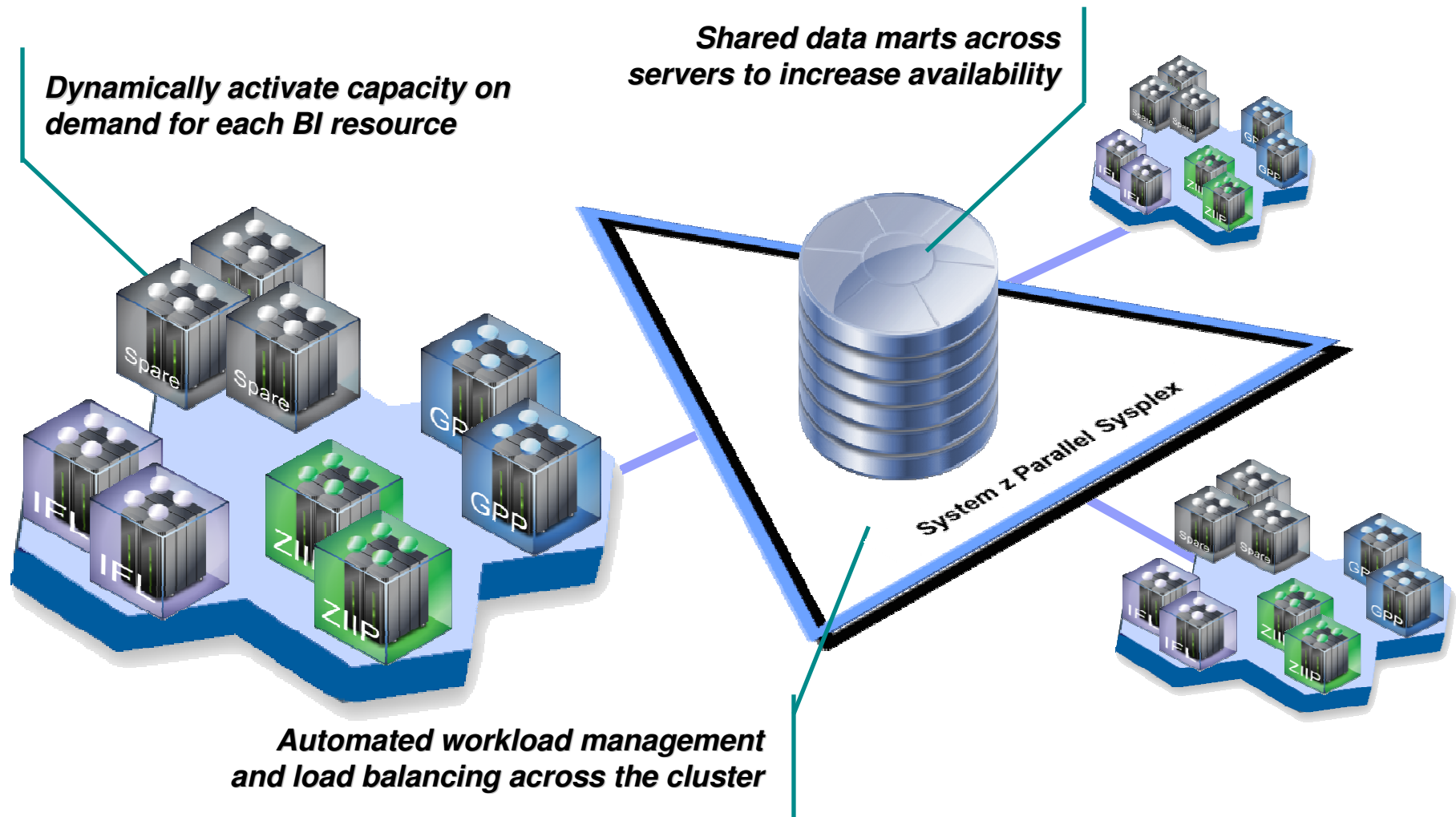
Real savings

Up to 100% utilized System z server



Multiple applications on one System z server

Scalable for all types of growth



IBM zEnterprise System

Best-in-class systems and software technologies

A “System of Systems” that unifies IT for predictable service delivery



IBM zEnterprise 196 (z196)

- Optimized to host large-scale database, transaction, and mission-critical applications
- The most efficient platform for large-scale Linux consolidation /workloads
- Capable of massive scale-up
- New easy-to-use z/OS V1.12

zEnterprise Unified Resource Manager

- Unifies management of resources, extending IBM System z qualities of service end-to-end across workloads
- Provides platform, hardware and workload management

zEnterprise BladeCenter Extension (zBX)

- Selected IBM POWER7 blades and IBM System x Blades* for tens of thousands of AIX and Linux applications
- High-performance optimizers and appliances to accelerate time to insight and reduce cost
- Dedicated high-performance private network

IBM® Enterprise Advance

Advancing Business Intelligence

IBM Smart Analytics System 9600

Unprecedented Value in Deploying New Business Analytics

What is it?

The IBM Smart Analytics System 9600 is an integrated solution of hardware, software and services that enables customers to rapidly deploy cost effective game changing analytics across their business.



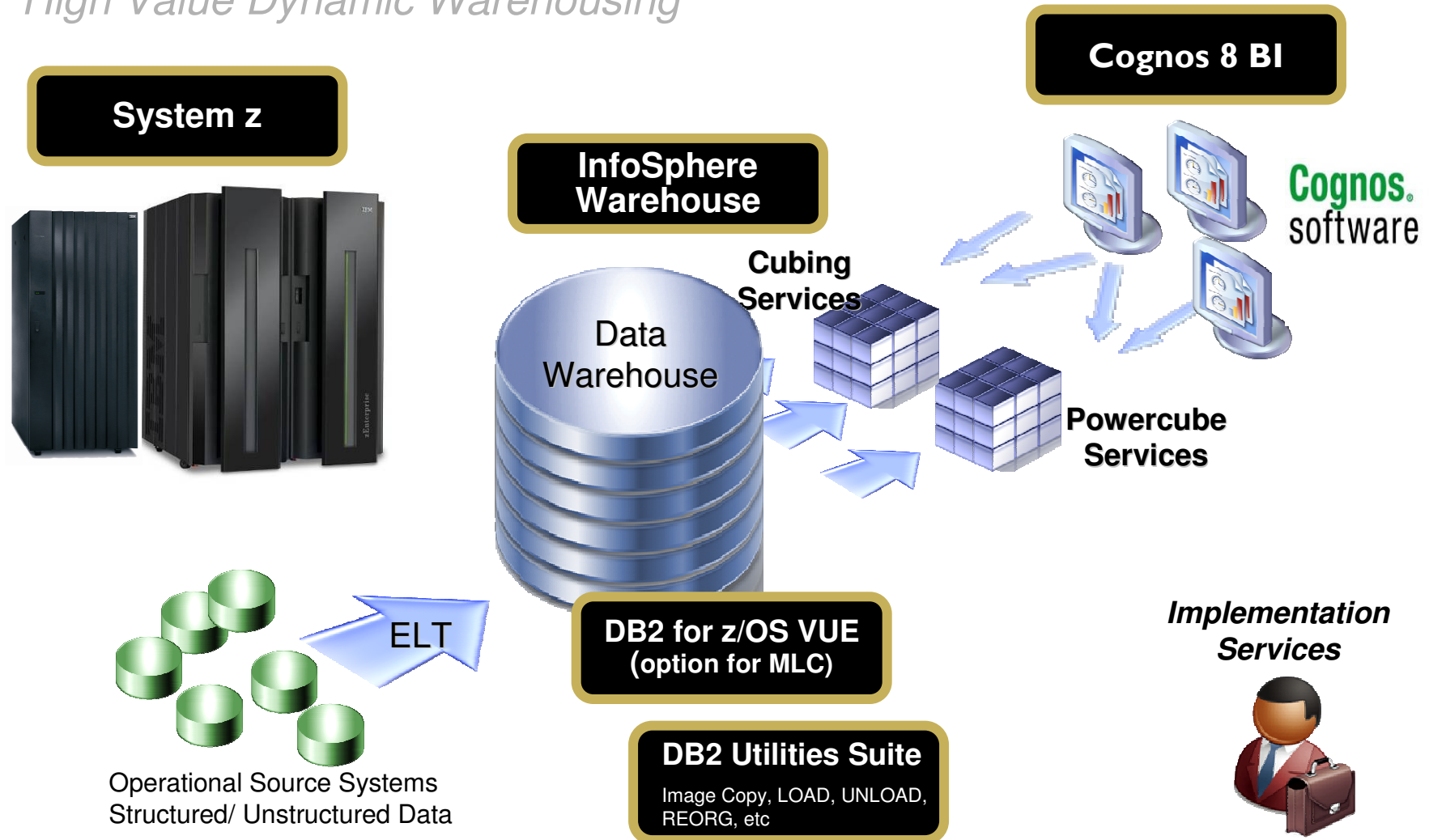
How is it different?

- **Secure, Available Business Analytics**
 - Rapidly delivers analytic information to decision makers at the time of decision.
 - New environment for the availability, reliability and scalability necessary to stay aligned with the operational systems
- **Simplified administration**
 - Appliance-like delivery
 - Faster deployment at lower cost.
 - Leverages customers existing disaster recovery, and backup processes
- **Proven Operational Characteristics**
 - Extends the qualities of service of System z.
 - Reduces risk through extending System z manageability and security across the entire system.
- **High Value Operational BI**
 - Cost effective way to drive daily operational decisions

Delivering business results in days, not months

IBM Smart Analytics System 9600

High Value Dynamic Warehousing



IBM Smart Analytics Optimizer

Capitalizing on the best of relational and the best of columnar databases

What is it?

The IBM Smart Analytics Optimizer is a workload optimized, appliance-like add-on that enables the integration of business insights into operational processes to drive winning strategies. It accelerates select queries, with unprecedented response times.



How is it different

- **Performance:** Unprecedented response times to enable 'train of thought' analyses frequently blocked by poor query performance.
- **Integration:** Connects to DB2 through deep integration, providing transparency to all applications.
- **Self-managed workloads:** queries are executed in the most efficient way
- **Transparency:** applications connected to DB2 are entirely unaware of the accelerator
- **Simplified administration:** appliance-like hands-free operations, eliminating many database tuning tasks

Breakthrough Technology Enabling New Opportunities

Extreme performance for complex queries

Game-Changing Performance

- ✓ **Rapidly delivers information to decision makers through breakthrough technologies providing dramatic performance improvement.**
 - ✓ ***In-memory processing***
 - ✓ ***Massively parallel architecture***
 - ✓ ***The best of row and columnar store technologies***
 - ✓ ***Highly compressed data***
 - ✓ ***Compressed data operations***
- ✓ **Enables decision makers to submit queries they never dared in the past, that analyze trends, predict outcomes, and produce better business results.**



Orders of Magnitude Faster for Queries

Beta Customer Results

For customers who have struggled to achieve the required performance from their complex BI queries – **the results are astounding!**



... and its acceleration factor ::

Runtime of queries w/o the IBM Smart Analytics Optimize**Factor**

163 s

48

2311 s

511

25 s

12

1593 s

206

35 s

4

5435 s

1424

with IBM Smart Analytics Optimizer

3s

5s

2s

8s

8s

4s

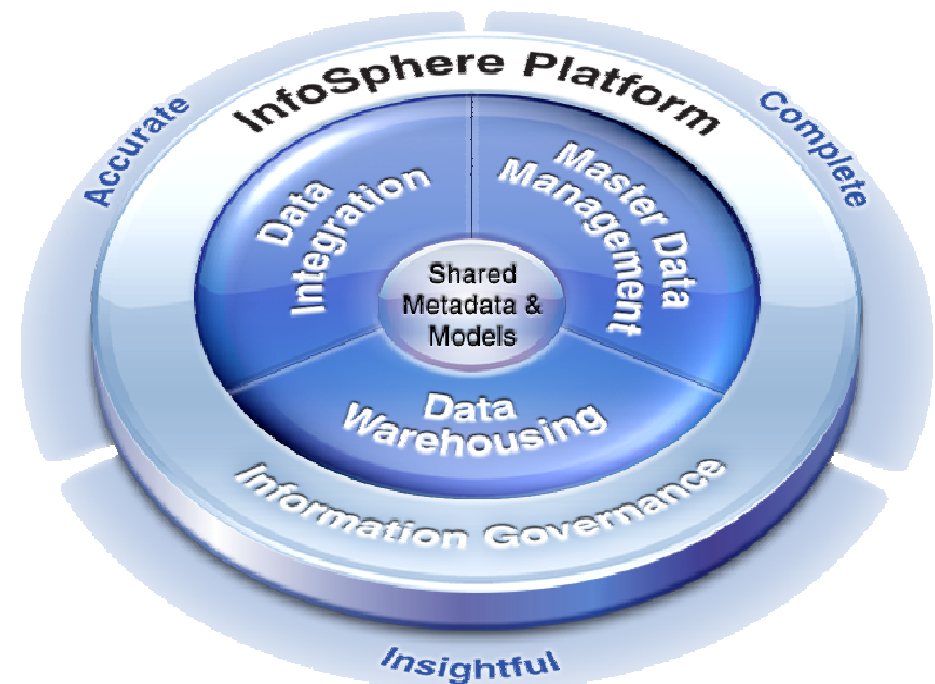
IBM® Enterprise Advance

Advancing Business Intelligence

IBM InfoSphere - delivering trusted information

Accelerate value through:

- Defining & understanding existing assets
- Promoting collaboration
- Mitigating risk
- Reducing costs
- Protecting sensitive information assets
- Scaling from individual project to enterprise initiatives

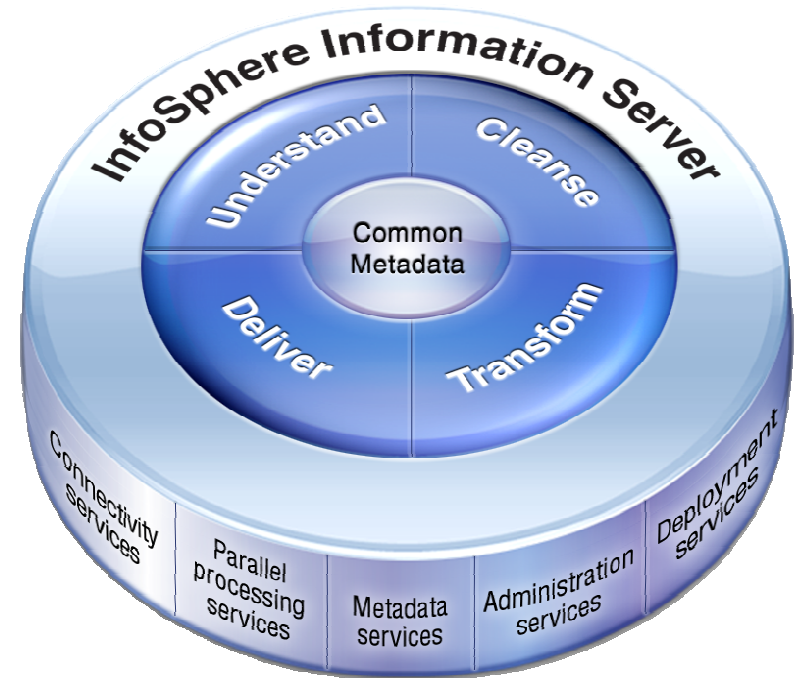


IBM InfoSphere Information Server

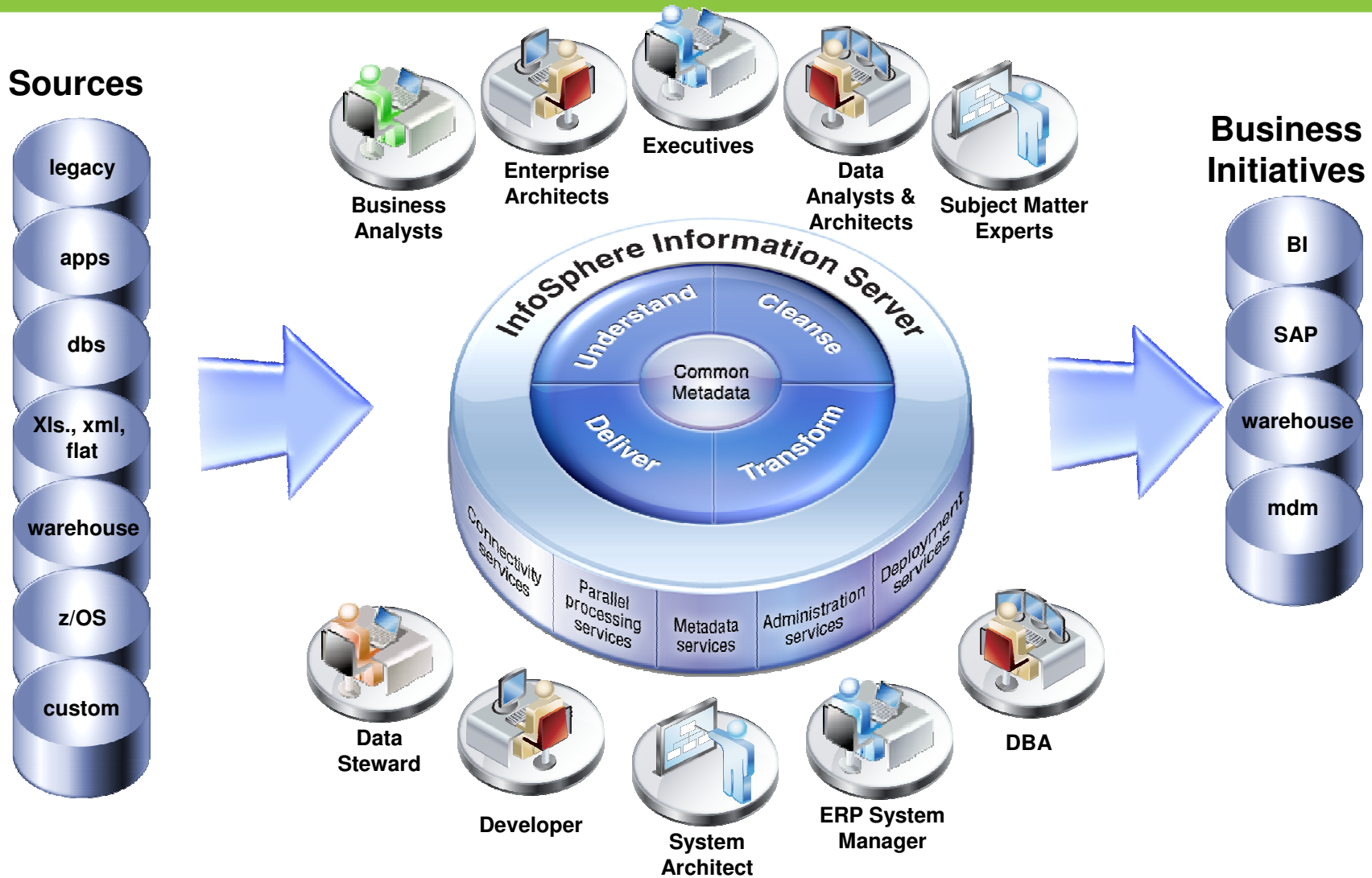
The market-leading data integration platform

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**



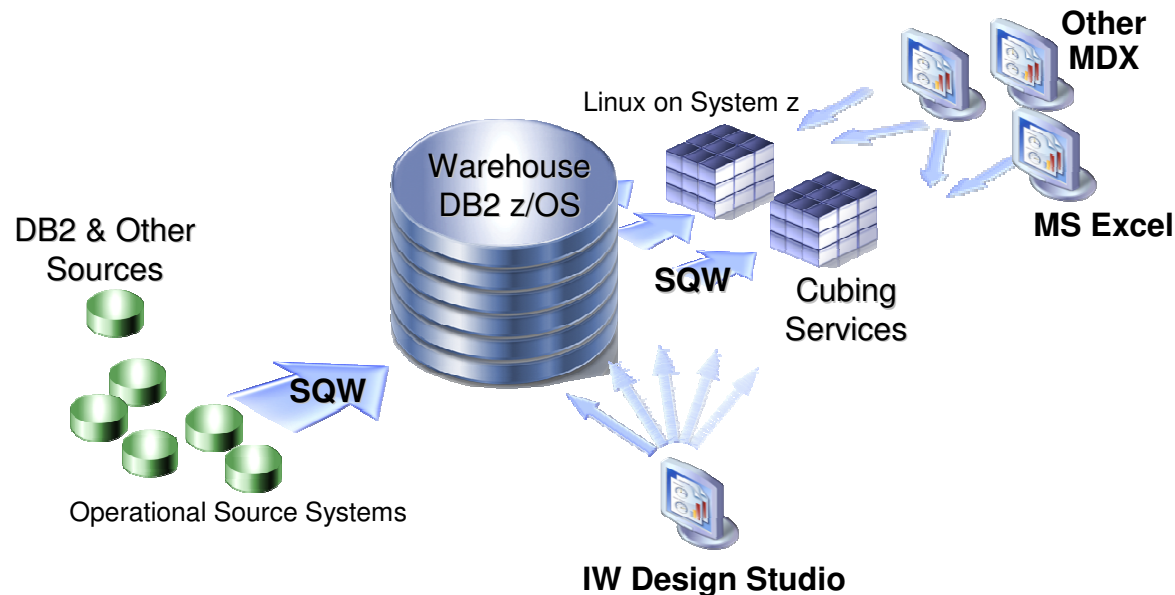
Single platform for complete information management



InfoSphere Warehouse on System z

Delivers Data Warehouse Suite on System z -

- *Advanced physical database modeling and design – Design Studio*
- *In-database data movement and manipulation capabilities of SQL Warehouse Tool (SQW)*
- *Optimize multidimensional reporting and analysis of data with Cubing Services*

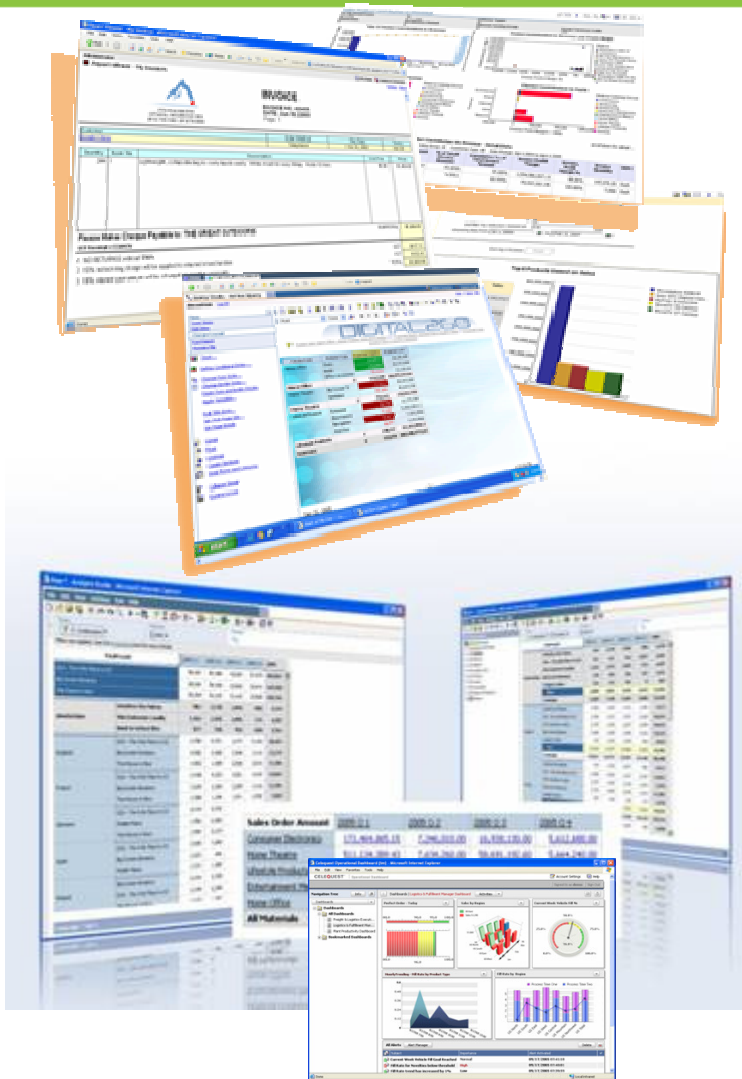


Cognos BI & System z

Simplifying the management and maintenance of your enterprise BI infrastructure.

- Customers have told us they want the following from their BI and DW infrastructure:
 - **Fewer BI tools in house – BI standardization**
 - **Server consolidation** - Significant savings in the hardware, software, operating and people costs associated with the management and maintenance of your enterprise BI infrastructure.
 - **Rapid deployment at a low cost**
 - **Full range of BI capabilities** including real-time monitoring, reporting, analysis & dash boards tightly integrated with the Data warehouse
 - Better, more rapid deployment - associated with a new BI application and/or increasing capacity.
 - **Maximum scalability, reliability, availability and security**
 - **Simplified and faster access to the transactional data** located on System z – Operational BI scenarios

Cognos 8 BI – the flagship BA product



- **Enterprise Reporting**

- Supports multiple report types: Production, Managed, Ad-hoc, Financial, etc
- Is adaptable to any data source
- Operates from a single metadata layer
- Can be personalized and targeted
- Can be distributed via email, portal, MS-Office, search application and mobile device

- **Analysis**

- Enables the guided exploration of information that pertains to all dimensions of your business
- Performs complex analysis and scenario modeling easily and quickly
- Gets to the “why” behind an event or action to improve business performance.
- Moves from summary level to detail levels of information effortlessly

- **Dashboards**

- Translate complex information into high-impact presentations
- Allow you to spot changes
- Are highly intuitive
- Align decision makers

Query Studio - New

Menu

- Insert Data
- Edit Data
- Change Layout
- Run Report
- Manage File

Font [Font] [Font Size] [B] [I] [U] [Color] [Background Color]

New Ad Hoc Query

Select and insert items from the tree to fill in the report.
You can also drag and drop items into the report.

Use Ctrl+click to select multiple items in the tree or report.
Right-click report item headings to access commonly-used actions.

DIGITAL200

Product Line	Product Type	Production Cost	Expected Volume
Consumer Electronics	Computer Accessories	\$6,135.00	47,667
	Computers	\$7,411.88	14,086
	MP3	\$14,530.00	22,977
	PDA	\$42,480.00	12,620
	Receiver	\$204,720.00	88,390
Consumer Electronics		\$275,276.88	185,740
Entertainment Media	CD Audio	\$57,060.00	91,905
	DVD Video	\$1,548.00	91,430
	Entertainment Accessories	\$11,813.40	328,035
	Game Console	\$54,360.00	123,844
	Software	\$33,894.00	189,597
Entertainment Media		\$158,675.40	824,811
Home Office	Chairs	\$57,650.00	276,778
	Desks	\$110,880.00	220,875
	Office Accessories	\$452.44	75,354
Home Office		\$168,982.44	573,007
Home Theatre	Big Screen TV	\$580,560.00	38,138
	Speakers	\$131,280.00	132,345
	Standard TV	\$107,760.00	20,502
Home Theatre		\$819,600.00	190,985
Lifestyle Products	Binoculars	\$27,720.00	42,805
	Eyewear	\$94,666.00	53,250
	Illuminations	\$69,850.80	136,330

ERROR: undefined
OFFENDING COMMAND: ~

STACK: